ofgem

Working paper #1: setting the default tariff cap

In February 2018, the Government introduced the Domestic Gas and Electricity (Tariff Cap) Bill, which would create a new duty on Ofgem to design and implement a price cap for customers on standard variable and other default tariffs. This paper discusses high-level design questions relating to how the level of the cap is set.

Date	12 March 2018
Contact	retailpriceregulation@ofgem.gov.uk

Contents

1. Executive summary

1.1. The Domestic Gas and Electricity (Tariff Cap) Bill, subject to the will of Parliament, creates a new duty on Ofgem to design and implement a price cap for domestic customers on an SVT or other default tariff (the "default tariff cap").[1] In this paper we discuss a range of overarching design questions relating to how the level of the cap will be set.

1.2. The factors that we will take into account when designing the level of the default tariff cap are set out in the legislation. The Bill imposes a duty on Ofgem to design the cap in a way that protects domestic customers on SVT and other default rates. It also sets out a number of matters that Ofgem must have regard to. It requires that the cap is introduced "as soon as practicable" after the Act has passed.

1.3. To meet these objectives the default tariff cap would need to reflect an efficient level of costs and enable suppliers to compete and maintain incentives for domestic customers to switch.

1.4. The costs of supplying energy to customers vary significantly over time, often for reasons outside of the suppliers' control. For this reason, we will need to design a mechanism that allows the level of the cap to be updated periodically. The Bill requires us to review the level of the cap at least every six months (in line with the existing safeguard tariffs, which are updated twice a year).

1.5. The Bill requires that the cap must be applied in the same way to all domestic suppliers. This means that the cap will place an absolute limit in £ on the amount suppliers can charge a given customer on a default tariff. We expect to set this limit such that it will increase linearly with consumption, and include a standing charge. We will consider the ratio of the fixed to the variable element of the cap.

1.6. Our current intention is that - to ensure that it is cost-reflective - different levels of the default tariff cap would be calculated for gas and electricity, for single- and multi-register electricity meters, and for different regions (as with the existing

[1] Domestic Gas and Electricity (Tariff Cap) Bill

safeguard tariffs). We will also consider whether different tariff cap levels should apply to customers using different payment methods.

1.7. Building on our December consultation on extending price protection to more vulnerable customers[2] (the 'December consultation'), we have identified a number of different approaches to estimating efficient costs for the purposes of setting the cap. These methodologies rely to different extents on cost and price data.

1.8. One way of estimating this element of the cap would be with reference to a 'competitive' price benchmark, on the basis that rivalry in the competitive segment of the market will have driven prices to an efficient level.

1.9. We consider that this would offer a viable way of setting the level of the default tariff cap. We discussed the design issues associated with using reference prices to set the level of the cap in our December consultation. This included looking in detail at a model based on the same price benchmark as used in the existing safeguard tariffs (combined with a series of exogenous cost indices), and an alternative based on linking the level of the cap to trends in a basket of market tariffs. We will continue to evaluate these methodologies in the context of the wider default tariff cap – including what changes might be required if we were to use an approach based on the existing model, given the objectives of the default tariff cap.

1.10. An alternative would be to calculate the level of efficient costs from the bottom up – estimating efficient allowances for each element of costs and summing these together. This approach was not discussed in detail in our December consultation, and we provide a fuller discussion of the issues that would be involved in this paper.

1.11. Were we to ultimately use a bottom-up approach to set the cap, we would expect:

- That the allowance for wholesale costs would be set based on a version of the model used to index the level of the existing safeguard tariffs, ie with reference to observations of the prices of wholesale contracts for delivery in the period covered by the cap, likely updated on a six monthly basis
- That companies would be enabled to pass through costs associated with meeting their environmental and social obligations, with the allowance based on a combination of historic costs and government forecasts
- That the allowance for operating costs would require some benchmarking across suppliers, to form a view of what is an efficient level of these costs. The allowance would likely need to move over time to take into account trends in these costs (including relating to the smart meter rollout)
- That the cap would also include an allowance for: networks costs (based on the same methodology as used under the existing safeguard tariffs); a possible further set of direct costs relating to system functions (subject to some materiality threshold); and an allowance for a normal return on capital.

1.12. **We have not included questions in this paper, but are inviting comments on any or all of the issues raised.** Please submit these no later than **26 March 2018** to our mailbox: retailpriceregulation@ofgem.gov.uk.

2. Introduction

2.1. This document is the first in a series of working papers that we will issue to explain how our thinking on the design of the default tariff cap is evolving as we gather

[2] Providing financial protect to more vulnerable consumers, December 2017

views and evidence over the coming months. We would welcome feedback on these working papers, but ask that where stakeholders would like to provide any comments, they do so within 2 weeks of their publication. This series of working papers will be followed by a formal policy consultation, summarising our overall thinking.[3]

2.2. As the first in the series, this paper discusses a range of overarching design questions relating to how the level of the cap will be set; later papers will focus on specific issues. In this paper, we discuss:

- the legislative framework, which determines the factors that we will take into account when choosing the methodology for setting the level of the default tariff cap
- the design of the default tariff cap, and particularly whether different levels of the cap would apply to different customer groups
- detailed issues relating to how to estimate what is an efficient level of costs for the purposes of setting the level of the default tariff cap

2.3. A price cap is already in place for domestic customers on prepayment meters and those in receipt of the Warm Home Discount (WHD) – the prepayment and vulnerable "safeguard tariffs".[4] In December 2017 we published a consultation "Providing financial protection to more vulnerable customers" which discussed expanding the existing WHD price cap to a wider group of vulnerable customers.

2.4. Many of the questions around the design of the default tariff cap are closely related to issues raised in our previous consultations on the vulnerable safeguard tariff, and we refer frequently to the December consultation in this document. Given the overlap, evidence received from stakeholders in that context will be factored into our thinking in relation to the design of the default tariff cap (and vice versa).

2.5. The main feature of the default tariff cap which distinguishes it from the existing safeguard tariffs is the wider scope. The existing safeguard tariffs cover only those customers with prepayment meters and recipients of the WHD - whereas the default tariff cap would target *all* customers in the market on a default tariff. A key area of our focus will therefore be what implications this broader scope has for how the cap should be designed.

3. Legislative framework

3.1. The proposed legislation imposes a duty on Ofgem to design the cap in a way that protects existing and future domestic customers on SVT and default rates. It also sets out four matters Ofgem must have regard to:

a) The need to create incentives for holders of supply licences to improve their efficiency;

b) The need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts;

c) The need to maintain incentives for domestic customers to switch to different domestic supply contracts

[3] For further details of our intended consultation process, please see our open letter, published 6 March 2018
[4] This webpage provides further details

d) The need to ensure that holders of supply licences who operate efficiently are able to finance activities authorised by the licence.

3.2. The Bill also requires us to introduce the cap "as soon as practicable" after the Act has passed. Under the legislation, the cap will be time limited: in 2020, we must review whether the conditions are in place for effective competition, and publish a report, including a recommendation on whether the cap should be extended or not. The Secretary of State would then decide whether to remove the cap. If the cap is not removed, we would carry out further reviews in 2021 and 2022. If the cap is extended after each of our reviews, it will cease to have effect at the end of 2023.

3.3. This implies two further matters that we will take into account when designing how the level of the cap is set. First, we must design it in a way that allows it to be put in place quickly. Second, the cap should be designed in a way that reflects its intended (temporary) lifespan.

3.4. The Bill requires us to review the level of the cap at least once every six months. This is in line with the existing safeguard tariffs, which are updated twice a year.

3.5. The Bill also makes it clear that the price cap must be applied in the same way to all domestic suppliers and therefore there cannot be any exceptions for any particular suppliers. This means that the maximum amount suppliers can charge will not vary from company to company: the cap will place an absolute limit in £ on the amount suppliers can charge a given customer on a default tariff. Allowing the level of the cap to vary by company would raise concerns, as it would imply that the level of protection provided by the cap to a customer that has not engaged would depend on the supplier by which the customer is served.

4. Default tariff cap design

Number of caps

4.1. The existing safeguard tariffs comprise different caps for gas and electricity, for different meter types, and for different regions (a total of 3 x 14 = 42 caps for a given consumption level). This is to reflect the differences in the costs of supplying gas and electricity, differences in the costs of supplying customers with single and multi-rate electricity meters, and differences in network charges between regions.

4.2. Our current expectation is that the level of the default tariff cap would vary in the same way (although we welcome submissions on this feature of the design). This is because of the importance of allowing the level of the cap to reflect key differences in the costs of supplying different groups of customers, while keeping the complexity of the cap (and in particular the number of different caps) at a manageable level.

How the cap varies with consumption

4.3. The existing safeguard tariffs are set at nil consumption and the Typical Domestic Consumption Value[5]. This is to allow the safeguard tariff to scale with consumption.

4.4. We currently expect that the level of the default tariff cap would similarly increase linearly with a customer's level of consumption, and include a fixed 'standing charge' element. This approach matches the structure of most default tariffs currently offered in the market. It would allow suppliers to recover both the fixed and variable element of their costs, while avoiding undue complexity.

[5] See this page for a description of what these values are. Note that the consumption values for which the level of the cap is set are those which were in place in 2015.

4.5. We will consider the ratio of this fixed element to the variable element of the cap, including assessing evidence relating to which costs vary depending on the volume of energy a customer uses. Respondents to the December consultation who commented on this area were generally supportive of the idea of including a 'standing charge', though there were a range of views about precisely how this should be calculated.[6] We would welcome any further views on how the level of the cap should vary with consumption in the context of a wider default tariff cap

4.6. For multi-register tariffs, our current expectation is that like the existing safeguard tariff, the cap would be based on assumed consumption splits (ie estimates of the proportion of the consumption of customers with different meter types that will take place in peak and off peak periods). Experience under the existing safeguard tariffs has shown this to be a practical approach to ensure customers with non-standard electricity meters continue to receive protection, while avoiding the need for separate caps to be published for every possible metering arrangement. We welcome any submissions on how multi-register tariffs should be treated under the default tariff cap.

Payment methods

4.7. We will consider whether we should set different tariff cap levels for customers with different payment methods. We note that at present, customers paying using standard credit typically pay significantly more than those using direct debit. We have collected views on allowing a payment method differential in our December consultation, and would welcome any further views in the context of a wider default tariff cap. This includes in relation to the question of whether payment method differentials should continue apply where customers have smart meters.

5. Estimating an efficient level of costs

a) Price versus cost benchmarks

5.1. Estimating an efficient level of costs is a challenge that is common to situations where there is regulation of the tariffs or revenues that companies are allowed to charge or earn. This includes the RIIO price controls we set for the gas and electricity network companies.

5.2. However, regulating prices in the retail energy markets is different to standard price controls in a number of respects:

- Price controls are most commonly used in the presence of natural monopolies, and typically cover a small number of national or regional monopolists. In contrast, the GB retail markets are open to competition, with over 70 suppliers, and the default tariff cap is being introduced as a temporary measure, with the intent that competition can continue to exist beneath it
- A significant part of the supplier's role is passing on levies and collecting third party charges, which means that a relatively large part of suppliers' costs are outside of their control
- Unlike the network companies, suppliers are relatively asset light, and have limited capital expenditure

5.3. What is an efficient level of costs is not something that can be directly observed. However, we are able to collect data on companies' historic and forecasted costs,

[6] See Summary of Consultation Responses

and then make adjustments to reflect our estimates of the companies' efficiency. But doing so is subject to various difficulties.

5.4. One reason for this is that comparable cost information for each company will often not be held in the exact form required (for example due to differences in accounting definitions). In many cases, it will not be possible to observe the relevant economic variables, only to estimate them using imperfect data. Making adjustments to the companies' costs to reflect efficiency will require a significant degree of discretion on our part. More generally, a large asymmetry of information will exist, and suppliers will always have greater insight into their own costs than the regulator. While steps can be taken to reduce these various risks, they cannot be avoided entirely.

5.5. One advantage of setting a price cap in the retail market is that information on prices in the competitive segment of the market can be used to help estimate what is an efficient level of costs, on the assumption that effective competition in this part of the market will have driven prices to an efficient level.

5.6. Using price data in this way avoids many of the problems associated with relying on cost information – we are no longer reliant on companies to tell us what their costs are, and there is much less need for us to use our discretion to establish how different costs should be treated under the cap.

5.7. However, the approach relies heavily on the assumption that the references prices provide a valid comparator, and do in fact reflect the costs that would be incurred by an efficient supplier. This might not be the case if, for example, the supplier whose tariff is used to set the reference price faced different costs to the market more generally, or was pricing beneath their costs as part of a growth strategy.

Estimating an efficient level of costs to set the initial level of the cap

5.8. In our December consultation, we outlined five different models which could be used to calculate the level of the competitive benchmark (ie provide an estimate of what is an efficient level of costs) for the purpose of setting a cap, each of which relies on cost and price data to different extents.[7]

5.9. In that document, we stated our intention to consider two of these models in detail for the purposes of extending a price cap to a wider group of vulnerable customers: an approach based on the existing safeguard tariff methodology, and a market tariff basket approach.

5.10. In designing the wider default tariff cap, we will consider a fuller range of possible models (summarised in Figure 2). Specifically, we will consider (and welcome views on) the following options for estimating an efficient level of costs for the purposes of setting the initial level of the cap:

1. **A basket of market tariffs**. Under this approach, the allowance for an efficient level of costs would be linked to the price of a basket of competitive tariffs (eg a selection of the cheapest tariffs on offer in the market), possibly subject to some minimum criteria for inclusion in the basket (eg excluding tariffs of the smallest suppliers).

2. **The existing safeguard tariff benchmark**. Under this approach, the allowance for an efficient level of costs would be based on the competitive benchmark used to set the level of the existing safeguard tariffs. This benchmark is based on the average price of two competitive mid-tier suppliers

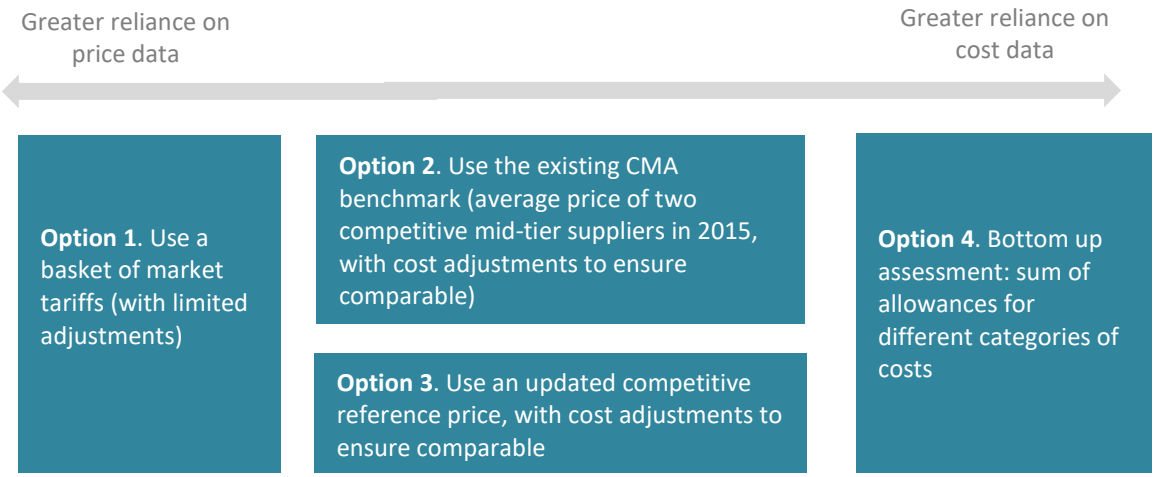
[7] These were the "Prepayment methodology – based on CMA benchmark", "Prepayment methodology – recalculated benchmark", "Basket of market tariffs", "Bottom-up cost assessment", "Regulated default tariff".

in 2015. A number of adjustments were made to the reference price to account for differences between the cost base of the benchmark companies and the market more generally.[8]

3. **An updated competitive reference price**. Under this approach, an updated benchmark would be calculated, based on a similar approach to that used by the CMA (ie taking the average prices of a small number of competitive suppliers, and adjusting these to ensure comparability).

4. **A bottom-up cost assessment**. Finally, we will consider a "bottom-up" approach to setting the benchmark, by estimating efficient allowances for each element of costs, and summing these together to derive the overall benchmark.[9] The advantage of an approach of this type is that it would give us confidence as to exactly which costs were included in the benchmark, and how each element of costs is being treated under the cap. The challenge is how to estimate each element of the allowance, given that what is an efficient level of costs cannot be directly observed.

FIGURE 2: **Options for estimating what is an efficient level of costs to set the initial level of the cap**



5.11. In evaluating these different options for setting the initial level of the cap, our key consideration will be which approach would – given the time available to develop the methodology – provide the most reliable guide to efficient costs. We note that all of the methodologies set out above are subject to limitations, and so where an approach based on reference prices were used to set the cap we would expect to compare this to relevant cost data as a cross-check (and vice-versa).

5.12. The market tariff basket and existing safeguard tariff benchmark approaches were discussed in detail in the December consultation, and we will draw on responses to that document in evaluating those approaches. We also invite any additional submissions in the context of the default tariff cap.

5.13. Using an updated competitive reference price would be subject to similar design considerations as the above options. In evaluating this option, we will consider submissions made to the CMA when setting its benchmark. We welcome views on

[8] CMA Energy Market Investigation
[9] Note that we have grouped this together with the 'regulated default tariff' option discussed in the December document, to reflect that both approaches essentially involve setting an allowance for individual elements of costs and combining these to set the level of the cap.

the criteria that could be used to select benchmark suppliers under this approach, and what (if any) cost adjustments would be required to ensure comparability.

5.14. An approach based on a bottom-up assessment of costs was not considered in detail in the December consultation. It would require an estimate of each element of costs to be calculated, raising a significant number of design challenges. We discuss these issues in the last section of this document, and welcome comments on this model.

Possible approaches to updating the allowance for efficient costs

5.15. The costs of supplying energy to customers vary significantly over time, often for reasons outside of the suppliers' control. For this reason, we will need to design a mechanism that allows the level of the cap to be updated periodically. As described above, the Bill requires us to review the level of the cap at least every six months.

5.16. The key consideration in designing the process for updating the cap will be to identify a mechanism that ensures the cap appropriately tracks changes in (efficient) costs over time, while at the same time avoiding creating unintended (and detrimental) incentives for suppliers. These incentive effects can be significant, and avoiding them is a central consideration of price control regimes more generally.

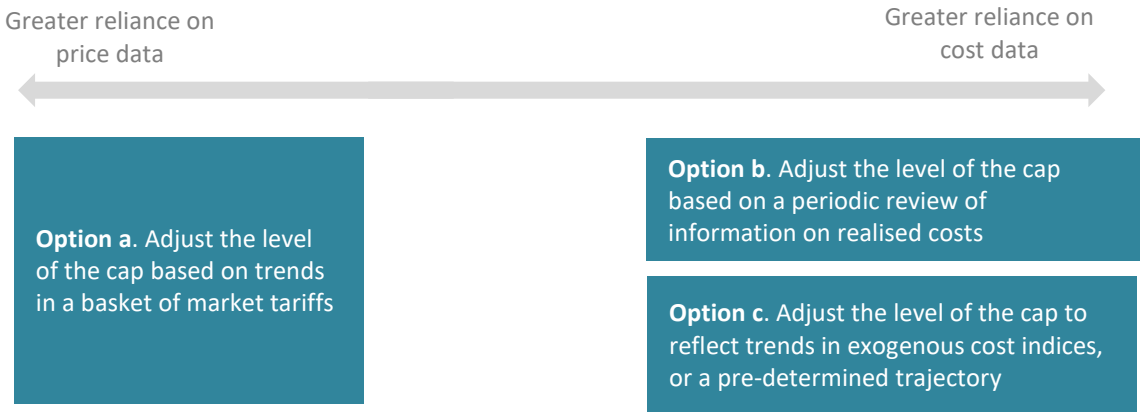
5.17. Again, updates could be made with reference to movements in market prices, or using cost data. Building on the options presented in our December consultation, we have identified three possible approaches to updating the level of the default tariff cap that we will consider (summarised in Figure 3):

a) **The level of the cap could be updated to reflect trends in a basket of market tariffs.** The principle here would be that rivalry in the competitive market segment would ensure that movements in tariffs over time reflect trends in an efficient level of costs. To the extent prices in this market segment are at the competitive level, this could provide a reliable guide to trends in efficient costs, while avoiding the limitations involved in collecting and assessing cost data. However, linking the level of the cap to prices in this way could mean that companies have less of an incentive to keep their prices down in the competitive segment of the market, if they know that this will lead to a tighter cap being set (to the detriment of customers on these tariffs).

b) **The level of the cap could be updated based on a periodic review of suppliers' realised costs**. This would involve periodically collecting historic cost information from different groups of companies, making any efficiency adjustments that were required, and then using this to set the revised level of the cap. The main advantage of such approach is the potential for it to provide an accurate guide to observed trends in costs. The main disadvantage is that this approach may reduce companies' incentive to reduce those costs that are within their control, if they know that this will result in a lower level of the cap being set in future periods.

c) **The level of the cap could be updated based on third party data and/or a pre-specified allowance for certain cost items.** An approach of this type is used under the existing safeguard tariffs, which are updated with reference to an index of wholesale prices, forecasts of policy costs and inflation. The main advantage is that because suppliers would not be able to influence the information used to update the level of the cap, their incentives as to how to act in the market are unaffected. The drawback is that where there are any simplifications in the indices used to update the cap, this may cause its level to diverge from the true trend in efficient costs (a risk that becomes greater the longer the period that the cap is in place).

FIGURE 3: **Options for updating the allowance for efficient costs**



5.18. For the different models, we will consider the most suitable frequency of updates, noting the requirements in the Bill described above. We will also evaluate the degree of detail to which the process for updating the cap should be set out in advance, and the extent to which formal processes for re-opening the methodology are included in the licence condition. Providing a greater level of detail and limited scope for re-opening the methodology (as observed in the existing safeguard tariffs, where the update process is fully-specified in the licence conditions) reduces uncertainty for the companies, but is potentially less flexible, particularly in the event of significant changes in suppliers' cost base.

b) Bottom-up cost assessment

Introduction

5.19. As described above, one approach to estimating an efficient level of cost would be by calculating an efficient allowance for each individual category of costs. This bottom-up methodology was not explored in our December consultation, and so in this section we discuss some of the design issues associated with this type of approach in detail.

5.20. We described above some of the challenges associated with using cost information to estimate what is an efficient level of costs. We also described the advantages of an approach based on an assessment of individual categories of cost to set the initial level of the cap (compared to a methodology based on a reference price), in terms of the greater confidence as to exactly which costs are included in the benchmark and how these are treated.

5.21. Using a bottom-up cost assessment to set the level of the cap would be a significant change compared to the model used to set the level of the existing safeguard tariffs. However, a significant volume of information relating to the different elements of supplier costs already exists, and we have drawn on this in the discussion below.

5.22. In practice, <u>all</u> options for setting the level of the cap except for a pure market tariff basket approach would draw on cost information to some extent to set and/or update the level of the cap. Therefore, information we gather on the different elements of suppliers' costs will be of relevance to our chosen methodology, even if a bottom-up approach isn't ultimately used to set the level of the cap.

Which costs to include

5.23. A bottom-up approach requires us to define which categories of costs should be included in the level of the cap, and how these should be organised. A starting point is provided by the consolidated segmental statements (CSS) that the large suppliers are required to publish each year, providing audited information on their revenues, costs and profits.[10] How different costs are organised in these statements is set out in Table 1.

TABLE 1: **The costs faced by energy suppliers for domestic gas and electricity customers, as categorised in the consolidated segmental statements**

Category	**Description**	**Average cost per dual fuel account, 2016[+]**
Direct fuel costs	Wholesale energy costs (including shaping) Imbalance charges	£425
Transportation costs	All electricity transmission and distribution charges All gas transmission and distribution charges Balancing services use of system charges	£292
Environmental and social obligations costs	The costs associated with: · Renewables obligation · Contracts for difference · Capacity market · Feed in Tariffs · Energy Company Obligation · Administering the WHD* · Assistance for areas with high electricity distribution costs (hydro benefit)	£91
Other direct costs	Elexon and Xoserve charges Data Communications Company charges Broker costs and intermediary sales commissions	£13
Indirect costs	Companies' own internal operating costs, including: · sales and marketing · metering (including smart metering) · bad debt · customer service (including billing) · IT and staffing costs	£179

[+] Average cost per dual fuel account estimated by summing together average cost per gas account, and average cost per electricity account.
* WHD rebates do not appear as a cost in the statement, as these are funded via higher prices for other customers (the net effect on revenue is neutral)

5.24. It would be possible to arrange these costs in different ways, and we welcome views on whether an alternative approach to categorisation would be preferred for the purposes of setting the cap using a bottom-up approach. For example, the costs of capacity market payments, contracts for difference, the renewables obligations and feed in tariffs might – for electricity - all be included alongside 'direct fuel costs' in a wider category reflecting the overall costs of generation.

5.25. In what follows, we consider for each of the broad categories what the costs are, and what the key issues are in estimating what is an efficient level of that type of cost.

[10] The guidelines that the large suppliers must use to prepare these statements are set out in this document: https://www.ofgem.gov.uk/sites/default/files/docs/2015/05/css_guidelines_jan_2015.pdf

Direct fuel costs

5.26. The cost of buying energy from gas producers and electricity generators is the largest component of suppliers' expenditure. Suppliers purchase energy by trading on the gas and electricity wholesale markets (either directly with a producer or generator, or via an exchange); vertically-integrated suppliers can also procure energy internally from their upstream businesses.

5.27. Because wholesale gas and electricity prices can be volatile, and suppliers are limited in how quickly they are able to change their retail prices[11], suppliers typically buy much of their energy requirement in advance of delivery to reduce their exposure to fluctuations in prices ('hedging'). The approach suppliers take to hedging varies from company to company, and changes over time. When purchasing energy in advance, suppliers must forecast their future demand. Because accurately forecasting customer numbers and how much energy they will use is difficult, suppliers also face a risk of purchasing too much or too little energy.

5.28. As described above, the Bill requires that a single level of the default tariff cap is set for all companies in the market. This implies that a single view of efficient wholesale costs should be used to set the level of the cap, as was the case in supplier price controls prior to the liberalisation of the GB energy market. We would expect this to lead to some convergence in the approaches different suppliers take to purchasing wholesale energy for customers on default tariffs.

5.29. If a bottom-up approach were used to set the initial level of the cap, one way of calculating the wholesale component would be with reference to the wholesale costs incurred by suppliers in the past (for example, basing the allowance on the average or lower quartile level of outturn wholesale costs in 2017). However, variation across companies in realised wholesale costs for customers on default tariffs is likely to be driven to some extent by whether a given hedging strategy turned out to be advantageous or disadvantageous given the progression of wholesale prices. This could make benchmarking of this type challenging.

5.30. An alternative approach would be to calculate the wholesale component for a given period in a mechanistic way, based on the prices of wholesale contracts for delivery in the period covered by the price cap. The model used to update the existing safeguard tariffs to reflect trends in wholesale prices is a variant of this approach.

5.31. Specifically, the existing safeguard tariffs are updated every six months to reflect trends in an index of wholesale prices. The index is based on prices of forward contracts covering a 12 month period, averaged over the six months prior to the level of the cap being set. For gas, the price of quarterly contracts are used, weighted according to historic quarterly demand. For electricity, the price of summer and winter peak and baseload contracts are used, again weighted according to historic domestic demand, and based on the assumption that 70% of demand is at baseload, 30% at peak (ie 7am-7pm weekday).

5.32. This model has a number of advantages. It is transparent and not overly complex. By matching the hedging profile implied by the index, companies are able to reduce the risk that they incur wholesale costs above those allowed under the cap. Given this, our current expectation is that we would use a version of the existing model to set an allowance for wholesale costs, whether in the context of a bottom-up cost assessment, or to update any cap for trends in wholesale costs over time.

[11] 30 days' notice is required before suppliers are able to make changes to standard contracts, while fixed tariffs may have rates that are set for a year or more.

5.33. However, we will consider whether any changes to the index would be required, given the wider scope of the default tariff cap compared to the existing safeguard tariffs, and given that the model was designed to index the level of a cap, rather than set an absolute allowance for wholesale costs. The design issues we will consider (and would particularly welcome views on) include:

- **Shaping.** The amount of gas and electricity that households use varies significantly across time. Under the existing cap, part of this variation in demand is taken into account in the index via the use of seasonal / quarterly weightings, and the mixture of peak and baseload forward contracts used in the electricity index. However, this will capture only part of the within-year and within-day variation in demand that suppliers face. This raises the question as to whether the accuracy of the model could be improved by including greater account of the costs of shaping to customers' load profile – and whether it would be desirable to do so, given the resulting increase in complexity. One challenge here would be that products covering shorter time periods will often only become available closer to the point of delivery – and often only after the level of the cap has been set.

- **Transaction and trading costs.** As well as the costs of wholesale energy itself, suppliers will incur operating costs in relation to purchasing energy for their customers, including broker and exchange fees, the salaries of a trading team, and the costs of credit and collateral required to trade in wholesale markets. We will consider whether – in the context of a bottom-up approach to setting the level of the cap - these costs should be considered alongside other direct fuel costs, or as part of suppliers' wider operating costs.

- **Forecast error and imbalance.** Where they seek to purchase energy for delivery in each price cap period to match the index, suppliers will need to rely on forecasts of their customers' demand. Because of the inherent uncertainty relating to many of the factors influencing demand (including the weather), companies' view of expected demand will continue to change after the level of the cap has been set. This will drive them to continue to refine their position throughout the period up to delivery, at prevailing wholesale prices – which may differ from those observed when the level of the cap was set. Even after the point of gate closure, outturn demand may differ from suppliers' expectations, causing them to face imbalance charges. We will consider whether the model could be made to more accurately reflect the costs of suppliers by taking the additional risks associated with this uncertainty into account (for example, via the use of a recovery factor, or a generic allowance for forecast error). We will also consider the possible drawbacks of doing so, including in terms of the greater complexity involved.

- **Smoothing**. Under the existing cap, trends in wholesale prices are passed through twice a year, with the adjustments based on wholesale prices observed over the six month period prior to the level of the cap being set. Less frequent updates would imply a smaller number of adjustments to the cap, which would (on average) be larger. It would subject suppliers to a greater degree of volume risk, as to hedge at the price allowed under the model, they would be required to forecast volumes further into the future. On the other hand, adjustments that are more frequent would reduce this volume risk, but would involve greater administration on the part of us and the suppliers, and would imply greater variability in customers' prices.

- **Seasonality.** Related is the issue of how seasonal trends in wholesale prices are dealt with. Under the existing safeguard tariffs, the level of the cap is linked to the prices of forward contracts covering an annual period, starting at

the beginning of each price cap period. So, for example, the cap for the price cap period starting 1 April 2018 will be based on gas and electricity contracts covering the year 1 April 2018 to 31 March 2019. This has the advantage of protecting customers from seasonal trends in energy costs (in line with how suppliers' typically price their default tariffs). However, the mismatch between the annual period covered by the contracts used in the index and the six month price cap period may introduce an additional risk for suppliers.

- **Transition.** Many suppliers purchase a significant proportion of their customers' energy a long period in advance of delivery. This implies that some companies may have already purchased some energy for customers on default tariffs in 2019. Similarly, using the existing model to set a cap to be in place for the end of 2018 would involve indexing the cap to observations of wholesale prices *prior* to the design being formally confirmed in the final licence condition. We will consider any implications of this for the design of the cap.

- **Price data.** The existing caps use data from ICIS, a price assessment agency, to estimate the level of the market prices of different wholesale contracts. The prices used are estimates of end of day mid-points (ie simple average of bids and offers). We will consider what the most appropriate source of wholesale price data would be for a wider default tariff cap.

Environmental and social obligations

5.34. Energy suppliers are subject to a number of environmental and social obligations, the costs of which they pass on to their customers. This includes:

- The costs of policies supporting low carbon and renewable energy, including the renewable obligation, contracts for difference, and feed-in tariffs

- The costs of capacity market payments, designed to ensure security of supply (although typically in our work on supplier costs we consider this alongside other wholesale costs)

- The costs of delivering energy efficiency measures under the Energy Company Obligation (ECO) scheme

- The costs of WHD rebates paid to fuel poor customers

- The cost of assistance for areas with high electricity distribution costs (previously known as the 'Hydro benefit scheme') which aims to reduce electricity prices in areas of high distribution costs (currently Northern Scotland)

5.35. Note that we discuss obligations relating to the rollout of smart meters in the later section on operating costs, alongside metering costs more generally.

5.36. Under the existing safeguard tariffs, adjustments were made to the initial benchmark such that the level of the cap reflected the average costs of environmental and social obligations incurred by the large suppliers in 2015. The level of the cap is then updated over time using Office of Budget Responsibility (OBR) forecasts of the total costs of different schemes for electricity, and the consumer price index (CPI) for gas.

5.37. In general, the costs involved with these obligations are outside of suppliers' control. We therefore consider that historic information on average realised costs across the

industry is a reasonable approach to take to setting the initial level of the benchmark.

5.38. However, we note that suppliers do have some discretion around expenditure in certain areas - particularly in terms of how they meet their obligations under the ECO scheme, and the costs they incur in administering the various programmes. In the context of a bottom-up cost approach to setting the level of the cap, this raises the question of whether a benchmarking approach should be used to set this part of the allowance.

5.39. In terms of updating the level of the cap over time, in most cases the full costs of the schemes to suppliers are not known in advance, although forecasts are generally available or could be prepared (including the OBR figures used in the existing safeguard tariffs). As set out in our December document, the companies have raised a number of concerns about relying on the OBR forecasts to index policy costs (for example relating to the impact of changes to which consumers incur these costs). We will consider the issues raised in assessing the suitability of using the OBR figures to set update level of the default tariff cap over time, drawing on responses to the December consultation. We also invite any further comments in the context of a wider default tariff cap.

5.40. Ideally, costs would be recovered in the period in which they are incurred. This may not always be possible where there is uncertainty about what costs will be at the point when the cap is set. One possible way around this would be to use a correction factor to adjust the level of the price cap to reflect divergence in previous periods' allowance from the actual costs incurred across the industry (perhaps if the scale of the divergence reaches some materiality threshold).

5.41. Another design question is around how the introduction of new schemes, or fundamental changes to schemes, should be dealt with under the cap. We would expect this to require us to retain the option to revisit the approach to setting policy costs during the lifespan of the cap, in the event that supplier obligations were changed in a way that materially affected their costs.

Operating costs

5.42. We define operating costs as the costs a supplier itself incurs in retailing energy, distinct from those costs which it incurs directly on its customers' behalf (ie the cost of purchasing energy, the costs associated with government environmental and social obligations, and network charges). This includes expenditure associated with the core supplier functions of billing and metering (including the costs of the smart meter rollout), customer service, marketing and bad debt. It includes staff costs, and suppliers' IT and corporate overheads.

5.43. These costs are typically - although not exclusively - 'indirect', in that expenditures on services like call centres and billing systems are often shared across the customer base, rather than being attributable to any single account. The majority of these costs would be expected to fall into the 'indirect costs' line in the large companies' CSS.

5.44. Operating costs have historically varied significantly across suppliers. In its investigation, the CMA concluded that a significant degree of the variation is likely to be due to the inefficiency of some of the suppliers.

5.45. This raises the question of how the allowance for operating costs should be set, were a bottom up approach used to set the level of the default tariff cap, in particular given the requirement the Bill places on Ofgem to consider incentives on

suppliers to improve efficiency. There are a number of different possible benchmarking methods which could in principle be used.

5.46. During its investigation, the CMA carried out a detailed analysis of the large suppliers' indirect costs.[12] We will draw on this analysis in considering what approach should be taken to benchmarking operating costs, were a bottom-up approach used to set the level of the cap.

5.47. In its analysis, the CMA used as its efficient benchmark the cost base of the lower quartile large supplier (ie the lower quartile annual operating cost per customer, looking across the six large energy companies and the entire period 2007-2014). The CMA considered this benchmark to be conservative, given that one of the large suppliers had incurred costs significantly lower than this throughout the period. A description of the CMA's analysis is provided in Box 1.

BOX 1: **The CMA's indirect cost benchmarking**

As part of its investigation, the CMA collected information on the historic indirect costs of the six large suppliers for the period 2007 to 2014. It found that there were significant and persistent differences in indirect costs between suppliers, and that this was more likely to be indicative of inefficiency rather than differences in business models.

In order to estimate the extent of this inefficiency, it used as its benchmark the lower quartile cost base for the entire period 2007 – 2014 across the six large suppliers. It considered this to be a relatively conservative benchmark, given that at least one firm in the industry had significantly lower costs. Using this benchmark, the CMA estimated that the indirect costs of these companies exceeded the benchmark by around £2.3bn over the entire eight-year period, or an average of £290million per year.

Suppliers raised a number of concerns with the CMA's analysis, arguing that the differences were a result of companies being at different stages in investment cycles or having different customer or tariff mixes, rather than efficiency. However, the CMA's view was that this could not explain the degree of variation in indirect costs that had been observed. The data covered a significant period of time, such that differences in investment cycles should even out, and arguments around differences in customer mix did not accord with the evidence around which companies were relatively more and less efficient (for example, the company with the highest proportion of expensive to serve customers had costs below the benchmark).

The CMA also collected information on each company's operating costs, split between different categories of expenditure (metering, customer service, sales and marketing, bad debt, central services). However, it placed limited weight on these comparisons, acknowledging that comparing costs across these categories might not be reliable, as suppliers might have taken different approaches to allocating costs between them, and because higher costs in one category of costs could yield benefits in another.

Less detailed information on indirect costs was also collected from four mid-tier suppliers. This data was used as a further sense-check on the costs of the large suppliers, with the mid-tier suppliers (as a group) comparing relatively favourably against the six large suppliers in terms of their average indirect cost per customer.

5.48. As well as the CMA's analysis, we will also consider the approaches taken to setting an allowance for operating costs in other price control settings: including the approach used in Northern Ireland; the approach used to set price controls for the

[12] See Appendix 9.11 of the CMA's final report.

supply companies prior to market liberalisation in GB, and the approach used to set water companies' operating expenditure allowance.

5.49. In estimating the level of operating costs that could be allowed within the default tariff cap under a bottom-up approach, we will consider a range of different issues, including:

- **Which company (or set of companies) should be used as the benchmark**. Different combinations of companies could, in principle, be chosen as the 'frontier'. For example, this could include the lowest cost firm in the sample, the lower quartile, or the industry average.

- **From which sample should the benchmark be drawn.** The sample that the benchmark is drawn from could cover only the six largest firms, could include in addition some or all of the mid-tier suppliers, or could include large, mid-tier and smaller suppliers. It could cover a shorter or longer historical period. A wider sample will capture more of the variation in costs across the industry, but will raise greater issues around comparability (especially if businesses of much smaller scale were included).

- **How to control for different suppliers' customer profiles**. As a starting point, we would expect to carry out any benchmarking on a per customer account basis. However, there may be elements of the customer mix of a company that influence their operating costs. We will consider one of the main drivers of these differences in costs as part of our work on whether the level of the cap should vary depending on a customer's payment method. We will also consider whether there are additional customer characteristics which would be expected to affect companies' costs and which should be taken into account – and if so, how these factors might best be controlled for.

- **Level of granularity**. Generally, benchmarking of retail companies' operating costs has been carried out at the level of total indirect costs per customer, avoiding the challenges associated with allocating costs between categories, and accounting for the fact that different categories of cost are likely to be interrelated (eg with expenditure on metering potentially a substitute for expenditure on customer service). An alternative approach would be to benchmark individual elements of costs, which – although subject to the challenges above – might provide greater insight into what is driving differences between companies. A combination of the two approaches could be used, with different techniques used for different elements of costs.

5.50. We will also consider how any allowance for operating costs should be updated over time. Under the existing safeguard tariffs, the allowance for operating costs is uprated in line with CPI. However, a number of suppliers have flagged the impact of the smart meter rollout on their operating costs (a topic that is discussed in detail in our December consultation).

5.51. We will consider what recognition of these – or any other – trends in costs in the period covered by the price cap would be required when updating the level of the default tariff cap (including taking into account the cost savings that smart meters are expected to generate). In doing so, we will draw on responses to the December consultation, as well as any further submissions in the context of a wider default tariff cap.

5.52. We will also consider whether the cap should reflect a general expectation that companies should be getting more efficient over time - and if so, how this efficiency factor might be incorporated into the level of the cap.

Transportation costs

5.53. Part of suppliers' role is to collect the charges network companies levy in order to collect the costs of building, maintaining and operating the gas and electricity networks and infrastructure used to deliver energy to customers. These charges account for a material part of a household energy bill.

5.54. Under the existing safeguard tariffs, a model is used to calculate an estimate of these network charges, in £ per customer. It combines information on published charges with assumptions about load profiles to estimate the charges incurred in each region for a customer with a given level of consumption. It also estimates balancing services charges levied by the transmission system operator, National Grid.

5.55. In our view, basing this component of the cap on the network companies' charging statements provides a reliable way of estimating the scale of transportation costs for a given customer type. Given this, our current intention is to use the same methodology to calculate the allowance for network charges under the default tariff cap, although we welcome submissions on this.

Other direct costs

5.56. There may be other direct costs which suppliers incur, but that are not captured under any of the categories above. This could include:

- Charges from the Data Communications Company (DCC) to recover the costs it incurs in managing and operating the smart meter data and communications infrastructure

- The costs of funding Xoserve (the central data service provider for the gas market) and Elexon (the body responsible for administering balancing and settlement in the electricity market)

5.57. We will consider how these direct costs might best be incorporated when setting the level of the cap. In doing so we will have regard to the materiality of the different costs. Again, a key challenge if we do seek to reflect charges of this type in the cap is likely to be the extent to which information on the level of the charges are known at the time when the default tariff cap is set.

Return on capital

5.58. In a fully functioning competitive market, firms should earn a normal rate of return on capital employed in the business (ie a return in line with its cost of capital). While there may be short-term fluctuations in rates of return due to factors such as cyclicality, marketing initiatives, innovation or superior efficiency, firms in a competitive market should earn a normal rate of return, on average, in the long run.

5.59. Given this, we consider that the default tariff cap should include an element that would allow an efficient supplier to make a normal rate of return in the long run.

5.60. In setting the initial level of the existing safeguard tariff, the CMA adjusted its benchmark such that it was at a level that would have allowed the benchmark companies to make an EBIT margin of 1.25%. This was the margin that was estimated to give a large standalone energy supplier a level of profit in line with its efficient notional weighted average cost of capital (WACC), based on the business model of outsourcing its hedging function to a third party (ie using an intermediary trading arrangement). This pre-tax nominal WACC was estimated to be 10%, based

on evidence over the eight-year period from 2007 to 2014. This EBIT margin was also found to be in line with profit margins in other energy sectors and from previous GB regulatory determinations.

5.61. We will consider what rate of return should be allowed under the default tariff cap.