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# Consultation Appendix

**Default Tariff Cap: Statutory Consultation**

**Appendix 2 – Cap level analysis and headroom**


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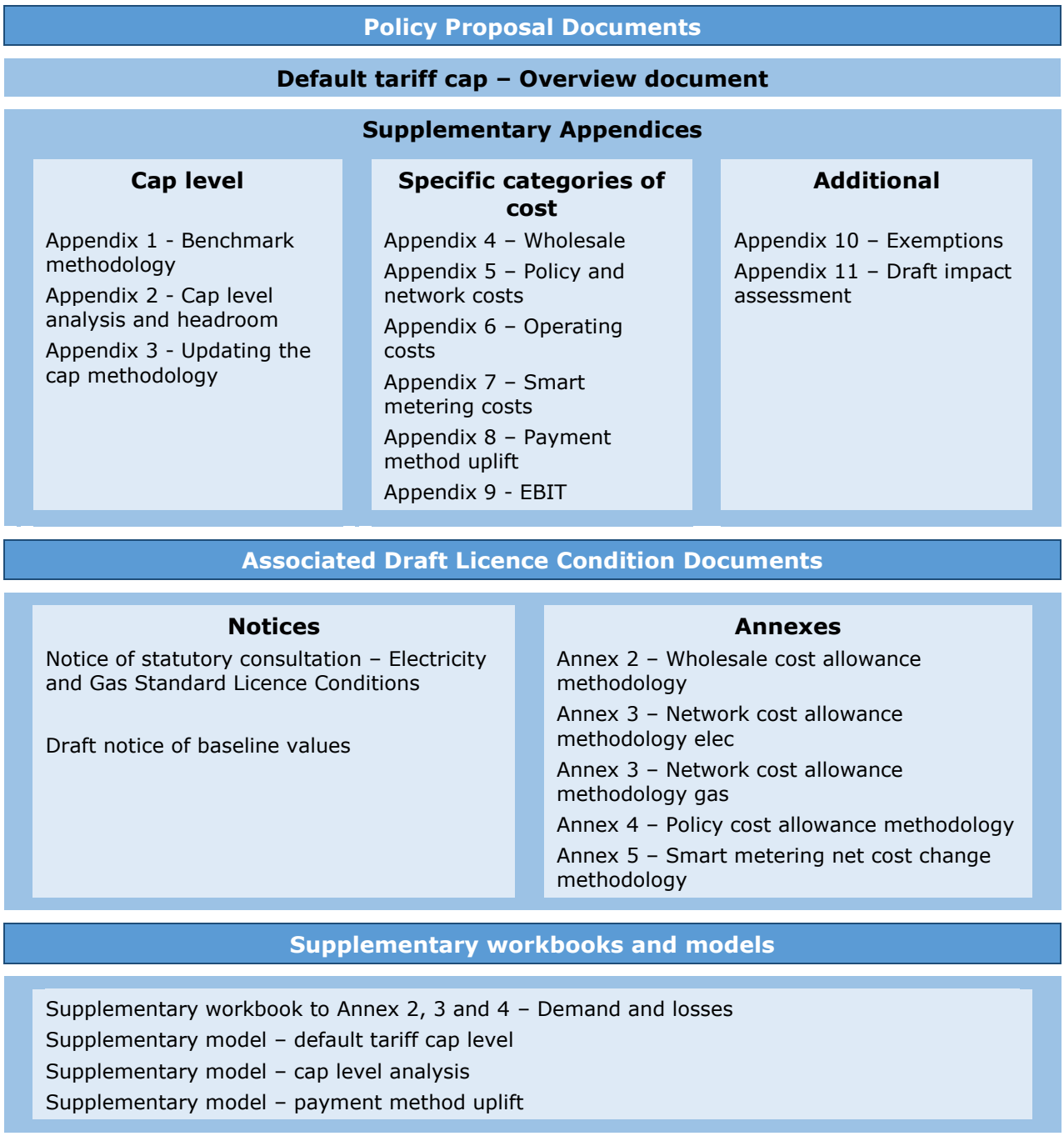
We are consulting on our proposals for setting and updating a default tariff cap in accordance with the Domestic Gas and Electricity (Tariff Cap) Act 2018. This supplementary appendix provides details of the proposals and methodology in relation to cap level analysis and headroom. This document is aimed at those who want an in-depth understanding of our proposals. Stakeholders wanting a more accessible overview should refer to the Default tariff cap – Overview document.

We welcome views from stakeholders on all of our proposals set out within this document. Please see the Default tariff cap – Overview document for instructions on how to respond to the consultation.

## Document map

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

**Figure 1: Default tariff cap – statutory consultation document map**



## Contents

# 1. Introduction

1.1. In this appendix we discuss the justification for our proposed decision on the overall level of the cap, and in particular whether to include a "headroom" allowance; an increment between the efficient level of costs[1] and the level of the default tariff cap. Our proposed decision on headroom has been taken in the round with our proposed decision on the efficient level of costs benchmark.

1.2. We propose to set the default tariff cap at £1,007 (Dual Fuel, Single Rate) for customers who pay by direct debit, and £1,082 for customers who pay by standard credit at typical domestic consumption values (TDCV) in 2017 terms.[2] This includes an allowance for efficient costs and for headroom. We believe this level of the cap best meets the objective of the Act and the matters to which we must have regard.[3]

1.3. In our May consultation we suggested we might set the overall level of the cap higher than our cost benchmark. We suggested three reasons we might set a cap higher than the efficient benchmark:

- Uncertain costs, not accounted for in the benchmark
- Variation in efficient costs
- Incentives to switch.

1.4. In our May consultation we also explained that we could not make a judgement about headroom independently of our assessment of our cost benchmark. Decisions on these two issues will need to be taken together, with all factors being considered in the round. This is because different approaches to setting the benchmark have different levels of uncertainty, and could account for variation in efficient costs differently. Our proposal for the level of the cap considers what combined effect our proposed benchmark and headroom has on managing uncertainty and the matters set out in the Act.

1.5. In the consultation, we analysed a range of headroom values up to £110, but focused our considerations on levels from £0 to £70[4] above an efficient benchmark, where the efficient benchmark in the May consultation represented a benchmark based on suppliers with the lowest costs in the market (the efficient frontier). We included four illustrative headroom scenarios in the consultation. These were hypothetical scenarios, included purely for modelling purposes to demonstrate how different headroom levels compare. Chapter 2 explains how these relate to our proposed cap level.

1.6. We propose to set the overall direct debit baseline cap at £1,007, which includes £10 of headroom on top of our 2017 baseline for the efficient benchmark. Under our proposed methodology, the benchmark already contains allowances for uncertainty and variation in efficient costs. Taking the benchmark and headroom allowance together, we propose to include £36 (excluding VAT impact) in our baseline for uncertainty and variation in efficient costs. In part, this follows our consideration of the need to have due regard to the financeability of an efficient supplier. This level of 'headroom'

[1] The minded-to decision on the efficient benchmark is discussed in Appendix 1 – Benchmark methodology.
[2] 3100KWh per annum for electricity single rate domestic customers, 4100KWh for gas single rate domestic customers, and 4600KWh for electricity multi-rate domestic customers.
[3] Detail on the proposed level of the cap is set out in the Overview document.
[4] For a dual fuel customer with typical consumption.

(comparing the cap level to the efficient frontier) is in the middle of the range we presented in our May consultation.

1.7. At this level, we consider that the overall level of the cap provides sufficient incentives for customers to switch contracts and allows suppliers to compete. We do not think there are strong arguments for providing any additional headroom so that suppliers with high costs can offer cheap fixed tariffs by charging SVT customers more, as that would not be consistent with the objective of the Act. In any case, we consider there will be incentives for customers to switch and the ability for a range of different types of suppliers to compete for customers effectively. A number of suppliers have costs below the efficient cost benchmark, or will not need to utilise the allowances for uncertainty. These suppliers can help provide active competition and incentives to switch.

1.8. In Chapter 2 we explain our approach and rationale.

**Headroom design considerations**

1.9. We propose to set headroom in percentage terms and it will apply to all cost components except network costs. There are a number of cost components in the efficient benchmark that vary regionally. We are proposing that headroom is applied to these cost components due to the uncertainty associated with them. As a consequence of this headroom will vary by region. We do not propose to vary headroom over time. We provide more details on our proposals for headroom design in Chapter 3.

**Considering the Act's objective and matters for regard**

1.10. The objective of the Act is to introduce a cap which protects existing and future domestic customers on SVT and default tariffs. In doing so we must have regard to:

- The need to create incentives for holders of supply licences to improve their efficiency;
- The need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts;
- The need to maintain incentives for domestic customers to switch to different domestic supply contracts; and,
- The need to ensure that holders of supply licences who operate efficiently are able to finance activities authorised by the licence.

1.11. We have assessed our proposed cap level against the Act's objective and all of the matters to which we must have regard. In Chapter 4 we set out our findings and rationale for the objective and for each of the matters in turn.

**Our analysis and evidence base**

1.12. Our assessment of the cap's potential impact is based on a range of analysis and consideration of information and evidence, including that which has been submitted as part of earlier consultations. This allows us to appropriately consider suppliers' costs,

model the impact of different cap levels on actual suppliers in 2017, and assess the relationship between fixed tariff and SVT price differentials and switching. Ultimately, the decision on headroom and the level of the cap is one which requires judgement, taking into account the objective of the Act and the matters to which we must have regard. We provide more detail on our analysis and evidence in Chapter 5.

**Stakeholder responses**

1.13. In Chapter 6 we summarise the key points raised by stakeholders during our May consultation.

**Context and related publications**

1.14. Ofgem (2018), Default tariff cap working paper 3 – our thinking on including a headroom allowance https://www.ofgem.gov.uk/publications-and-updates/default-tariff-cap-working-paper-3-our-thinking-including-headroom-allowance

1.15. Ofgem (2018), Default Tariff Cap: Policy Consultation. Appendix 11 – Headroom https://www.ofgem.gov.uk/system/files/docs/2018/05/appendix_11_-_headroom.pdf

# 2. The overall level of the cap

In this chapter we set out our rationale for the overall level of the cap, and the inclusion of an additional "headroom" on top of our cost benchmark. We explain how the level chosen relates to the scenarios we set out in our May consultation.

**Proposed decision**

2.1. We propose an overall level of the cap with allowances for uncertainty and variation in suppliers' efficient costs (for example, because some suppliers have more customers on the priority service register or who operate offline accounts, which is likely to increase costs to serve). This means the cap is higher than if we based it on the lowest cost suppliers in the market ("the frontier").

2.2. We consider these allowances by assessing our efficient cost benchmark and the need for potential "headroom" together. Our proposed approach to the efficient benchmark takes into account most but not all issues of uncertainty and variation in efficient costs. For example the benchmark includes an explicit allowance for wholesale uncertainty and we have set our operating cost benchmark above the frontier to reflect the cost of a less advantageous customer base than the companies at the frontier.

2.3. We define 'the frontier' conservatively. Rather than using the supplier with the lowest operating costs per customer, we take an average of the two lowest costs in our sample. This reduces the risk that our frontier benchmark is distorted by specific aspects of that supplier's customer base or data.

2.4. In addition we are also proposing to include an explicit headroom allowance in the price cap to ensure the cap provides for further uncertainties (an additional £10 in our 2017 baseline). This should ensure the objective of the Act is met and that appropriate weight is given to each of the matters to which we must have regard. Table A2.1 shows, that taken together, we include £36 before VAT in our 2017 benchmark to cover uncertainty and variation in efficient costs.

2.5. We consider that this overall cap level ensures that the market as a whole can provide sufficient incentives for customers to switch to different energy contracts. We do not think there are strong arguments for providing any additional headroom so that suppliers with high costs can offer cheap fixed tariffs by charging SVT customers more, as that would not be consistent with the objective of the Act. In any case, we consider there will be incentives for customers to switch and the ability for many suppliers to compete for customers effectively. A number of suppliers have costs below the efficient cost benchmark, or will not need to utilise the other allowances. These suppliers can help provide active competition and incentives to switch.

**Table A2.1: Components of benchmark and headroom**

| Cost component | Efficient frontier | Additional allowances | Total |
|---|---|---|---|
| Wholesale | 364 | 3 | 367 |
| Policy | 117 | 0 | 117 |
| Networks | 258 | 0 | 258 |
| Operating costs | 146 | 23 | 169 |
| SC costs allocated to all customers | 21 | 0 | 21 |
| EBIT at 1.9% | 17 | 1 | 18 |
| VAT @ 5% | 46 | 1 | 47 |
| **Benchmark** | **968** | **28** | **996** |
| Headroom | 0 | 10 | 10 |
| VAT @ 5% | 0 | 1 | 1 |
| **Total impact on DD customers** | **968** | **39** | **1007** |
| Excluding VAT | 922 | 36 | 959 |

Ofgem analysis, 2018

Notes:
1. The additional allowances only show specific allowances for uncertainty and the difference between frontier and our benchmark costs. Other aspects of our methodology (including conservative assumptions) will reduce the impact of uncertainty, but they are not shown here. For instance, our analysis shows that policy cost forecasts in the three years between 2015 and 2017 tended to be higher than actual costs (see Appendix 5 - Policy and network costs) and our approach for standard credit cost is conservative (see note 2).
2. For standard credit we use the lower quartile to set efficient costs – for Standard Credit customers (not shown here) the uplift is £9 higher than had we used the frontier supplier (taken across all cost categories combined). If we were to take the frontier cost for each additional cost component separately, then the frontier benchmark for both direct debit and standard credit cap be lower.

## What we consulted on

2.6. In our May consultation we discussed whether the overall cap level would need to include a headroom allowance. We suggested two potential reasons why such an allowance might be justified:

1. **Uncertainty and variation in efficient costs**: We set out that "a level of headroom might be desirable to account for uncertainty that has not already been allowed for when estimating the efficient level of costs". Our examples for this mechanism were the intrinsic uncertainty of volatile pass-through costs, and helping with efficient cost variations due to differences in customer bases. These issues to some extent relate to the requirement to give due regard to the financeability of an efficient supplier.

2. **Incentives for customers to switch to different contracts:** We discussed in detail how headroom could affect the amount of competition and switching in the market, in particular that larger price differentials between SVTs and fixed tariffs seemed to incentivise engaged consumers to switch more frequently.

2.7. We presented four illustrative scenarios that provided a range of £0 - £110[5] headroom allowance above an "efficient frontier" benchmark - for modelling purposes, we used the prepayment meter safeguard tariff as of April 2018 as a benchmark, adjusted for payment type (and excluding headroom).

2.8. We stated that our decision on headroom would be taken in the round and alongside the decision on the efficient benchmark.

**Summary of stakeholder views**

2.9. Most stakeholders, but not all, believed the cap should include headroom for the reasons we considered. In particular, stakeholders argued it was needed due to unavoidable uncertainty in setting the benchmark, unexpected shocks to costs, and variation in the efficient costs to serve different customer bases. Most suppliers argued that headroom was required to support competition and switching.

2.10. Some stakeholders commented on the illustrative headroom scenarios included in our May consultation. There was a wide range of views on optimal level of headroom, with some suppliers suggesting that headroom in the order of £70 to £100 was required (based on our analysis using the efficient frontier benchmark from the prepayment safeguard tariff).

2.11. One supplier suggested that we needed to assess uncertainty and switching separately, and proposed there should be separate allowances that are then added together.

2.12. In Chapter 6 of this appendix we provide a fuller summary of stakeholders' views and our responses.

**Our rationale**

*Variation in efficient costs*

2.13. In the benchmark, our allowances for operating costs and additional standard credit costs already take into account how suppliers' costs are affected by the differences in their customer bases. We propose an operating cost allowance that is 15% higher than the level of the lowest cost suppliers in our sample. To calculate the efficient additional costs of standard credit, we use the lower quartile costs of suppliers analysed in our sample.

2.14. We do not consider that additional headroom is required for variation in efficient costs. Our assessment of potential reasons for variation suggests that an efficient supplier with an average customer base would likely have operating costs below the lower quartile. To this extent, we deduct an additional £5 per dual fuel account to sharpen incentives to improve efficiency.

[5] The four illustrative scenarios were based on a range around the CMA's prepayment safeguard tariff headroom level of around £30 for dual fuel accounts. The four headroom scenarios set were 1) zero headroom: £30 less than the prepayment meter cap headroom 2) around 4% (headroom equivalent to the prepayment cap), 3) 10% headroom (£45 above the prepayment cap level), 4) 15% headroom (£80 above the prepayment cap level). These were percentage of cost excluding network cost.

2.15. Some suppliers may have atypical customer bases that are potentially more expensive to serve than the 'typical' customer base. However, other suppliers will have less expensive customer bases than assumed when setting the benchmark. Increasing the cap for a supplier with an atypical customer base risks increasing the ability for all other suppliers, including ones with typical customers, to overcharge.

2.16. For standard credit costs we analysed the extent to which a supplier would be disadvantaged if they had a higher proportion of standard credit customers than average, but efficient costs to serve each standard credit customer. Few suppliers would have higher costs than the benchmark provides for, and the impact is very low (now that we maintain price differentials at the market average, this effect has reduced). We do not consider it to be consistent with the Act to provide headroom for this exposure, as it would increase bills for all customers, reducing protection.

2.17. For operating costs, we have compared the operating costs per direct debit customer for large suppliers with customer bases that might be more expensive than the average, with those that might be less. Within this group of suppliers the composition of their customer base appears to have little relationship to their costs. The suppliers with the 'hardest' and 'easiest' customer base have the two lowest operating costs per customer, and are very similar to each other. We do not consider headroom as necessary to account for variation in efficient costs above our benchmark.

*Uncertainty*

2.18. It is uncertain what future efficient costs will be, and efficient costs will vary between different suppliers. In our benchmark we explicitly include some allowances for uncertain wholesale costs. We have also designed the benchmark in a way to minimise exposure to uncertainty and volatility, and we make conservative assumptions that reduce the risk of uncertainty understating costs.

1. Our wholesale allowance is based on a hypothetical prudent supplier who takes reasonable steps to manage their wholesale risks before delivery. Our shaping and forecast error compares actual outturn data and seasonal normal demand to capture typical variability. We provide an additional 1% of wholesale costs to cover further risk. This is described in Appendix 4 – Wholesale costs.

2. Suppliers were concerned about variability in policy cost forecasts. We have sought to minimise this by using the best available information from administrators in relation to the expected costs of each scheme (see Appendix 5 – Policy and network costs). Our analysis found that between 2015 and 2017 forecasts have tended to overstate suppliers' actual costs, mainly due to Feed-in tariffs and the Energy Company Obligation. We expect that differences between forecasts and outturn costs in any given period will tend to offset each other over the life time of the cap.

3. We benchmark operating costs per account, dividing total operating costs by total accounts (counting dual fuel as two accounts). We do not propose to analyse gas and electricity separately. This avoids the risk that the way suppliers apportion their costs leads us to set the allowance artificially low, but it also means that we will not account for suppliers that are efficient in serving one particular fuel type. We consider this assumption conservative (see Appendix 6 – Operating costs),

4. Uncertainty and variation in suppliers' rollout of smart meters and their installation costs does introduce uncertainty in both directions. There is

reasonable certainty over smart metering costs for the period covered by the first two caps. Costs after October 2019 are subject to more uncertainty, regarding the cost and pace of rollout. We propose to update these assumptions in time for the third cap period to reduce exposure to uncertainty (see Appendix 7 – Smart metering costs).

5. We propose to set the additional efficient costs per standard credit customer by using the lower quartile costs in our samples of the additional work capital, additional bad debt, and additional administrative costs incurred. If we were to use the frontier (ie. the lowest) costs, our proposed estimate would be significantly lower (see Appendix 8 – Payment method uplift).

2.19. We nevertheless propose an additional headroom allowance, to reflect the residual uncertainty that we consider affects the cap. Known sources include:

1. managing volatility in how actual costs are incurred compared to the cap, for instance due to forecast errors, or policy changes;

2. inherent uncertainty in future real world events, for example, extreme unexpected weather events, bad debt costs from a supplier failure, or new policy initiatives; and

3. the intrinsic uncertainty in our modelling, given that efficient costs cannot be directly observed.

*Switching*

2.20. We do not propose to provide additional headroom so that suppliers with higher costs can continue to offer cheap fixed tariffs by charging SVT customers more. We think doing so would be inconsistent with the objective of the Act.

2.21. We consider that not all suppliers require the allowances included in our benchmark. Some suppliers will have lower operating costs, due to their efficiency or customer base, and fewer standard credit customers.

2.22. We expect our proposed cap level to provide incentives to switch, but consider that switching rates are likely to reduce from their current levels. Our proposed cap level will reduce SVT prices, so the difference between fixed tariff prices and SVT prices will reduce, limiting the savings from switching. Also, with fewer suppliers offering cheaper fixed tariffs, customers may be less likely to switch.

# 3. Headroom design considerations

This chapter sets out how we propose headroom will be applied to the default tariff price cap, and the rationale for our proposals.

## How should headroom be applied to the cap?

**Proposed decision**

3.1. We propose to set an explicit headroom allowance as a percentage figure. This would be applied to all elements of costs except the network allowance.

3.2. In order to initially calibrate the cap, we propose to calculate the level of headroom in absolute terms, for a dual fuel direct debit customer with a single rate electricity meter and typical consumption. We will then turn this into a percentage allowance. This means that the absolute value of headroom will vary over time according to movements in the level of the cap due to indexation.

3.3. As we explained in Chapter 2, this headroom is intended to cover uncertainties and potential cost variations, which may not already have been considered (such as wholesale) in the approach we have taken to setting the efficient cost benchmark.

**What we consulted on**

3.4. In the May consultation, we set out our minded-to position to set headroom as a percentage because it enables the headroom proportion to vary with consumption, and the headroom to vary over time with other costs.

3.5. We proposed that headroom should be expressed in percentage terms and applied to all elements of costs except the network allowance, given these costs are known and unlikely to vary in the six-month price control period.

3.6. We also welcomed views on whether we should set headroom as a percentage of only controllable costs, to exclude costs that are uncertain and fluctuate, such as wholesale costs.

3.7. Most stakeholders who responded directly to the questions on the format of headroom agreed with our proposal that headroom should be set as a percentage and apply to all cost components except for network costs. Stakeholders argued it was appropriate that headroom scales with consumption. There was no support for headroom only applying to controllable costs.

**Our rationale**

3.8. We agree with the majority of stakeholders that it is appropriate for headroom to scale with consumption. Also, to the extent that headroom plays a role to capture any uncertainty in costs, then it makes sense for it to increase when costs rise and decrease when costs fall. Our approach to considering uncertainties where possible as

part of the individual elements which make up the efficient benchmark means that any allowance would scale in line with the element to which it relates. Our proposed general headroom allowance would scale in line with all cost components except network costs. We think this approach is reasonable because it avoids an allowance either over-scaling and undermining protection for consumers, or under-scaling and exposing suppliers to potential risks.

3.9. We think it is appropriate to exclude network costs since they are known with a reasonable degree of precision, and are unlikely to vary over a six-month period. Other cost components in the efficient benchmark vary regionally due to differences in electricity losses. We are proposing that headroom is applied to these cost components due to the uncertainty associated with them. As a consequence of this, the absolute value of headroom will vary by region. However, the scale of these variations is very small, we estimate less than 10p between highest and lowest in the baseline for a direct debit dual fuel customer with typical consumption.

## Should the cap headroom level adjust over time?

### Our proposal

3.10. We are proposing headroom will be a fixed percentage. This will be specified in the notice we publish setting out the baseline values, which we have published for consultation alongside this document.

### What we consulted on

3.11. In our May consultation we proposed a fixed level, but considered whether headroom should be a fixed percentage or whether the percentage should adjust over time. Stakeholders had previously argued that it may take time for suppliers to achieve efficiencies in their operations.[6] Others argued that headroom should be reduced as suppliers realise efficiencies, to ensure these savings are passed to consumers through lower prices.

3.12. Some suppliers also argued that because of rules preventing them from changing the terms of existing fixed price contracts, they have limited levers available to them to respond to the introduction of the cap and ensure a continued ability to finance their activities by adjusting their current pricing strategies. They argued that an approach where headroom changed over time would allow a transitional period for them to adjust their pricing portfolios.

3.13. We set out in the May consultation that any transitional period would need to be weighed against the delay and reduction in the overall savings (and by extension protection) to consumers, so it would need to be carefully considered given the cap is temporary in nature.

3.14. We received mixed views from stakeholders on whether headroom should adjust over time. Stakeholders' views were closely related to their views on the overall cap level.

[6] Stakeholders had raised headroom adjusting over time in response to our working paper on headroom. https://www.ofgem.gov.uk/system/files/docs/2018/04/180409_working_paper_3_-_headroom_principlesfinal_1.pdf

**Our rationale**

3.15. We have further considered whether headroom should adjust over time. Our view is that the overall level of the proposed cap meets the objective of the Act, while appropriately taking into account the matters to which we must have regard. As such, we do not consider that an initial transitional period and a mechanism to adjust headroom is necessary.

3.16. Stakeholders had mixed views on the appropriateness of headroom changing over time. Most of the views related to assumptions around where the cap level would be set. We agree with those that supported a fixed level of headroom, given that the rationale for headroom should not change and fluctuating headroom could reduce certainty in the market and affect supplier ability to plan and make investment decisions.

3.17. We considered the suggestions that we could set a higher initial level of headroom and then decrease it until it reaches a target level, to allow time for suppliers to realise efficiencies. However, while this type of "glide path" approach is often used in network price controls, we do not consider it is directly comparable to the retail sector because network companies are asset heavy, and therefore they find it more difficult to reduce costs quickly.

3.18. We recognise that providing a glide path may allow suppliers time to rebalance their portfolios in terms of pricing, and in proposing the cap level we have undertaken analysis on fixed tariffs and the potential financial impacts on suppliers.

3.19. We are proposing that headroom is a fixed percentage given the cap is a temporary measure and do not propose to include a glide path. We consider that it would result in a delay to the level of protection provided to consumers and would not be in line with the objective of the Act. Our view is that the overall level of the proposed cap is appropriate, and an initial transitional period and a mechanism to adjust headroom is not necessary.

3.20. As a temporary cap, there is also the issue of the transition out of the cap as well as into it. We note that there are a number of examples from elsewhere where a gradual loosening of price protection has helped facilitate its removal and provided confidence there is sufficient competition in the market. This approach was taken in New South Wales in Australia, where allowing headroom to increase at the end of the price capped period facilitated a smooth transition to a more competitive market when the cap was removed. This led to increased switching, price differentials, and reduced the number of customers on regulated tariffs.

3.21. We have considered whether we would want to adjust headroom for this reason. At this point in time, we expect that we would most likely not consider any such headroom adjustment before considering our recommendation to the Secretary of State in 2020 on whether to remove the cap. It not necessary to include an adjustment mechanism should we take a decision in the future to adjust the level of headroom to support the transition out of the price cap regime. We are concerned that including such an adjustment mechanism could create regulatory uncertainty and weaken the efficiency incentives of the cap.

# 4. Considering the Act's objective

We have assessed the proposed cap level against the objective in the Act and matters to which we must have regard. In this chapter, we explain our judgement against these requirements.

## The Act

4.1. The Act requires us to exercise our functions with a view to protecting existing and future domestic customers on SVT and default tariffs, which it defines as the objective of the default tariff cap. At the same time, we must have regard to the following matters:

1. Creating incentives for suppliers to improve their efficiency
2. Enabling suppliers to compete effectively for household customers
3. Maintaining incentives for customers to switch to different contracts
4. Ensuring efficient suppliers are able to finance their licenced activities.

4.2. We have used a mixture of quantitative and qualitative evidence and analysis to assess the impact of the overall level of the cap on the above objective and matters.

4.3. Taken together, our proposed level of headroom and efficient benchmark would give customers who currently pay high default prices a substantial level of protection. Based on our analysis, SVT and default tariff customers' bills would have reduced by £1.3bn, had the cap been in place in 2017. This is equivalent to an average of £92 for a dual fuel single rate customer with typical consumption (blended average of direct debit and standard credit customers).

4.4. In providing this protection, we have had regard to each of the matters set out in the Act. We are satisfied that we have given appropriate consideration of the following in setting the proposed methodology and level for the cap:

1. Creating incentives for suppliers to improve their efficiency by reducing their costs
2. Enabling suppliers to compete effectively, by ensuring the market has a variety of suppliers, that will provide scope for different tariffs and service offerings
3. Maintaining incentives for customers to switch to different contracts, by ensuring there are some suppliers that offer cheaper fixed term tariffs
4. Ensuring an efficient supplier can finance their licenced activities, by ensuring a supplier with efficient cost should make a normal rate of return when considered over the life time of the cap.

4.5. In this chapter, we explain our findings and conclusions in these respects.

## Objective: Protect existing and future default tariff customers

4.6. Stakeholders' main views on how the cap affects customer protection were that:

1. the cap should prevent excessive overcharging of current customers
2. protection is a wider concept than savings to current default tariff customers
3. a low cap could affect future customers, by potentially reducing incentives to invest in customer service or innovate.

### Customer savings

4.7. The proposed level of the cap will provide a substantial immediate protection to existing default tariff customers. It is clear from the discussions on the Act when it was being debated, parliament had a clear expectation that the Act should deliver meaningful reductions in the bills of those customers on default tariffs.

4.8. We estimate that at this cap level, dual-fuel single-rate customers with typical consumption would have saved in the order of £92 per annum had the cap been in place in 2017[7]. We estimate that 96% of customers on SVT or default tariffs would have seen bill decreases following implementation of the cap. This would have amounted to a total customer saving of £1.3bn, or 4.6% of industry revenue, using mean consumption figures.

4.9. Some default tariff customers will save more than others – those who currently pay the highest prices will save the most. The range of savings for dual-fuel single-rate customers with typical consumption would have been between £55 and £162 for the six largest suppliers.

4.10. Typical standard credit customers would have saved around £89 per annum had the cap been in place in 2017 (with a range from £44 to £175 for the six largest suppliers). Typical direct debit customers would have saved £94 (with a range from £61 to £157 for the six largest suppliers).

4.11. Single-fuel electricity customers would save £39, whilst single-fuel gas customer would have saved £79. Economy 7 customers would have saved around £102 per annum, for a dual-fuel customer.[8]

[7] On a weighted average basis of payment types (70% direct debit and 30% standard credit)
[8] Assuming 58%/42% split of peak/off-peak consumption

**Customer protection**

4.12. We agree that savings are not the only way to provide protection for SVT customers. We consider customer protection to be related to the extent to which the customers will pay a price that fairly reflects efficient underlying costs. The cap ensures that any changes in the prices customers pay will only be as a result of justified changes in the underlying cost to serve.

4.13. When the cap is introduced, SVTs will be capped relative to underlying costs to the same extent as we analysed in 2017. As such, it will provide the same level of protection. Notwithstanding this, we estimate that, when the cap is introduced, customers' estimated savings are likely to be lower than our analysis suggests they would have been if the cap were introduced in 2017.

4.14. Actual savings realised when the cap is introduced will depend on how suppliers set their SVT prices between now and the cap's introduction. If the ten largest suppliers maintain their SVT prices (as announced up to 31 August 2018), we expect the typical direct debit SVT customer to save an average of £72 in annualised terms, ranging up to £121 for typical customers on the most expensive tariff. The typical standard credit SVT customer would save £80 on average, ranging up to £138 for typical customers on the most expensive tariff.

4.15. The expected 2019 impact is less than in our 2017 analysis. This change is driven by suppliers increasing their prices by less than the recent increases in wholesale costs. Regardless of suppliers' pricing, the cap will protect SVT customers from being overcharged, ensuring their bills reflect costs.

4.16. We have noted the views of some stakeholders that a cap could discourage people from engaging with the market, and increase the proportion of people on SVTs in the long run. As discussed above, we also consider that there will continue to be incentives for engaged customers to switch to cheaper fixed tariffs, even with the proposed cap in place. In any case, the cap is temporary, and we expect that any reduction in engagement during the life of the cap would reverse when the cap is lifted.

**Impact on services**

4.17. Some stakeholders suggested that the cap could harm customers, as suppliers might reduce service quality when they attempt to reduce their operating costs. We expect suppliers to maintain service quality, ensuring they meet their obligations. The supply licence makes clear suppliers' obligations to treat their customers fairly and in particular to devote special attention for those in vulnerable circumstances who may need additional help or services to get good outcomes from the energy market.

4.18. We do not consider the cap level requires suppliers to reduce service quality for customers, and as such does not affect the achievement of the objective defined in the Act. Ofgem will closely monitor the level of service which suppliers deliver to their customers and stands ready to take enforcement action in the event that any licence requirements are not met. Furthermore, we have not seen any evidence to suggest that better customer service is in fact related to higher costs. In some cases, the opposite could be the case, where poor service leads to higher costs as issues are not resolved successfully first time.

## Matter to which we must have regard: the need to create incentives for holders of supply licences to improve their efficiency

4.19. Stakeholders' main views on how the cap affects incentives for efficiency were that:

- suppliers are already incentivised to improve efficiency
- this incentive will be intensified in any default tariff cap scenario, and
- competition remains the best way to incentivise efficiencies.

4.20. We have assessed the impact of a price cap with headroom on supplier incentives to improve efficiency. We consider there are several relevant factors when assessing this matter:

- the incentive for suppliers to become more efficient through cost reductions
- the incentive for suppliers (or potential new entrants) to reduce costs and innovate to compete for new customers
- the incentive for potentially efficient new suppliers to enter the market, or for inefficient existing suppliers to exit the market.

4.21. We consider the most important priority amongst these for the default tariff cap is incentives in efficiency through cost reduction of existing market participants. We are proposing to set the level of the cap to encourage suppliers to improve their efficiency. The cap level is significantly below current default tariff prices for a number of suppliers. It requires a level of operating cost stringency beyond that currently achieved by some (though not all) suppliers. To make a normal return from their default tariff customers, inefficient suppliers will need to become more efficient – this is a powerful incentive.

4.22. Our proposed benchmark sets the operating cost per customer allowance at the lower quartile level, with an additional £5 efficiency factor. We consider this level would sufficiently incentivise suppliers to improve their efficiency, whilst allowing for variations in cost due to differences in suppliers' customer bases that are outside of their control. This additional £5 efficiency factor reflects our conclusion that an efficient level of costs lies beneath that of the lowest cost large supplier. This is in line with the findings of the CMA, from their recent energy market investigation. Even if suppliers were to increase their fixed tariff prices, to recover some of their revenues, there would still be very strong incentives to identify efficiencies and reduce their operating costs per customer. By setting the efficient benchmark close to lower quartile costs, rather than frontier, and by including a headroom allowance, we have given due consideration for inefficient suppliers to meet the efficiency challenge in a sustainable manner.

4.23. We consider, having undertaken a broad range of analysis, that a cap with zero headroom, set at the efficient frontier, would demand infeasible cost reductions from some suppliers, risking a significant level of market exits and a negative impact on customers. Our proposed level protects future customers, by providing incentives for

efficiency without unduly risking a significant number of suppliers exiting the market. Full analysis of the impact of this and other scenarios can be found in the draft impact assessment published alongside this document.

4.24. We have factored into our thinking the views of stakeholders on the role of competition and business owner (e.g. shareholder) investment to drive efficiency. We have also noted the risk identified of suppliers reducing costs in an unsustainable manner. We recognise that some suppliers see risks to customer service to default customers. We have proposed a cap level which will enable efficient companies to provide an appropriate level of customer service that is consistent with their licence requirements and standards of conduct.

## Matter to which we must have regard: The need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts

4.25. Stakeholders' main views on how the cap affects competition were that:

1. competition will be impacted by how fixed tariffs change in response to the cap
2. innovation is a key driver of long-term competition, and
3. a cap could create barriers to innovation.

4.26. We regard effective competition as the best way to improve long-term outcomes for engaged customers. We consider the principal ways effective competition is facilitated is through market participation, long-term innovation, and price dispersion and switching. We discuss the latter two of these aspects within the section on maintaining incentives for customers to switch (below).

**Market participation**

4.27. It is not possible to predict how suppliers will respond to the introduction of the cap. However, we consider the level of the cap we propose allows efficient suppliers to participate actively in the market. The overall cap, as discussed above, provides a degree of flexibility for uncertainty, variation in efficient costs and for switching/competition.

4.28. Some inefficient suppliers may choose to "use" some of the headroom allowance to improve their efficiency without being immediately loss making. This balances the competitive pressure in a well-functioning market in which inefficient suppliers go out of business with the need to protect customers.

4.29. We have given consideration to ensuring suppliers can compete and concluded that at a market level our proposed cap will enable this to take place, and a range of different suppliers will be able to compete effectively for customers. Some small and medium-sized suppliers have costs below those allowed for in the tariff cap. We expect these suppliers to continue to offer competitive tariffs.

4.30. We also note that some suppliers have historically been able to differentiate and compete through non-price factors, such as quality of service, or innovative product

offerings. We believe the introduction of the cap will not change supplier incentives to compete on non-price factors. For non-price factors such as quality of service, we have not seen any evidence to suggest that quality of service relates to higher cost. As such, incentives to differentiate quality of customer service for SVT customers should be maintained. For non-price factors that do incur a material cost, our view is that this type of competition can be maintained in the fixed tariff market. This is consistent with how the market operates today.

4.31. We consider that larger, inefficient suppliers currently operating in the market may face more challenges than before to compete. However, we expect that competition will provide further incentives on efficiency for these suppliers. They also have a range of tools available to them, including realising efficiencies, which they can consider in order to provide competitive tariff offerings.

4.32. We have set the cap at a level which allows an efficient operator to make a reasonable return. Whilst we do not think there is a risk of a large number of suppliers exiting the market, we recognise that some inefficient suppliers may decide to exit the market, rather than reduce costs to the level allowed by the cap. If this were to be the case, suppliers are not able to stop serving customers and leave the market without notice. Ofgem has protections in place for consumers that ensure supplies remains secure and any credit they may have with their supplier is protected. If an inefficient supplier currently in the market today cannot continue operating without overcharging their customers – which the price cap will prevent – then there is no place for them in this market.

4.33. We do not consider that the proposed price cap level will negatively impact potential new entrants looking to offer competitive and innovative products to customers. We acknowledge that a price cap, of any level, has a potentially negative perception effect for potential new investors in the sector. Overall, we expect new entrants to still be incentivised to enter the market, and along with smaller suppliers, to provide competitive pricing. In any case, there is already a significant number of suppliers (more than 70)[9] operating in the market, with the majority of these suppliers with tariffs below the level of the proposed cap. These suppliers are likely to be more efficient, target particular customer groups (e.g. online focused, direct debit that have lower costs to serve), and benefit from policy cost exemptions. We still expect there to be scope for other business models to also be competitive.

**Impact on innovation**

4.34. We do not consider the proposed cap to be a significant barrier to innovation. The price cap will provide temporary protection to those consumers who are not engaging in the market and as a consequence are not seeing the full benefits of competition. Programmes like the roll-out of smart metering, half-hourly settlement, faster and reliable switching, and our future supply market arrangements work should facilitate greater innovation. They mean that increasingly consumers will be able to engage in the market with a broader range of service providers, in different ways, delivering better consumer outcomes.

4.35. We believe that the more evolutionary innovative tariff offerings and business models can be compatible with the price cap. We are keen to engage early with stakeholders if they are considering a new innovative tariff that they are seeking to introduce while

[9] Retail market indicators: https://www.ofgem.gov.uk/data-portal/retail-market-indicators

the price cap is in place. This would allow us to consider how compliance could be assessed and understand any emerging issues early. We understand concerns that the price cap could be a barrier to innovation. Ofgem is assessing a range of issues with the underlying regulatory and market framework that could pose a barrier to more revolutionary types of innovation. Our future supply market arrangements[10] work is now looking to assess and, where appropriate, redesign the retail energy market. As part of this work we will be exploring options that ensure consumers on default arrangements are appropriately protected over the longer term.

4.36. We will continue to work closely with innovative new entrants through the further work we are doing on reform to the future supply market arrangements as well as through our Innovation Link. Our Innovation Link service is available to help innovators to navigate the regulatory framework by offering fast, frank feedback.

## Matter to which we must have regard: the need to maintain incentives for domestic customers to switch to different domestic supply contracts

4.37. Stakeholders' main views on how the cap affects customer protection were that:

1. headroom is required to maintain incentives to switch
2. historical evidence shows a relationship between switching and available savings, and
3. the prepayment meter cap provides an example of how switching could be impacted by a cap.

4.38. Our proposed level of the cap will enable incentives for customers to switch. We expect suppliers with lower operating costs and fewer standard credit customers than assumed in our benchmark to be able to offer cheaper fixed tariffs to encourage customers to switch contracts. Some or all suppliers with operating costs close to or above our benchmark may increase their fixed tariff prices. However, we recognise that this is dependent on a number of factors, including suppliers' pricing strategies and business plans, and on how wholesale prices change over time.

4.39. The main incentive to switch is the price differential between fixed tariffs and SVTs. We consider the incentives provided to customers to switch from the perspective of the market as a whole, not individual suppliers' ability to provide those incentives. We have quantitatively considered six sources of evidence on the relationship between savings and switching, as detailed in the annex of this appendix. This includes sources suggested by stakeholders. We recognise there are limitations to the applicability of some of these sources. As such, we have looked at each of these data sources in the round, to enable us to understand the range of potential outcomes which could occur following the introduction of the price cap. We have not used our analysis to make

[10] In July 2018 we published our response to the call for evidence that sought views on whether the current regulatory arrangements that govern the retail energy market will best serve the needs of future customers, or whether these need to change given the significant technological change already affecting the sector. We consider there is a strong case to explore fundamental reforms to the current supplier hub model and consumer protection framework.

predictions, rather we have used it to help us form judgements when considering this particular matter as set out in the Act.

4.40. We have modelled some hypothetical different scenarios, including how different types of supplier might offer cheaper fixed tariffs, and to what extent. We analysed how much 2017 prices would have fallen if the cap had been introduced that year with the initial 2017 baseline values, without suppliers increasing fixed tariffs. We have also assessed two further hypothetical scenarios for how suppliers might price non-default tariffs:

- all 2017 tariff prices fully converge to the level of the cap
- tariffs change such that the supplier makes the lower of the previous year's profit or normal profit (as set out in Appendix 9 - EBIT).

4.41. These scenarios, including where suppliers do not respond with price changes, provide illustrative indications of how price dispersion and competition for new customers could evolve once the cap is introduced. Our data does not include all smaller suppliers, but does cover the vast majority of customers. We have used these scenarios to inform our judgements about the application of the cap from 2019.

4.42. Our analysis on the hypothetical impact of the cap had it been in place in 2017 showed that, if fixed tariff prices remained constant, some suppliers could have offered fixed tariffs around £150 below the level of the cap. In the scenario, large suppliers could have offered tariffs up to £100 below the level of the cap. However, our analysis suggests several suppliers would have been unable to maintain fixed tariffs at this level, without accepting a significant reduction in their profit levels and, in some instances, accepting making a loss in the short term.

4.43. As such, we think it is plausible to expect some suppliers to raise their fixed tariffs towards the level of the cap. Our analysis also suggests that several suppliers could be able to maintain fixed tariffs at pre-cap levels, relative to underlying costs, and make normal profit or more. In practice, supplier pricing strategies – which are inherently not possible to predict as they are dynamic and change in the light of competitor behaviour – are likely to consider trade-offs between prices, customer volumes and revenues.

4.44. Our scenario analysis also considers the impact of suppliers lowering operating costs per customer to reach the level of the efficient benchmark. This provides an indication of the level of additional pricing or financial flexibility suppliers may be able to achieve in practice. We have considered the types of changes a supplier might have to consider to make such efficiency savings.

4.45. Our bottom-up assessment of efficient costs includes an operating cost allowance based on lower-quartile levels of efficiency with a £5 efficiency factor. We would expect that those suppliers with operating costs per customer below the lower quartile would be able to continue offering tariffs at pre-cap levels, all else being equal, maintaining competition in the market.

4.46. Those suppliers with operating costs below the lower quartile are typically medium and small sized suppliers. Furthermore, small suppliers may incur costs below the benchmark due to policy cost exemptions. They may also have fewer standard credit customers, meaning they do not require all of the payment method uplift on direct debit tariffs. As such, whilst we would expect fixed tariffs available on the market to

remain at pre-cap levels of dispersion (relative to underlying costs), we expect this will primarily be from those medium and small suppliers. Our analysis quantitatively and qualitatively considers the role of consumer brand preference in determining the relationship between available savings and switching rates.

4.47. Our analysis suggests a wide range of possible outcomes. Overall, we think it is plausible that available savings could reduce from around £200 - £300 to £100 - £150, with savings primarily offered by medium and small sized suppliers. This could reduce switching perhaps by as much as 50%, other things being equal. A number of our initiatives such as our faster and reliable switching and our consumer trials work should improve engagement in the market. Our approach to assessing the overall relationship between savings and switching is discussed in the annex to this appendix.

4.48. We recognise that the proposed cap level would significantly reduce the savings available from switching. It is unsurprising that if we reduce the level of overcharging currently present in the market, and the extent to which some suppliers can cross-subsidise between SVT and fixed tariff customers, there will be less to save by switching supplier. However, we do not think there are strong arguments for providing any additional headroom so that suppliers with high costs can offer cheap fixed tariffs by charging SVT customers more, as that would not be consistent with the objective of the Act. It is important to note that consumers will still have substantial incentives to switch and a large number of customers will still be able to save through switching.

4.49. There is considerable uncertainty as to the impact on switching rates. For example, consumers may respond differently to previous or comparable situations. Suppliers and Price Comparison Websites (PCW) may choose to market more or less than currently, and consumers may be deterred from switching if they perceive the default tariff cap as a competitive, government approved price.

4.50. Some suppliers may choose to incentivise switching through competing on non-price factors. As available savings will be lower than those currently available in the market, suppliers may look to non-price innovation to improve their overall offer to existing and new customers.

## Matter to which we must have regard: the need to ensure that holders of supply licences who operate efficiently are able to finance activities authorised by the licence

4.51. Stakeholders' main views on how the cap affects financeability were that:

1. a supplier's cost to serve will be influenced by factors that a supplier may not be able to control

2. there are uncertainties, both within the cap design and in the market, which may not be reflected in an efficient cost benchmark, and

3. headroom should allow for uncertainty and for variations in cost to serve which are outside of a suppliers control.

4.52. In our May consultation we set out our initial views on the considerations relevant to this matter. We are minded to consider this from the perspective of setting the level of

the cap at a level such that a supplier with efficient costs, noting the inherent uncertainty in assessing the efficient cost benchmark, could finance its activities. Our principal measure is the ability of an efficient supplier to make a *long-run* normal rate of return under a default tariff cap environment.[11] In any particular period, a supplier's profitability may vary, for instance, because policy costs are lower than as expected, increasing profits, or higher than expected, creating temporary losses. However, we expect an efficient supplier to make normal returns over the life of the cap. This is provided for in the proposed cap, with an EBIT allowance of 1.9%, which we have based on the CMA's analysis as part of the recent energy market investigation.

4.53. As discussed in the overview document, we do not consider that any one of the operators in the market represents an efficient supplier. We also note the conclusions of the CMA on the inefficiency of the larger suppliers in the market. Our modelling of the impact of the cap shows that (in 2017) most of these suppliers would have needed to reduce their operating costs per customer in order make a normal rate of return. We consider that larger, inefficient suppliers currently operating in the market have a range of tools available to them, including realising efficiencies or changing prices for fixed tariffs which could restore them to a normal level of profitability once the cap has been introduced.

4.54. The section below explains how we have given due consideration to this matter in the Act. Our view is that our efficient cost benchmark ensures that an efficient supplier is financeable. We allow an additional £36[12] (before VAT) above the efficient frontier costs to ensure that:

1. suppliers with more expensive customer bases than the frontier companies can finance their activities; and

2. suppliers can manage volatility and uncertainty in the profile of their costs.

**Variation in efficient costs to serve**

4.55. For the purposes of considering financeability, we have already built into the benchmark an assumption that an efficient supplier has a customer base that is assumed to be £23 per customer more expensive to serve efficiently than the suppliers with frontier levels of operating cost efficiency and a high proportion of their SVT customers paying by standard credit. We note that many efficient or new suppliers will have fewer standard credit customers and less expensive customer bases than our benchmark assumes. Appendix 6 - Operating costs provides more detail on why we think this allowance is sufficient.

4.56. We note that one of the main source of variation in costs between customers is payment type, which is itself correlated with several other potential sources of cost variation. By setting separate caps for payment type, we have largely accounted for this source of variation. In particular, we have set the payment method uplift so that large suppliers with a high proportion of default customers paying with standard credit can recover their costs, even though most suppliers have a lower proportion of default customers on standard credit.

[11] See Appendix 9 - EBIT for details on what we have considered as a normal rate of return.
[12] £26 as part of the efficient benchmark, plus an additional £10 headroom allowance.

4.57. Our analysis of supplier costs suggests that there is not a direct link between overall operating costs and the profile of customers in terms of how expensive they likely are to serve. For example, a supplier with costs close to the lower quartile of operating costs has a customer base that we would expect to be more costly to serve than average (ie it has higher levels of standard credit, offline and Priority Services Register customers than suppliers with higher costs). This suggests that inefficiency in operations is also a factor.

4.58. Whilst some suppliers may have atypically expensive customer bases (in particular standard credit customers), our view is that these suppliers do not hold a significant enough proportion of the SVT market to justify setting the benchmark at their level of expected costs. Doing so would reduce the level of protection for all other SVT customers. We think that would be contrary to the objective of the Act. Instead we think that such variations could be considered in the round as one of the factors justifying the general headroom allowance.

4.59. Some suppliers may provide additional services which customers' value, that go above and beyond the quality of service required by their licence conditions. They may provide these services efficiently, but they could be more costly than the efficient benchmark allows. Our view is that tariffs which are outside of the scope of the default tariff cap can still be priced differently to those within the default tariff cap, allowing suppliers to continue offering such services. These tariffs would be available for those customers who made a choice to move onto these tariffs and pay more for additional services. Furthermore, efficient suppliers with costs close to our estimate of the efficient frontier should still have scope within the cap to spend more to improve service levels above the standard required.

**Uncertainty**

4.60. There is inherent uncertainty in estimating the efficient costs of supplying energy. Unanticipated events within a charging period could lead to efficient costs diverging from any benchmark. In the event the benchmark is lower than actual costs incurred by an efficient supplier for a sustained period of time, then an efficient supplier may not be financeable.

4.61. Given this, we have considered whether an explicit headroom allowance is required to capture the uncertainty affecting our estimate of efficient costs, over and above the allowances for uncertainty which we have included in the benchmark.

4.62. Many of the sources of uncertainty identified by suppliers are captured directly in the efficient cost benchmark:

- Uncertainty in wholesale costs is addressed through how we have constructed the wholesale cost allowance in the efficient benchmark. As discussed in Appendix 4 – Wholesale Cost, we have based the allowance on a hypothetical prudent supplier who takes reasonable steps to manage their wholesale risks before delivery. We have included wholesale allowances that take into account the expected cost of shaping (and adjusting for changes in forecast demand) transactions, and imbalance charges. These allowances use a combination of historical and industry standard data, so we believe they capture typical wholesale market variability.

- We have also included an additional 1% of direct fuel cost in the efficient benchmark to help suppliers manage the uncertainty around basis risk and

unmodelled volatility in demand. These are risks that all suppliers will face and are specific to wholesale, so we include an allowance in the benchmark.

- While our allowance for policy costs will rely on forecasts of scheme costs, and so will be subject to some uncertainty, we have sought to minimise this by using the best available information in relation to the expected costs of each scheme (see Appendix 5 – Policy and network costs). We have found that while there have been material differences between expected and outturn costs for some schemes in the past, these over- and under-estimates have tended to offset each other to some extent in the past. There are also reasons to expect this variability to reduce going forwards.[13]

- Uncertainty in network charges principally affects BSUoS charges, as transmission and distribution network charges are known in advance with a high degree of certainty (mid-period adjustments being very rare). To avoid undue uncertainty, we have designed the cap to pass through actual BSUoS charges with a lag of one year. We note there is residual uncertainty in the event of changes in BSUoS charges between settlement runs, although we have not found a systematic pattern in costs at the first settlement run compared to costs at the final settlement run (see Appendix 5 - Policy and network costs).

- In relation to operating costs, as described above, we have set the level of the benchmark significantly above the costs of the lowest cost suppliers in our sample. This partly reflects the uncertainty we face as to what is an efficient level of these costs.

- Uncertainty in smart costs is addressed primarily through the smart cost increment, which we are proposing to review in 2019. This review should enable any material changes in efficient costs or changes to roll-out, driven by policy decisions or other factors, to be identified and included in the allowance as appropriate. This should also allow for any additional information that becomes available over time to be factored into modelling assumptions. In addition, the smart increment is based on average costs – to allow for variations in efficient cost and to provide additional allowance for uncertainty.

- One source of uncertainty the smart increment (and review mechanism) does not fully address is differences between draft and final DCC charging statements in price control determinations, and unscheduled additional pass-through charges. The increment will be based on draft determinations for the first cap of any year (April to September), being replaced by the final determination in the second cap period of the year (October to March). In two of the three years to date, the draft charging statement has been above the final charging statement. In this case, the smart increment will permit over-recovery. In the one year the draft statement was below the final statement, the difference is equivalent to £0.01 per customer per annum. The most recent unscheduled pass-through charge to date was a one-off £1.2m charge across the entire industry, for the introduction of the dual band communications hub. We consider the risks associated with this uncertainty are very low.

[13] This is because of the proposed closure of the FiTs scheme (making generation and therefore costs more predictable); as the CfD program becomes more established; and as a new ECO obligation period begins (reducing the effect due to differences in the profile of suppliers' ECO expenditure over time).

4.63. The process we propose to use to update the level of the cap (as described in Appendix 3 – Updating the cap methodology) will also minimise the scope for the cap to systematically over- or under-state the true level of efficient costs:

- First, because our proposed regular six-monthly updates to the cap will allow trends in costs – whether anticipated or otherwise - to be passed through to the cap quickly. We note that suppliers already take on risk when setting their prices, and that default tariffs have rarely been changed more than twice in a year in the period since liberalisation (while suppliers commonly offer fixed price tariffs with a duration of one year or more). This gives us confidence that a twice-annual review of the level of the cap should in general be sufficient to avoid undue risk for suppliers.

- Second, in the unlikely event that the cap was to materially depart from the intended level, we have flexibility to review the design to correct for this. Specifically, we would be able to amend the update process to reflect any systematic limitations of the design using the licence modification powers under the Act. We also propose to include a provision within the licence condition to allow us to, subject to consultation, make more urgent changes to the models used to update the wholesale, policy, networks and smart metering components of the cap.

4.64. We are nevertheless minded to include a headroom allowance, to reflect the residual uncertainty that we consider affects the cap. However, given the way the benchmark has been constructed, and the process we propose to use to update it, we consider that there is only a requirement for a small allowance. Known sources of residual uncertainty include:

- Some suppliers may face additional wholesale uncertainty, resulting from weather patterns, commodity shocks, error in forecasts of expected customer numbers, or uncertainty around volatile unidentified gas costs.

- Last Resort Supply Payments are managed through network charges, and so would be included in the efficient cost allowance through the network allowance. However, to the extent that a failed supplier has bad debts (which exceeded credit requirements that are set out in industry codes), these may be spread across the industry through a variety of mechanisms and would not necessarily be included in the efficient benchmark allowance. The credit arrangements set out in industry codes are designed to reduce the risks of these costs being passed onto other industry parties. Whilst it is not possible to estimate the cost, frequency or likelihood of such events, we note that in some circumstances some proportion of the headroom allowance may need to be used to cover such costs in the event they materialise.

- Unexpected trends in demand or wholesale prices could cause our forecasts of policy costs to turn out to be too high or too low.

- Unexpected trends in demand could also affect the network charges that companies incur, as a result of demand patterns departing from those assumed in our models.

- We recognise that there are a number of factors which could increase or decrease suppliers' operating costs, such as the introduction of half-hourly settlement and the faster switching programme.

4.65. To ensure that efficient suppliers are able to finance their activities in light of these, and other unforeseen uncertainties affecting the efficient benchmark, we propose to include an additional headroom allowance equal to £10 for a dual fuel customer in 2017/18. This is a material allowance – equating to approximately half of the proposed EBIT allowance under the cap.

4.66. This allowance is not intended to take account of all possible risks of a divergence in costs above the levels identified in the cap. Such an approach would lead to an unfeasibly high cap that would not reflect how suppliers manage risks, and would not provide the level of protection to customers for Ofgem to meet the objective of the Act.

4.67. The allowance provides further reassurance that we have appropriately taken account of the financeability matter in the Act and that efficient suppliers with unusually large numbers of expensive-to-serve customer types are able to finance their activities under the cap; for example, suppliers with particularly large proportions of standard credit customers.

# 5. Our analytical approach

We have assessed the potential impact of our proposed cap on the objective of the Act and matters to which we must have regard. This chapter sets out our approach to this analysis and our evidence base. We describe our scenario analysis, and how customers may respond to different levels of savings.

## Overview

5.1. In deciding on the level of the cap we have assessed its impact on the objective and matters to which we must have regard as set out in the Act. We have used a mixture of quantitative and qualitative evidence and analysis to perform this assessment.

5.2. The overall cap level has direct and indirect impacts on both consumers and suppliers, which we have analysed. Directly, the default tariff cap reduces bills for consumers in the scope of the cap and correspondingly reduces revenues for suppliers. We have analysed this using two methods:

- 'bottom-up' assessment of efficient costs
- 'top-down' scenario based analysis to consider possible impacts of different cap levels on a combination of large, medium, and small suppliers in 2017.

5.3. This analysis has also supported our view on the indirect impacts of the cap. We have developed the 'top-down' analysis to model hypothetical scenarios on how suppliers and consumers could respond to the cap.

5.4. We recognise that there is uncertainty in how suppliers and consumers will respond, and so have considered a range of possible outcomes and additional sources of evidence in our analysis which have informed our decision making. The models we have used are subject to simplification and assumptions, as with all models. As such, neither analysis has been used to definitively calibrate the level at which we should set the cap. We understand the strengths and weaknesses of the respective analyses; when taken together, they provide a robust and consistent indication of the cap's likely impact.

5.5. In this chapter we first explain the information sources we considered, and how we conducted our analysis. This is supported by further detail in the annex of this appendix.

## 'Top-down' analysis of the impact of different cap levels

5.6. In our May consultation (specifically Appendix 11) we outlined our preferred approach to analysing protection. This built on the approach we initially set out in our working paper on headroom.

5.7. We have analysed the impact of the overall cap level on protection for existing default customers. Quantitatively, we have focused on the impact of different cap levels on typical customer bills, and on particular groups of customers.

5.8. To calculate and test potential impacts in a consistent manner, we analysed the impact of the cap as if it had been introduced in 2017, using 2017 baseline values for the cap. We used customer numbers and tariff data to understand how the cap would directly impact each specific customer type, varying by supplier, meter type, payment method, and whether the customer uses paperless billing.

5.9. We used mean customer consumption data to understand the aggregate revenue impact on suppliers. We applied this revenue adjustment to 2017 financial data to understand the potential EBIT of a supplier, had the cap been introduced in 2017.

5.10. We considered how suppliers may choose to change their fixed tariff pricing in response to the cap, using three hypothetical scenarios:

A. Suppliers comply with the cap and do not make any other pricing or cost adjustments.

B. Suppliers fully converge all fixed tariffs to the level of the cap, and fully converge all standard variable tariffs below the cap to the level of the cap.

C. Suppliers raise or reduce all fixed tariffs such that their domestic retail profitability returns to the lower of the previous year's profitability or a normal rate of return.

5.11. For each scenario, we have estimated the following outputs for each supplier, for a given level of the cap:

- difference between the cap level and fixed prices offered
- total and per customer change in revenue from the cap
- change in 2017 EBIT

5.12. We have qualitatively considered the plausibility of these scenarios happening in practice, both at a supplier and a market level, although we do not make predictions of any scenario happening in practice, given it depends on a range of exogenous factors. Where we had the available data, we also considered the impact of the company reducing operating costs per customer to the level of our efficient cost benchmark.

5.13. We explain the technical details of this analysis in the annex of this appendix.

## 'Bottom-up' assessment of efficient costs

5.14. The methodology for our efficient benchmark is based on a bottom-up assessment of costs. For wholesale, network, and policy costs we use external data (eg relating to wholesale prices or network charges) that suppliers do not control. For operating costs, we analyse operating costs per direct debit customer for a sample of ten suppliers, based on historic costs in 2017. To account for variations in customer bases driving different operating costs per customer, we set the allowance for an efficient typical supplier above the level of the lowest cost suppliers in the sample – using as our benchmark the costs of the supplier closest to the lower quartile, minus an amount equivalent to £5 for a dual fuel customer as an efficiency factor.

5.15. Our 'bottom-up' analysis allows us to consider scenarios where we would expect a hypothetical supplier to be financeable, after controlling for various elements of cost and revenue.

5.16. The profitability of a supplier under the default tariff cap will be influenced by a number of factors, in particular by their operating costs, wholesale, policy and smart costs and customer base. We can also consider how a supplier could respond to the cap, such as whether they fully utilise the headroom allowance and how they price their fixed tariffs.

5.17. We can control for these factors in this analysis, to allow us to analyse at what level of cap this hypothetical supplier could make normal returns. We use these scenarios to compare against the 'top down' analysis of actual suppliers, and help interpret the results.

## Comparing the bottom-up and top-down analysis

5.18. The top-down and bottom-up models provide two independent analyses to help us understand how different levels of the cap fulfil the objective of the Act, and enable us to consider the matters to which we must have regard. To an extent, both approaches are sensitive to changes in assumptions, and rely on some judgement. As such, our overall approach to setting the level of the cap is primarily based on our efficient benchmark, and is informed by both sets of analysis, as well as other supporting evidence and qualitative considerations.

5.19. We recognise that there are limitations to our top-down analysis. The scenarios are stylistic, designed to show potential extreme reactions to the cap. In practice, the market will see a mixture of these strategies in place, and suppliers will respond to how other suppliers behave in the market. That is why we have not used it as the predictor of any one outcome. Furthermore, the analysis looks at the impact of the cap in 2017 terms, without directly considering changes to the market that will have taken place prior to the introduction of the cap in 2019, including for example supplier efficiency programmes announced during this period. It does not consider how suppliers would behave in the long-term to maintain financeability over the duration of the cap. Furthermore, it does not reflect changes to customer churn that could occur due to changes in pricing strategy. These limitations, amongst others, have been considered when assessing the results of this analysis.

5.20. However, our top-down approach to analysis has many benefits. It uses actual prices and financial information to present some possible scenarios for how suppliers could have been directly and indirectly impacted had the cap been in place in 2017. When we qualitatively assess potential supplier responses for plausibility, it allows us to understand the range of potential outcomes suppliers and customers may experience in practice.

5.21. There are also some limitations to our bottom-up assessment. For example, it considers a hypothetical efficiency level, and requires a qualitative judgement of if or how suppliers could achieve this in practice. Furthermore, it provides less indication of how suppliers would be impacted by a cap in practice, and what impact this could have on customers.

5.22. It also has many advantages. Primarily, it allows us to analyse each element of cost in isolation. It allows us to make transparent, independent judgements about what costs would need to be incurred by a supplier in order for it to be profitable under a given

level of the cap. It enables a clearer view of uncertainty and plausibility of under-/over-performance against the scenarios. This informs our understanding of where we may want to include a specific allowance for uncertainty in the cap.

## Supporting evidence and analysis

5.23. Our top-down and bottom-up analyses are important sources of evidence used to inform what level of headroom would best allow us to meet the objectives the Act, and the matters to which we must have regard. We have also considered a number of other evidence bases to support our judgements and interpretations of this analysis.

5.24. We have considered qualitatively the impacts of the prepayment meter cap, and the impact of a price cap on switching in Australia and Spain. We have also considered qualitatively academic work, such as Waddams Price and Zhu (2013) on the impacts of the non-discrimination reforms in Great Britain. We have also considered qualitatively the econometric work we undertook as part of the 2008 Energy Supply probe.[14]

5.25. In addition, we have considered a number of quantitative sources to inform our understanding the relationship between switching and the overall level of the cap. In our May consultation we proposed to consider:

- information from our "Cheapest Market Offer Letter" trial
- data provided confidentially by a PCW
- historic Great Britain market data on switching and prices
- stated preference survey data.

5.26. We have subsequently obtained access to two further datasets:

- our recent Collective Switch trial[15]
- our recent consumer survey, which included a conjoint analysis of consumer preferences (including on prices).[16]

5.27. We have adopted an approach similar to that suggested by a supplier in response to our May consultation – for each quantitative source we have estimated the relationship between savings and switching. We have then used each source to give a separate estimate of the impacts of a given change in savings available. These estimates then provided a range of impacts. We believe this approach is more robust than combining the results from a number of different, potentially very different, data sources into a single relationship.

[14] The Energy Supply Probe was an investigation into the electricity and gas supply markets for households and small businesses. https://www.ofgem.gov.uk/gas/retail-market/market-review-and-reform/retail-market-review/energy-supply-probe
[15] The results from our collective switch trial are available from the following link: https://www.ofgem.gov.uk/publications-and-updates/overview-our-collective-switch-trial-february-2018
[16] A conjoint analysis is a method of revealing consumers' preferences. This analysis helps us to understand the importance of different tariff attributes in driving potential switching behaviour and more detail is provided in the annex of this appendix.

5.28. Each of the data sets we looked at showed a correlation between available savings and switching rates. The data from a PCW and from one of the trials show the strongest (most positive) relationship between savings and switching. The GB historical market data shows the weakest, although still a positive relationship. The annex provides further details of our approach to analysing switching.

5.29. We have quantitatively and qualitatively considered the impact of brand preference. Where possible, our analysis produces distinct relationships between switching rates and price dispersion for large, medium and small suppliers respectively. This allows us to analyse the potential impact on switching if available fixed tariffs in the market stayed at pre-cap levels, but fixed tariffs available from a specific market segment converged to the level of the cap.

5.30. We have utilised a recently completed Ofgem survey, which includes a conjoint analysis. This has provided insights into customer preferences over both price and quality of service and how this may affect the switching decision. A summary of relevant findings are discussed below in the annex of this appendix. We have also sought consumer views on the introduction of the price cap and how a cap might affect their switching behaviour using deliberative research techniques through our consumer panel.

5.31. We have also qualitatively considered whether changes in switching rates could reduce incentives for suppliers to innovate or improve services for current and future customers. We have considered the potential indirect impact on future default tariff customers resulting from cost efficiency pressures, such as through changes in service quality.

# 6. Consultation responses

This chapter provides a summary of the stakeholders' responses to our May consultation and our views.

## Overview

6.1. We have reviewed all the responses received in response to the May consultation and below provide a summary of stakeholder views by key themes. We also provide our response to the issues that were raised.

## Including an allowance for headroom

6.2. Most stakeholders acknowledged there is unavoidable uncertainty in the setting of an efficient benchmark and there is the potential for unexpected events that result in costs temporarily diverging from our indices.

6.3. The majority of suppliers who commented on headroom, argued in favour of including an allowance for headroom. They made two main arguments. A principal argument made by suppliers is that there is inherent uncertainty in setting the efficient benchmark and inherent uncertainty in future real world events. Suppliers discussed several potential sources of uncertainty, which they identified as requiring an allowance. They argued that not including an allowance would create a risk of actual costs being above those allowed for in the cap.

6.4. The second main argument is that headroom is required to support competition and switching. Suppliers presented evidence (discussed further in Chapter 5) that particular levels of saving are required to persuade customers to switch supplier, and argued that such levels of saving are only possible with a headroom allowance. Other additional purposes for headroom put forward were to address various sources of uncertainty and provide flexibility for funding for certain supplier activities.

6.5. One supplier argued that the matters to which we must have regard relating to switching and competition "impose a duty on Ofgem to provide 'competitive' headroom", and that without headroom the main driver of competition and switching would be small supplier policy cost exemptions. They argued that an efficient supplier which is fully obligated and in a steady state would otherwise not be able to compete effectively. The supplier further argued that the two main purposes of headroom, competition and cost uncertainty, must be assessed independently.

6.6. Some respondents argued against including a headroom allowance, on the basis that the efficient benchmark is sufficient for efficient suppliers to recover their efficient costs, and to provide sufficient incentives to encourage switching. A headroom allowance increases the cap, reducing immediate savings, and therefore reducing protection, for current default customers. One stakeholder argued that headroom will not promote competition, and that savings of several hundred pounds should still be available from switching to smaller suppliers, even without headroom. Another suggested the inclusion of an allowance but this should reduce over time.

**Our view**

6.7. As we have explained in Chapter 2, the cap level we have proposed allows for uncertain costs and variation in efficient costs between suppliers. We also believe it ensures that there is sufficient competition in the market as whole and that there are incentives for customers to switch. We have designed the efficient cost benchmark in such a way that many of these issues that stakeholders raised are largely captured in the efficient cost benchmark, as described in Chapter 4.

6.8. We agree with the vast majority of respondents that there is genuine uncertainty in the setting of the efficient benchmark and in the potential for unexpected events that diverge costs from our indices at least temporarily. The efficient benchmark includes allowances for some uncertainties. However, we are also minded to include an additional allowance for headroom to further support these aims, as described in Chapter 4.

6.9. Whilst we agree with the supplier who raised the point that the arguments for headroom for uncertainty and for switching and competition should be separately assessed, we do not agree with the conclusion reached by the supplier that they should necessarily be summed to calculate an overall headroom allowance. Setting separate additional allowances for uncertainty and for switching and competition would systematically allow some companies to over-recover their costs, and would not meet our objective to protect default tariff customers. This is because not all companies have more expensive customer bases, or high proportion of standard credit customers. For some suppliers their operating costs will be substantially below the benchmark. These suppliers can utilise the headroom to offer additional savings to existing and new consumers on default or fixed tariffs. Suppliers with higher operating cost do not also require a 'switching' allowance, as the incentive for consumers to switch can be provided by other suppliers without raising SVT prices for the market as a whole, as described in Chapter 5.

## The level of headroom

6.10. Some stakeholders commented on the illustrative headroom scenarios we included in the May consultation. Of the stakeholders who favoured a non-zero amount of headroom, there was a wide range of views on the optimal level.

6.11. Some stakeholders suggested headroom in the order of £70 - £100 was needed, based on our analysis using the safeguard tariff adjusted efficient cost benchmark (the efficient frontier). A supplier suggested that headroom sufficient to lead to tariffs at least £150 beneath the cap was necessary, although did not specify the level of headroom they believe is necessary to achieve these savings. One supplier suggested headroom to enable price dispersions of at least £250 per annum would be necessary.

6.12. One stakeholder argued that our May consultation did not place sufficient weight on maintaining incentives to switch. Several stakeholders argued that maintaining incentives to switch requires providing headroom such that the market delivers savings to customers.

**Our view**

6.13. As set out in Chapter 2, we believe the proposed level of cap meets the objective and we have given appropriate weighting to the matters to which we must have regard in the Act.

6.14. This level of the cap provides immediate bill savings for the typical default tariff customer. It also provides strong incentives for suppliers to reduce costs to become more efficient. Efficient suppliers should be able to finance their licensed activities – the combination of the efficient benchmark and headroom allowance chosen provide scope for variation in customer bases and for uncertainty. This level of the cap provides for a range of different types of suppliers to compete effectively, and to offer incentives for customers to switch.

6.15. We do not think that under the Act framework there is a strong argument for headroom to enable suppliers with higher operating costs to subsidise cheap fixed tariffs and continue competing by charging SVT customers more.

## How headroom should be applied to the cap

6.16. Nearly all stakeholders which responded directly to the questions on the format of headroom agreed with our proposal that headroom should be set as a percentage and apply to all cost components except for network costs.

6.17. Most argued it is appropriate that headroom scales with consumption and were concerned that if it was set in absolute terms, low consumption customers would be worse off. Some stakeholders additionally commented that it is appropriate that headroom scales in line with the movement in the indexed costs, and setting it as a percentage of costs rather than an absolute number would better reflect the variations in the underlying cost components.

6.18. One stakeholder stated headroom would best be allocated on a percentage basis but across all cost components, including network costs. Another stakeholder argued there was no economic rationale to apply a percentage headroom to a metric that systematically varies by region. They argued that if the percentage was applied to a cost base that included network costs, this would amplify the regional differences between consumers, introducing an unjustified discrimination among end consumers.

6.19. One stakeholder agreed that headroom should apply to all costs apart from network costs but recommended an uncertainty element to network costs to recover Supplier of Last Resort Payments. However, they recognised if we do not intend to open network costs once finalised then it would be appropriate to exclude network costs from headroom.

6.20. There was no support for headroom only applying to controllable costs. One stakeholder argued that in the absence of further evidence, and to avoid over-complication, assessed at a licensee level. Another stated they did not agree headroom should only be applied to controllable costs, as this would exclude wholesale costs and the risk management of volatile wholesale prices requires a headroom percentage.

**Our view**

6.21. We agree with stakeholders that it is appropriate for headroom to scale with consumption. Also, to the extent that headroom plays a role to capture any uncertainty in costs, then it makes sense for it to increase when costs rise and decrease when costs fall. As we set out in Chapter 3 we propose to address these issues with a percentage approach to headroom.

6.22. We think it is appropriate to exclude network costs since they are known with a reasonable degree of precision. As explained in Chapter 3 we have decided that it is appropriate that headroom applies to costs that vary with region due to the uncertainty associated with them, for example electricity losses.

6.23. We recognise there may be administrative inefficiencies of a one-off adjustment to charges for networks and inconsistencies between network licence obligations regarding Last Resort Supply Payment (LRSP) claims and broader network price control and charging regulatory obligations.[17] However, based on experience to date, we consider the size of any LRSPs are likely to be small. In any case, we are undertaking a review of both the supply and network licence conditions in relation to LRSP claims, in particular in relation to the timings and process for how claims are to be made and treated and plan to publish proposals shortly. This review we anticipate should adequately address the concerns raised concerning uncertainty in network costs caused by LRSP resulting in charges to change at short notice.

## Should headroom adjust over time?

6.24. We received mixed views from stakeholders on whether headroom should adjust over time. Stakeholders' views were closely related to their views on the expected cap level. Four suppliers preferred a fixed level of headroom, arguing that the rationale for headroom should not change over time, so headroom needs to be sufficient to cover risks of uncertainty as well as providing sufficient price dispersion for the duration of the cap. One supplier commented that if the cap is set at a reasonable level there is little value in the cap adjusting over time, and that fluctuating headroom could reduce certainty in the market and the ability of suppliers to plan and make investment decisions. A few stakeholders disagreed with headroom being used to drive efficiency, arguing that suppliers already have incentives to improve efficiency, and that competition is what drives efficiency.

6.25. Five stakeholders supported a downward glide path where headroom decreases over time. One stakeholder supported a similar approach to the network price controls where efficiency savings are sculpted over time to ensure suppliers are financeable and able to rebalance their portfolios. Three suppliers shared the view that a higher level of headroom could be lowered over time, further increasing consumer protection, once market conditions and impacts were clearer. Another stakeholder stated it might be appropriate to remove headroom if suppliers were only using it as an additional profit

[17] A supplier appointed as a Supplier of Last Resort (SoLR) can claim for a Last Resort Supply Payment (LRSP) from relevant distribution networks, for additional costs they incur when acting as a SoLR, if we give our consent to the amount claimed. In January 2018 we consented to Co-operative Energy Limited making a claim for a LRSP. This amount was recovered from network charges in 2018/19 and we considered it appropriate that the networks recover the costs of LRSP made to CEL through charges from April 2018. This resulted in distribution use of system charges being changed at short notice

margin provided there is clear criteria. They also thought headroom should be set as a sliding scale, decreasing over time to encourage greater efficiency.

6.26. Two stakeholders argued for increasing headroom over time, one stating it could be used in response to any decline in switching and the other referencing the example in New South Wales that took this approach. Two stakeholders were supportive of headroom being kept under review, to allow us to observe the competitive dynamics of the market and ensure the uncertainty within the market is kept under review. The headroom level could then be adjusted upwards or downwards as necessary to reflect uncertainty.

**Our view**

6.27. As explained in Chapter 3, we agree with those that supported a fixed level of headroom. Our view is that the overall level of the proposed cap meets the objective and we have given appropriate weighting to the matters to which we must have regard in the Act. Having done this, we do not think an initial transitional period and a mechanism to adjust headroom is not necessary.

6.28. We do not believe the approach taken in network price controls is directly comparable to the retail sector because network companies are asset heavy, and therefore cost reduction could be more difficult to achieve quickly. In setting the level of the overall cap we have considered the impacts on the fixed market and also suppliers' ability to finance themselves and believe a transitional period is not necessary.

## Objective: protecting existing and future default tariff customers

6.29. There were relatively few explicit comments on our methodology for assessing protection. One supplier suggested that analysing current customer bill savings is not a test that should be applied when designing the cap. Other stakeholders, where they provided comment, agreed that current customer bill savings is a suitable measure for analysing protection.

6.30. Several stakeholders made the point that protection is a wider concept than savings to current default tariff customers. These comments focused on considering the impacts on future customers of potentially reduced incentives to invest. One supplier suggested that, if prices are too low, suppliers will be unable to invest in improving systems and processes, and potentially could go out of business - causing disruption for customers. One supplier suggested we quantitatively establish the relationship between different levels of customer service and willingness to pay.

6.31. One stakeholder commented (in the context of switching) that customers could perceive that the cap offers protection, and so this would act as a disincentive to engage with the market, which would potentially lead to more future default customers in the long term.

**Our response**

6.32. We believe the proposed level of cap meets the objective and we have given appropriate weighting to the matters to which we must have regard in the Act.

6.33. With regard to the suggestion that we undertake a "willingness to pay" analysis to understand customers' preferences on quality of service, we are not minded to pursue this approach. Suppliers remain able to offer fixed, non-default tariffs, at a higher price point for additional qualities or higher level of customer service, and consumers can choose to select these products. It is not clear why default customers should pay a premium for a service they may or may not require. We will continue to enforce the standards required by the licence with regard to ensuring that reasonable and effective customer service is provided.

6.34. In setting the overall level of the cap and assessing how this impacts customer protection we have taken service quality into account. We have also considered the disruption suppliers exiting the market would have on consumers. Chapters 4 and 5 set out in more detail our approach and evidence.

## Matter to which we must have regard: the need to create incentives for holders of supply licences to improve their efficiency

6.35. Relatively few stakeholders commented upon our considerations for the efficiency matter to which we must have regard. One supplier argued that suppliers already are incentivised to improve efficiency, driven by the need to maintain investment in the company. They argue this incentive will be intensified in any default tariff cap scenario.

6.36. Two suppliers argued that competition is the best way to incentivise efficiencies. One supplier argued that a 'too low' cap could incentivise suppliers to reduce customer service levels, reduce innovation and avoid competing for SVT customers.

6.37. One supplier argued that suppliers can only invest in efficiency if they make sufficient profit. One stakeholder argued that we are placing more emphasis on supplier incentives to improve efficiency than other matters to which we must have regard.

**Our response**

6.38. We believe the proposed level of cap meets the objective and we have given appropriate weighting to the matters to which we must have regard in the Act, including the financeability of an efficient supplier. If an investment in a business to improve efficiency produces a suitable return on investment (which remains the case with or without a price cap) then this investment should still be financeable. We do not agree that suppliers necessarily require short-term profit to invest in efficiency improvements. More detail is set out in Chapter 4.

## Matter to which we must have regard: the need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts

6.39. Several stakeholders requested further detail of our approach to modelling how prices may respond to the cap. They suggested we should consider fixed prices rising, as well as default tariffs complying with the cap.

6.40. One stakeholder submitted a report on the potential impacts of the cap on innovation, a key driver of long-term competition. They highlighted a number of risks of a cap (regardless of the exact level at which it is set) having a negative impact on innovation. The report recommended we should communicate the transitory nature of the price cap and encourage increased consumer engagement. One stakeholder suggested that there is a risk that the cap acts as a barrier to disruptors entering the market and trialling new products and approaches.

**Our response**

6.41. We believe the proposed level of cap meets the objective and we have given appropriate weighting to the matters to which we must have regard in the Act, including the ability of suppliers to compete effectively for customers. As we have explained in Chapter 5 we have undertaken analysis of fixed tariff price increases and this has informed our decision on the level of the cap. We conclude that the level of the cap should enable effective competition between a range of suppliers and tariffs.

6.42. We have given consideration to ensuring suppliers can compete and concluded that at a market level our proposed cap will enable this to take place. Some small and medium-sized suppliers have costs below those allowed for in the tariff cap. We expect these suppliers to continue to offer competitive tariffs. We consider that larger, inefficient suppliers currently operating in the market may face more challenges than before to compete. We do not think it would consistent with the Act's objective to set a higher cap level for the purpose of enabling every supplier – even those who may be relatively inefficient – to compete. We expect that competition will provide further incentives on efficiency for these suppliers. They also have a range of tools available to them, including realising efficiencies, which they can consider in order to provide competitive tariff offerings.

6.43. We explained in Chapter 2 that we have also taken into consideration the impact on innovation, and are keen to engage with innovators that are considering entering the market while the cap is in place. Our Innovation Link should facilitate greater innovation and increasingly mean consumers can engage in the market in different ways, delivering better consumer outcomes. Our supplier hub work is now looking to assess and, where appropriate, redesign the retail energy market.

## Matter to which we must have regard: the need to maintain incentives for domestic customers to switch to different domestic supply contracts

6.44. The vast majority of stakeholders who commented, argued that headroom is necessary to encourage switching. Several discussed sources of evidence, though no further quantitative examples were given beyond those cited in our May consultation or raised by respondents in their responses to our working paper on headroom.

6.45. Several stakeholders provided evidence that switching had declined in the prepayment meter market since the introduction of the cap, producing graphical evidence demonstrating a decline.

6.46. Several stakeholders discussed the results of surveys, including those produced by the CMA and Ofgem in recent years, as discussed in our May consultation. One supplier discussed the results of a report commissioned by the supplier, originally for the CMA

energy market investigation, which builds on survey results to show a particularly strong relationship between switching and savings.

6.47. One supplier argued that the lower two of our headroom scenarios in the May consultation would not be consistent with our need to have regard to maintaining switching incentives. Another stakeholder argued our scenarios underestimated the impact on switching, and presented alternative estimates based on their own data that are around 10% higher than the upper end of our range in two of the four scenarios.

6.48. Two stakeholders referred to the analysis published in 2018 by Citizens Advice in response to our headroom working paper, to argue that savings available are not a driver of switching. One supplier discussed in depth the evidence from surveys, historical GB market data, and from the Cheapest Market Offer Letter trial. They used this to construct a relationship between savings and switching, suggesting a rapid decline in switching at around £250 savings available. Other suppliers, relying on surveys, suggested savings of £75 or more could be needed to encourage switching. One consumer group argued that we should establish a baseline of consumer behaviours before the price cap, in order to then measure the impact of the cap.

6.49. Some suppliers noted that headroom is not the same as price dispersion and that some suppliers may offer discounts that are greater than the amount of headroom. Others argued headroom should be sufficient on its own to provide incentives to switch. One consumer group argued that we should establish a baseline of consumer behaviours before the price cap, in order to then measure the impact of the cap.

6.50. One supplier argued that we should obtain an estimate of the short-run impact of changed price differentials on switching by normalising the results of all the relevant studies, plotting the relationship between switching rates and differentials implied by these studies, and then using this relationship to estimate the reduction in switching that might be expected from a given reduction in price differentials.

**Our response**

6.51. We believe the proposed level of cap meets the objective and we have given appropriate weighting to the matters to which we must have regard in the Act, including the need to maintain incentives for switching.

6.52. We have considered all the sources of evidence set out in our May consultation, as well as further datasets from trials we have undertaken on switching and other evidence. While switching rates may decline under a cap, we believe there will continue to be incentives for customers to switch supplier with a large number of suppliers continuing to offer fixed term tariffs significantly below the cap level. A comprehensive overview of the data sets and our approach is set out in Chapter 5 and the annex to this appendix.

## Matter to which we must have regard: the need to ensure that holders of supply licences who operate efficiently are able to finance activities authorised by the licence

6.53. A number of stakeholders commented that the cap should be set at a level above the efficient benchmark to account for variations in efficient cost. For example, one supplier argued that headroom should account for variations in efficient costs, amongst

other things,[18] that are not accounted for elsewhere in the cap design. Another supplier highlighted several efficiently incurred costs it believes varies between suppliers, including bad debt, pension costs, services to vulnerable customers, high percentages of single fuel customers, and customers with restricted meters.

6.54. A number of stakeholders (including large and small suppliers) commented that the cap should be set at a level above the efficient benchmark to account for uncertainty. For example, one supplier argued that headroom should allow for uncertainty in estimating the level of efficient costs, where it cannot or has not been factored into the benchmark methodology. Stakeholders identified a number of potential sources of uncertainty from wholesale, policy, smart, network, and a range of other costs.

6.55. One supplier argued that financeability should be assessed at a licensee level, and that some suppliers have more customers on fixed tariffs, which, in the current market, are often priced below average costs in order to win and maintain customers. The supplier acknowledged that this dynamic may change as a result of the cap.

**Our response**

6.56. We believe the proposed level of cap meets the objective and we have given appropriate weighting to the matters to which we must have regard in the Act, including for an efficient supplier being able to finance its activities.

6.57. In general we agree with stakeholders that uncertainty and efficient cost variation are relevant considerations for financeability and have included allowances in the cap to account for these factors. We have considered the efficient benchmark and headroom together to ensure the proposed level of the cap adequately address financeability. Chapter 4 outlines in detail how we have considered uncertainty and variations in efficient cost.

[18] This supplier argued that "cost headroom" headroom should account for uncertainties, errors and variations in the level of efficient costs that are not accounted for elsewhere in the cap design. They argued that this was in addition to "competition headroom".

# 7. Annex

This annex explains our detailed analytical approach to assessing the direct impact of the cap, potential supplier responses to the cap and the relationship between switching and price dispersion.

It is supported by Chapter 5, which outlines how we have used this analysis and its relative strengths and weaknesses. It is also supported by the cap level analysis supplementary model, which shows how our 'top-down' model works in practice, after removing confidential data.

7.1. In Chapter 5 of this appendix we outline our analytical approach to assessing how our proposed level of the cap relates to the objective of the Act and the matters to which we must have regard. It outlines the range of analysis and evidence bases we have used. It highlights how we have used a broad range of independent analysis and qualitative considerations to inform our decisions on the level of the headroom and the cost efficient benchmark. It summarises the strengths and weaknesses of each set of analysis.

7.2. This annex provides additional detail regarding how we have completed our 'top-down' analysis, and how we have considered the potential impacts of switching. Further information on our analytical approach to analysing uncertainty and variations in the cost to serve of different customer bases can be found in their respective appendices.

## 'Top-down' analysis of the impact of different cap levels

7.3. We have analysed how the overall cap level relates to the protection for existing default customers and the matters to which we must have regard. Quantitatively, we have focused on the impact of different cap levels on typical customer bills, and on supplier profitability. We considered how suppliers may choose to change their fixed tariff pricing in response to the cap.

7.4. This description of our 'top-down' analytical approach is supported by the *Cap Level Analysis* supplementary model. Due to the highly confidential nature of the input data provided by suppliers to Ofgem, we are not publishing the input data itself. Stakeholders can use the materials published in this statutory consultation, as well as the Excel spreadsheet and their own data which they submitted to us to understand the approach we have used in analysing the evidence to support our decision making.

7.5. All references to modelling in this section refer to the *Cap Level Analysis* supplementary model, published alongside this statutory consultation, unless stated otherwise.

### Input data

7.6. To calculate and test potential default tariff bill impacts in a consistent manner, we have analysed the impact of the cap as if it were introduced in 2017, using 2017 baseline values for the cap. We used input data as set out in Table A2.2.

**Table A2.2**

| Data | Source |
|---|---|
| Tariff stock | Supplier responses to our Request For Information (RFI) on tariffs, as of June 2018. Tariffs provided for each quarter of calendar year 2017, broken down by geographic region, payment type, fuel type, meter type, account type (single fuel/dual fuel), paper/paperless, and tariff type (fixed or variable). Prices are broken down into standing charge, unit rate(s), and any discounts offered. |
| Customer numbers | Supplier responses to our Request For Information (RFI) on tariffs, as of June 2018. Customer numbers are for each quarter of calendar year 2017, broken down by geographic region, payment type, fuel type, meter type, account type (single fuel/dual fuel), paper/paperless, and tariff type (fixed or variable). |
| 2017 tariffs | Pricing data for each supplier for 2017, provided by Energy Helpline. Data is provided from the 1st calendar day of each month of the calendar year. |
| Typical Domestic Consumption Values (TDCV) | Median consumption values, as per October 2017. https://www.ofgem.gov.uk/gas/retail-market/monitoring-data-and-statistics/typical-domestic-consumption-values |
| Mean Consumption Values | Supplier responses to our RFI on Revenue and Costs, April 2018. Broken down by payment type, fuel type, meter type and tariff type. |
| Cap values | The average of April and October 2017 GB average baseline cap values for each fuel, payment and meter type, weighted by proportion of demand in each season (See: *Sheet: 1b Historical level tables* of the *Default Tariff Cap* supplementary model). |
| Historic costs, revenue and profitability | Supplier responses to our RFI on Revenue and Costs, April 2018. Where the RFI was not requested from a supplier we have used provided or publicly available accounting information, where available. |

7.7. We calculate customer bill impacts inclusive of 5% VAT, and subtract this when considering supplier revenue impacts. We assume multi-rate customers consume 58% of their energy in peak periods.

7.8. Before inputting the data into the model, a number of preparatory steps are required to cleanse and consolidate this data.

7.9. Our tariff stock data (see Sheet: *Tariff Stock and Customer Numbers*) is used to show the average price of SVTs over 2017, and the average yearly fixed tariff revenue per customer. To prepare this data, we:

1. Collate all tariff information provided by suppliers into a single file.
2. For each individual tariff, calculate the expected TDCV bill for 2017 on an annualised basis, using the TDCV values. This includes any discounts offered (dual fuel, online).
3. Calculate total expected revenue for a tariff, by multiplying the bill by customer volumes. We divide the total revenue by four, as the data is on a quarterly basis.
4. Aggregate by region, and by any sub-groups of tariff type. This gives a total revenue for each supplier, segmented by payment type, fuel type, meter type, account type, paper/paperless and tariff type.

5. We then divide this total revenue for the segment by the number of customers in the segment, averaged over the four quarters, to get a typical TDCV bill for that group.
6. Steps 2 and 5 are repeated using supplier specific mean consumption values rather than TDCV.

7.10. We use the same data source as above to get customer numbers (see Sheet: *Tariff Stock and Customer Numbers*). To prepare this data, we:

1. Aggregate total customer numbers for each quarter, split by supplier and segmented by payment type, fuel type, meter type, account type, paper/paperless and tariff type.
2. Sum together the customer numbers for all quarters, and divide by 4 to produce the annual average customer numbers for each segment.

7.11. We use 2017 Tariff Data (see Sheet: *2017 Tariffs*) to inform our understanding of fixed tariff price dispersion in the market. To prepare this data, we:

1. Collate all available tariffs in the market in 2017, at the 1st of every calendar month. This data is provided by Energyhelpline.
2. For each month, and for each customer segment (i.e. payment type, fuel type, meter type, account type), extract the minimum 1-year fixed tariff available on that market.
3. Take the average of the 12 monthly data points. This provides us with an average minimum fixed tariff available on the market for each supplier and customer segment.

7.12. We use mean consumption data (see Sheet: *Consumption Values*) to estimate the revenue impacts for each supplier. To prepare this, we:

1. Collate the information on Revenues per Customer Type from the April 2018 Costs and Revenues RFI
2. Divide the total volumes supplied by the average of the customer numbers as per April and October 2017.
3. This will give the mean consumption by each customer segment. We then match this to the customer segments and tariff information, as detailed above.
4. Where we do not have data for mean consumption, we default to using TDCV.

7.13. We then calculate the expected cap level (see Sheet: *Assumptions* and Sheet: *Consumption Values*) for each segment under the price cap. To prepare this data, we:

1. Take the GB average cap level April 2017 and October 2017. We take this cap level for nil- and TDCV consumption, for each fuel and for each payment type. This provides us with the cap level at TDCV for each customer segment.
2. For each segment, multiply the relevant price cap's unit rate by the appropriate mean consumption (for the relevant supplier's relevant segment), and add on the relevant standing charge. This provides us with the cap level for each customer segment of each supplier.

**Scenarios**

7.14. We analysed the three hypothetical scenarios when considering the direct and indirect impact of the price cap in 2017 (see Sheet: *Control and Outputs* and Sheet: *Calculations*).

7.15. The first scenario we considered is where suppliers comply with the cap, and do not make any other pricing or cost adjustments. This is equivalent to the 'direct' impact of the cap. We create this scenario through comparing the level of the cap to the level of the pre-cap tariff. Where the pre-cap tariff is higher than the cap, the tariff is lowered so that it is compliant with the cap. Within the 'Controls and Outputs' sheet, this corresponds to the 'SVT Below the Cap Change' control set to 'As-Is', and the 'Fixed Tariff Change' control set to 'As-Is'.

7.16. The second scenario we considered is where suppliers fully converge all non-default tariffs to the level of the cap, and fully converge all default tariffs below the cap to the level of the cap. (eg all direct debit single fuel, single rate meter, electricity customers' prices for supplier X are raised to the level of the direct debit single rate electricity price cap.) Within the 'Controls and Outputs' sheet, this corresponds to the 'SVT Below the Cap Change' control set to 'Rise to Cap', and the 'Fixed Tariff Change' control set to 'Converge to Cap'.

7.17. The third scenario we considered is where suppliers raise or reduce all non-default tariffs such that overall domestic retail profitability returns to the lower of the previous year's profitability or a normal rate of return. Within the 'Controls and Outputs' sheet, this corresponds to the 'SVT Below the Cap Change' control set to 'Rise to Cap', and the 'Fixed Tariff Change' control set to 'Offset to Normal'. When we create this scenario, we:

1. Assume all SVT tariffs that were below the cap now converge to the cap level (for the appropriate segment, as in Scenarios A and B). Using mean consumption data, calculate the change in total revenue for each supplier.
2. Calculate how much additional (or reduction in) revenue is required to reach the lower of normal profit (1.9%) or 2017 EBIT.
3. Divide the total amount of additional revenue required by the number of fixed tariff fuels supplied (i.e. dual fuel customer = 2 fuels supplied) for each supplier. For example, if supplier X requires £25m additional revenue and has 2.5m fixed tariff fuels supplied, they require £10 per fixed tariff single fuel customer and £20 per dual fuel customer.
4. Increase or decrease all pre-cap fixed prices by the required amount. This gives a set of post-cap fixed tariffs. As discussed in the below section, we use data on 2017 tariffs to understand how this scenario impacts price dispersion in the market.

7.18. These scenarios are stylistic, designed to show potential 'extreme' reactions to the cap. In practice, the market will see a mix of these strategies in place at any one time. Suppliers will undertake a blend of these strategies in order to appropriately reflect market dynamics, supplier incentives and strategies.

**Outputs**

7.19. For each scenario, we looked at a range of customer and supplier metrics. We then considered how different suppliers would potentially respond at a given level of the cap. By looking at a combination of different supplier responses, we could consider how we may expect the market to respond to the cap.

7.20. We estimated how customer bills would have changed following introduction of a cap, and after a supplier responds to the cap. On the 'Controls and Outputs' sheet, the 'Tariff Data' control should be set to 'Full Tariff Stock' and the 'Consumption' control should be set to 'TDCV'. To estimate this, we:

1. Identify the difference between the pre-cap TDCV bill and the post-cap TDCV bill for each unique customer segment.

2. Where we have required a level of aggregation, multiply the change in bill for each customer segment by the number of customers, which gives us a total change in revenue (inclusive of VAT) for each segment.

3. Sum together the figure for total change in revenue for the relevant customer segment, and divide it by the sum of customers. This allows us to understand the weighted average customer saving (or bill increase) for any given customer segment, at typical consumption.

7.21. We estimated how revenue would have changed for each supplier. On the 'Controls and Outputs' sheet, the 'Tariff Data' control should be set to 'Full Tariff Stock' and the 'Consumption' control should be set to 'Mean'. To estimate this, we:

1. For each unique customer segment, compare pre-cap mean consumption bills and post-cap mean consumption bills.

2. Multiply the difference between the two bills by customer numbers to provide a total change in revenue.

3. Sum these together for each supplier and remove 5% VAT. This allows us to understand the total revenue impact of the cap for each supplier.

7.22. We estimated how EBITs would have changed following the direct impact of the cap and a supplier's indirect response. On the 'Controls and Outputs' sheet, the 'Tariff Data' control should be set to 'Full Tariff Stock' and the 'Consumption' control should be set to 'Mean'. To estimate this, we:

1. Identify the total revenue impact of the cap, as described above.

2. Adjust 2017 EBIT and revenue data for each supplier to create a new EBIT margin.

7.23. We estimated how price dispersion would have changed for each supplier, through comparing the weighted average dual-fuel, single-rate SVT compared to each supplier's cheapest dual-fuel, single-rate fixed tariff. On the 'Controls and Outputs'

sheet, the 'Tariff Data' control should be set to '2017 Tariffs' and the 'Consumption' control should be set to 'TDCV'. To estimate this, we:

1. Calculate the weighted average SVT for each supplier by multiplying the SVT dual-fuel single-rate tariff by the customer numbers for each unique customer segment. This provides us with the total revenue. We sum these together and divide by the sum of customers.

2. Identify the cheapest dual-fuel, single-rate fixed tariff available for each supplier. We use the average of the monthly minimum 2017 tariffs data.

3. Compare the above two metrics to estimate how each supplier's price dispersion would have changed for any given scenario.

7.24. We use a similar approach to estimate price dispersion of the market, or of a specific market segment. We compare the weighted average SVT to the cheapest minimum tariff of the market or a market segment.

**Considerations**

7.25. The results of these scenarios give estimates of illustrative possible outcomes only. For each set of results for each scenario, we have considered carefully how plausible the scenario may be, and what qualitative considerations should support the interpretation of the data.

7.26. We have noted whether suppliers feasibly can raise fixed prices, and what may happen to customer churn as a result. Whilst suppliers may be able to improve their revenue position through increasing the price of fixed tariffs, they may also lose revenue if customers choose to switch to other cheaper suppliers. Furthermore, suppliers could plausibly only raise their fixed tariffs to the level of the cap, or below. We have also noted that suppliers' fixed tariff prices will be dependent on the price of wholesale energy at any given time, as well as their long-term strategies.

7.27. Where we have available data, we have considered how a supplier's profitability would change if the supplier could improve their operating cost per customer. For example, we considered how profitability would change if operating costs per customer were in line with the allowance of the cap. Conversely, we considered how much suppliers would need to reduce their operating costs per customer by to achieve normal profit. We have considered how suppliers could choose to respond to the cap if their operating costs were lower. We note that, given our model uses 2017 data, many suppliers' operating costs per customer in 2019 may be materially different.

7.28. The outcome of this analysis forms one part of our wider evidence and analysis base when assessing the impacts of the cap. Further discussion on the strengths and limitations of this analysis can be found in Chapter 5 of this appendix.

## Methodology for estimating switching impact

7.29. We have considered a number of sources of evidence on the relationship between savings and switching, as detailed below. Where possible, we have quantitatively derived the relationship between available savings and switching. We have also used qualitative evidence to further our understanding of the relationship between savings

available and switching. We have also considered other relevant drivers of incentives to switch, such as brand preference and the 'safeguarding effect'.

7.30. These provide an evidence base, recognising the considerable uncertainty in how consumers and suppliers may behave under different market conditions, for assessing our need to have regard to the need to maintain incentives to switch.

**Qualitative evidence**

7.31. We have considered qualitatively the impacts of the prepayment meter cap. We have considered customer volumes from Social Obligations Reporting, which allowed us to understand the impact of the cap on supplier net gains and market share. We have also considered data provided to us confidentially from a leading price comparison website, as well as information provided to us on the supplier-specific impact of the prepayment meter cap on customer churn. These sources generally cited a reduction in switching rates following the introduction of the prepayment meter cap – although some cited greater changes than others.

7.32. We have considered the impact of a price cap on switching in Australia. In particular, we considered the relationship between price dispersion and switching rates in Australian regions with price regulation in place, of varying degrees of tightness. We also considered the impact of changes in the level of the cap over time on switching rates. This case study, as summarised in Figure A2.1, reflects a noticeable relationship between price dispersion and switching.

**Figure A2.1: Relationship between switching rates and price dispersion in Australian regions**


7.33. We have also considered the academic work by Waddams and Zhu (2013) on the impacts of the non-discrimination reforms in Great Britain[19], and the econometric work undertaken by Ofgem as part of the 2008 Energy Supply probe.[20]

7.34. As part of our consumer engagement survey this year, we also undertook a conjoint analysis, which is a method of revealing consumers' preferences as opposed to them simply stating what they would prefer. This analysis helps us to understand the relative

[19] C Waddams Price, C Webster, M Zhu - Centre for Competition Policy, Working Paper, 2013
[20] https://www.ofgem.gov.uk/ofgem-publications/38437/energy-supply-probe-initial-findings-report.pdf

importance of different tariff attributes and how consumers trade off different features when evaluating an energy offer. The conjoint exercise asked consumers to evaluate a series of different energy offers and select which they preferred. Further calibration exercises to determine likely switching rates were overlaid to then produce the most accurate switching estimates.

7.35. The attributes included in the study were brand, price, quality of service, payment method, online management, a fixed or variable rate, and exit fee. From the attributes included in the study, savings and supplier type are the most important elements of tariff choice, these accounted for more than 50% of choice. Consumer service from the attributes tested was third.

7.36. The research shows a relatively linear trend in switching rates as savings increase. If savings are reduced from around 25% to about 15%, it indicates this could reduce switching by around one third. This is broadly consistent with our other evidence sources.

**Quantitative evidence**

7.37. We have used a broad range of data sources to quantitatively assess a range of potential impacts of different levels of the price cap on switching. For our approach, we:

1. Assess the relationship between available savings and change in switching rate for all data sources, as listed below.

2. Compare the level of savings available in the market in 2017 with the outputs of the headroom scenarios modelling (discussed in the first section of this annex) on the level of savings that may be available to consumers under a price cap (had it been in place in 2017).

3. For each data source, the change in expected savings leads to an expected estimated change in switching rates. For example, if a source suggests £300 saving is associated with a 20% switching rate, and a £200 saving is associated with a 15% switching rate, then if savings available fall from £300 to £200, the switching rate is estimated to fall from 20% to 15%, ie a 25% fall in switching.

4. We then consider all the modelled results in the round, identifying the minimum, maximum and average expected change in switching for each of the data sources.

7.38. Each source shows a different relationship between savings available and switching – some stronger than others. This reflects the varied populations in the underlying data, and the different approaches of the individual data sources. We also considered the uncertainties in these relationships and applied further sensitivities to account for these, for example, that consumer behaviour may change over time.

7.39. We have quantitatively and qualitatively considered the impact of brand preference. Where possible, our analysis produces distinct relationships between switching rates and price dispersion for large, medium and small suppliers respectively. This allows us to forecast the impact on switching if available fixed tariffs in the market stayed at pre-cap levels, but fixed tariffs available from a specific market segment converged to the level of the cap.

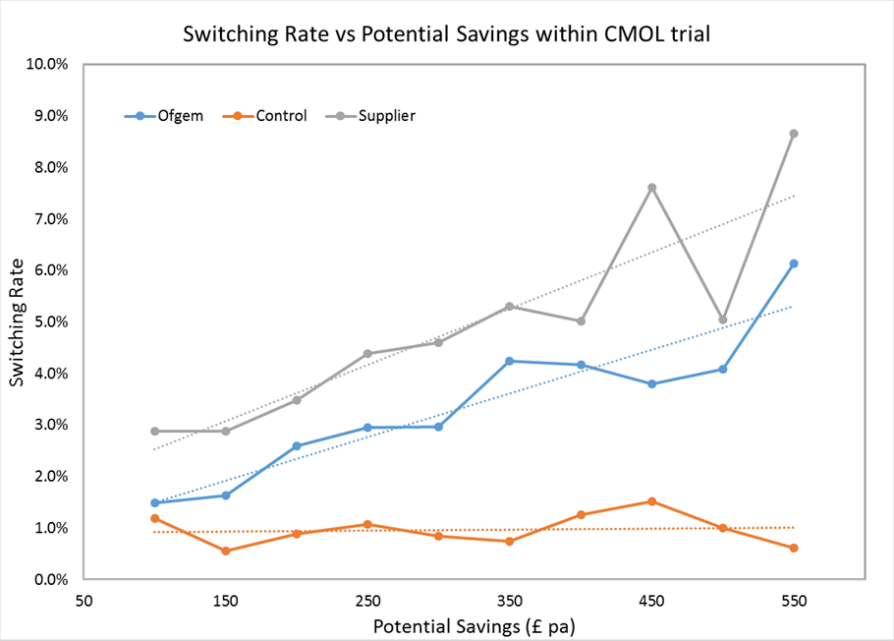
7.40. Details of the data sources we have considered are outlined in Table A2.3, below.

**Table A2.3: Data sources considered in switching analysis**

| Data Source | Approach |
|---|---|
| Cheapest Market Offer Letter trial | • Ofgem conducted a Randomised Control Trial in 2017, in which samples from two suppliers' SVT customer bases were selected for involvement.<br>• Within this trial, customers were sent a "Cheaper Market Offer Letter", detailing three cheapest tariffs available. The letter was branded by their supplier or by Ofgem.<br>• The output customer-level data which was used in our analysis contains details of each customer's estimated current annual costs, their best offer in the letter, details of whether an internal or external switch was made, and the customer's new annual costs if they had switched. |
| Data provided confidentially by a PCW | • A price comparison website provided data confidentially to support our analysis. Data is from 2016 to Q1 2018.<br>• For each day within the specified time range, the data showed the median savings available for customers who had visited the website, the number of offers displayed to customers and the number of switches made by customers<br>• For each week, we compared the number of switches with the median savings offered. We also compared the weekly change in the number of switches with median savings (i.e. first differences).<br>• We have also qualitatively considered a number of other segmentations of the data provided by the PCW, such as switches to large, medium or small suppliers. |
| Historical Great Britain market data on switching and prices | • Ofgem and the CMA have collated data on the number of switches in a given month against the average price difference available at that time the study was undertaken.<br>• We have not considered data points before and directly after the introduction of the price discrimination clauses in 2009. |
| Stated preference survey data | • Ofgem and the CMA have conducted surveys into consumer preferences. Specifically, these surveys asked consumers about the minimum saving required to switch supplier.<br>• The findings from recent surveys (2014-16) are considered. |
| Collective Switch trial | • Ofgem has conducted a trial, whereby 50,000 disengaged customers from a major supplier were sent letters encouraging them to join a collective switch organised by Ofgem. The letters showed the potential savings available.<br>• We analysed whether consumers with more projected savings were more likely to switch. |

7.41. Each of these sources show a positive relationship between savings and switching. The central results from the Ofgem CMOL trials are shown in Figure A2.2. This showed that switching rates increased when customers were aware of higher potential savings – although switching rates remained low for unprompted customers.

**Figure A2.2: Ofgem CMOL trial results**




7.42. We note that the change in price dispersion is also dependent on how suppliers respond to the cap, e.g. raising fixed tariffs offered. Consumers may also change their behaviour when a price cap is implemented. As such, there is a high degree of uncertainty on the impacts of the cap on switching. Our position on the range of possible outcomes on switching are outlined in Chapter 5 of this appendix.

7.43. There is substantial uncertainty, but our view is it is likely that, other things being equal, switching rates will fall following the introduction of the price cap. Our best estimate is that, by reducing price dispersion, the proposed level of the cap could reduce switching rates by as much as 50%.