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Default Tariff Cap: Policy Consultation

Appendix 6 – Wholesale costs

Consultation - supplementary appendix

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Overview:

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

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

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

We are now consulting on how we might design and implement the default tariff cap. This supplementary appendix to the main consultation document sets out our proposals in relation to our approach for assessing and accounting for wholesale costs in the price cap, and updating these over time. This document is aimed at those who want an in-depth understanding of our proposals. Stakeholders wanting a more accessible overview should refer to the main consultation document.

Associated documents

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

Links to supplementary appendices

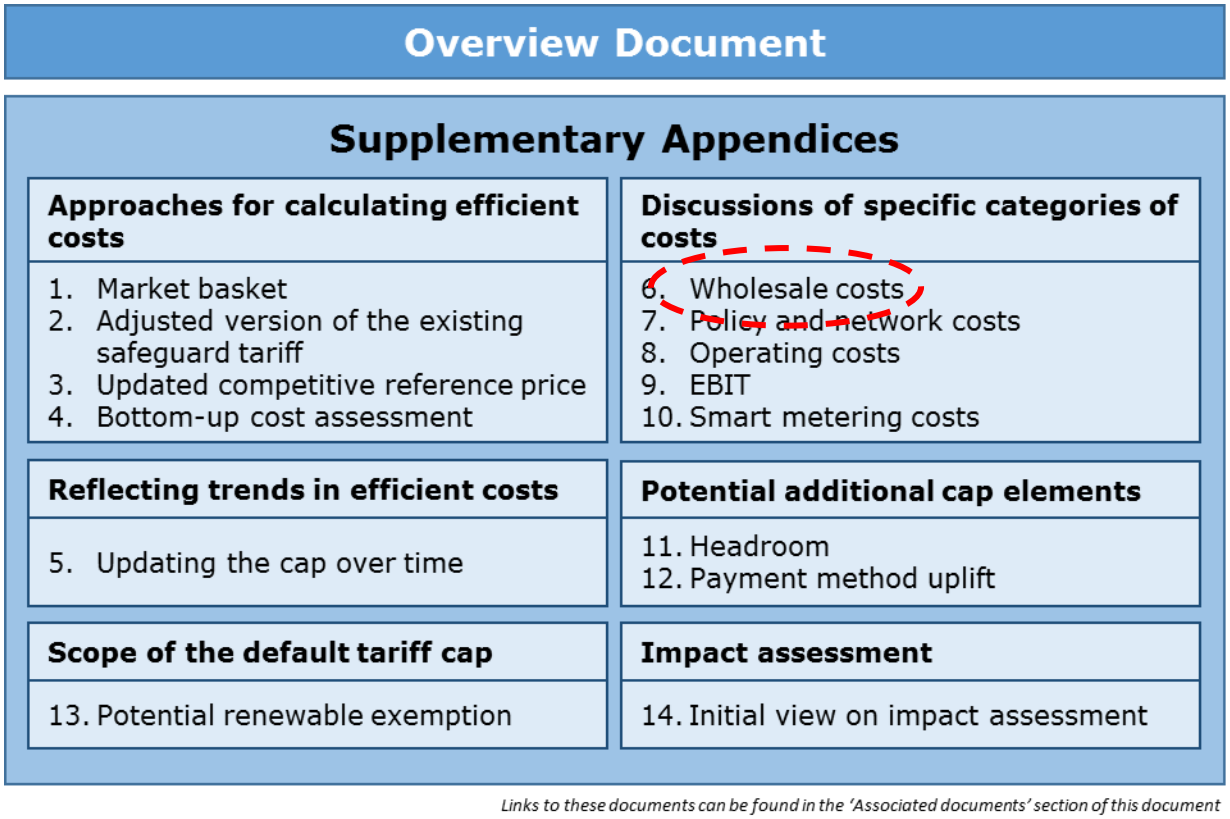
- Appendix 1 - Market basket: https://ofgem.gov.uk/system/files/docs/2018/05/appendix_1_-_market_basket.pdf
- Appendix 2 - Adjusted version of the existing safeguard tariff https://ofgem.gov.uk/system/files/docs/2018/05/appendix_2_-_adjusted_version_of_the_existing_safeguard_tariff.pdf
- Appendix 3 –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

Document map

This supplementary appendix to the main overview document sets out our approach for assessing and accounting for wholesale costs in the price cap, and updating these over time. We explain how the Competition and Markets Authority's CMA's model for analysing changes in wholesale costs works, how we would set the allowance for wholesale costs in the initial cap for each option, as well as how we propose to update the level of the cap over time. Finally, we describe our approach to different elements of a bottom-up cost assessment, and for updating the cap.

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

Figure 1: Default tariff cap – policy consultation document map



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

Contents

1. Overview

This chapter provides an overview of the document structure and content.

1.1. We update the existing safeguard tariffs to reflect trends in wholesale costs using a model that analyses changes in the prices of forward energy contracts.

1.2. We propose using a version of this model to help set the wholesale allowance included in the initial cap (when using a bottom-up approach), and to update the cap over time. The update approach is irrespective of whether we use a bottom up or reference price approach to set the initial level of the cap.

1.3. In this document:

- In Chapter 2, we explain how the CMA's model for analysing changes in wholesale costs works;
- In Chapter 3, we explain how we would set the allowance for wholesale costs in the initial cap for each of our three options for setting the cap;
- In Chapter 4, we explain how we propose to update the level of the cap to reflect trends in wholesale costs over time; and
- In Chapter 5, we describe our approach to different elements of a bottom up cost assessment, and for updating the cap. Here, we discuss adjustments to the CMA's model and our position towards specific allowances.

1.4. We consider the payments that suppliers make to fund the Capacity Market scheme are best categorised as wholesale costs. As such, under a bottom up approach, we would add the allowance for these costs to the allowance for direct fuel costs (the calculation of which we describe in this appendix) to derive the total allowance for wholesale costs. Given the nature of how the costs of this scheme are determined, we have described our proposed approach to estimating them alongside our discussion of other government schemes, in Appendix 7.

2. The CMA model

In this chapter, we describe the CMA's model for analysing changes in wholesale forward contacts. We use this model to update the existing safeguard tariffs.

Overview

2.1. We are proposing to use the model as our starting point when considering how to set the wholesale component of the default tariff cap if we pursue a bottom-up approach. This may be in conjunction with allowances for specific cost components that the model may not fully represent.

2.2. We are also proposing to use it when updating the default tariff cap to reflect trends over time. This is irrespective of whether we use a reference price or bottom up approach to set the initial level of the cap. Here we set out how the existing model works. Further details of the approach are available in the CMA's Final Report,[1] as well as the model published on our website.[2]

2.3. If using the model to set the level of the default tariff cap, we would consider some modifications. We discuss these in chapter 3 and 5.

How the model works

Analysing forward contracts

2.4. The model analyses daily market prices assessed by ICIS Energy, a Price Reporting Agency (PRA), for standard wholesale products traded ahead of delivery. These are for delivery in different quarter(s) and season(s) ahead. The exact products are different for gas and electricity. Details of the products and weightings are in Table A6.1 below.

[1] Energy market investigation: Final report
[2] https://www.ofgem.gov.uk/system/files/docs/2018/02/prepayment_price_cap_calculations_01_april_2018_v1.6_0.xlsxhttps://www.ofgem.gov.uk/system/files/docs/2018/02/prepayment_price_cap_calculations_01_april_2018_v1.6_0.xlsx

Table A6.1: Wholesale index weightings and products

Electricity

	Weighting		
Month	*S+1*	*S+2*	*S+3*
For price cap periods starting 1 October			
Feb	0	1	1
Mar	0	1	1
Apr	1	1	0
May	1	1	0
Jun	1	1	0
Jul	1	1	0

	Weighting		
Month	*S+1*	*S+2*	*S+3*
For price cap periods starting 1 April			
Aug	0	1	1
Sep	0	1	1
Oct	1	1	0
Nov	1	1	0
Dec	1	1	0
Jan	1	1	0

Gas

	Weighting					
Month	*Q+1*	*Q+2*	*Q+3*	*Q+4*	*Q+5*	*Q+6*
For price cap periods starting 1 October						
Feb	0	0	1	1	1	1
Mar	0	0	1	1	1	1
Apr	0	1	1	1	1	0
May	0	1	1	1	1	0
Jun	0	1	1	1	1	0
Jul	1	1	1	1	0	0

	Weighting					
Month	*Q+1*	*Q+2*	*Q+3*	*Q+4*	*Q+5*	*Q+6*
For price cap periods starting 1 April						
Aug	0	0	1	1	1	1
Sep	0	0	1	1	1	1
Oct	0	1	1	1	1	0
Nov	0	1	1	1	1	0
Dec	0	1	1	1	1	0
Jan	1	1	1	1	0	0

Source: The CMA's "Energy market investigation: Final report"
Notes: Q+1, Q+2 etc relate to contracts for delivery in the next quarter, the quarter after that, etc. S+1, S+2 etc relate to contracts delivery in the next season, the season after that, etc.

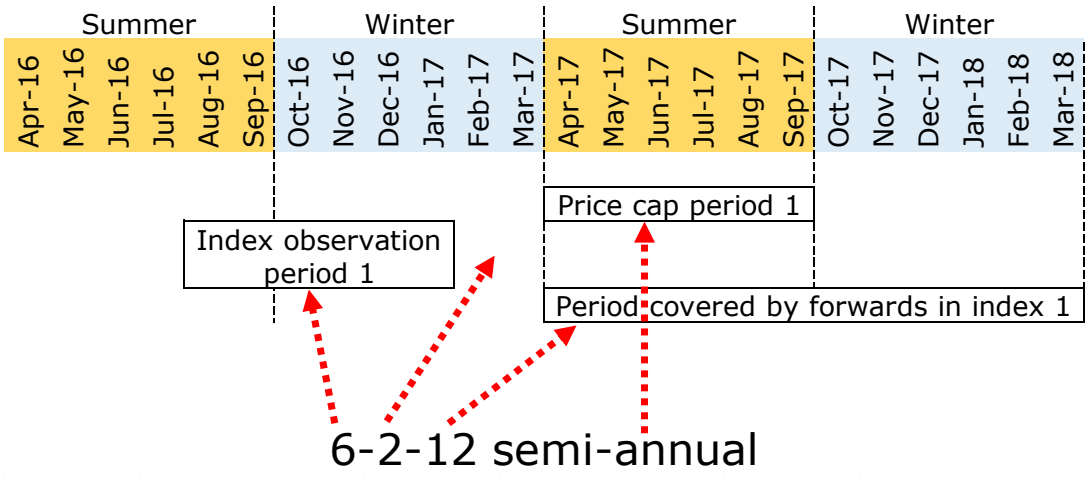
2.5. The model produces an average price based on an observation period and a forward delivery period:

- **The observation period**: the model takes an average of the values of the forward contacts in each day of the observation period.
- **The forward delivery period**: the model observes prices of contracts for delivery in a particular period in the future.

2.6. The CMA model is a 6-2-12 semi-annual model. Below we describe and illustrate (in Figure A6.2) the dates used if the cap started on 1 April 2017:

- **A 6-month observation period**: The wholesale index will be the average of daily index values observed in the six months between 1 August 2016 and 31 January 2017.
- **A 2-month lag**: The observation period ends 2 months before the cap is introduced, meaning it will end on 31 January 2017, and the lag will run from 1 February to 31 March 2017.
- **A 12-month forward view**: The model observes contracts for delivery in the 12-month period from 1 April 2017 up to the end of March 2018.
- **Semi-annual**: The cap is updated twice a year, running from April to September and October to March. A new value of the index, based on a different observation period and a different forward view, is therefore calculated on a semi-annual basis.

Figure A6.2: 6-2-12 pricing-in period with semi-annual price cap



Source: CMA, Ofgem

3. Setting the initial wholesale allowance

In this chapter, we explain how we propose to set the wholesale allowance included in the initial cap. We discuss each of our options for setting the cap.

Overview

3.1. Below we outline our options for setting the initial cap:

- **option 1:** An adjusted version of the existing safeguard tariff;
- **option 2:** An updated competitive reference price; and
- **option 3:** A bottom-up cost assessment.

3.2. For each option, we consider how the approach accounts for different components of the wholesale cost:

- energy;
- smoothing and seasonality;
- initial shaping - base and peakload;
- forecast error and imbalance;
- shaping[3]; and
- transaction costs.

The challenge

3.3. Setting the benchmark for wholesale costs will be challenging under any of the three approaches. Reported wholesale costs vary significantly between suppliers depending on the approach they have taken to purchasing their energy (and in particular, how far in advance they have hedged), meaning that it is difficult to estimate what an efficient level of wholesale costs in a given baseline period would

[3] This issue relates to the cost of buying additional 'granular' energy products to meet demand load profiles that cannot accurately be met using standard hedging products alone.

have been for a given strategy. This challenge is heightened because wholesale costs are likely to represent the largest proportion of the efficient benchmark.

3.4. Using a price reference model (Options 1 and 2 above) avoids the issue of considering wholesale costs independently because the price benchmark already includes all of the expected wholesale costs, as reflected in competitive prices. Therefore, the price benchmark just needs updating (indexed) over time to reflect changes in wholesale prices.

3.5. For a bottom-up approach (Option 3 above), we need to consider all types of wholesale costs independently. We believe we can estimate the majority of these costs for a given approach to purchasing wholesale energy by assessing the price of forward wholesale contracts (peak and baseload for electricity). Suppliers also face additional costs that need to be incorporated (eg shaping, imbalance and transaction costs). This is a challenging exercise in its own right, and some of the costs may vary between small and large suppliers.

If using an adjusted version of the existing safeguard tariff

3.6. If we were to use this approach to estimate the efficient costs of supply, we do not propose any adjustment to the reference price with respect to wholesale costs.

3.7. Under an adjusted version of the existing safeguard tariff, the level of the cap would be based on the wholesale costs reflected in the prices of Ovo and First Utility in 2015. To calculate the updated level of the cap under this approach, we would set the base period at 2015, and update the wholesale allowance using the approach described in the next section of this document. We would expect this to capture most of the changes in wholesale costs.

3.8. We assume that the reference price captures all relevant wholesale costs. In pricing their tariffs, we have no reason to suspect that the benchmark suppliers excluded relevant costs. They would have taken into account their energy costs, shaping needs, risk of imbalance and forecast error, and transaction costs.

3.9. A number of stakeholders have highlighted concerns that the hedging strategies of specific suppliers may unduly influence the reference price and produce extremes. We discuss this (in relation to the updated competitive reference price approach) in Appendix 3.

3.10. We acknowledge concerns that a reference price based on 2015 data may not reflect changes to the wholesale market that have occurred since then. This could, in principle, lead to the allowance within the cap diverging from an efficient level of wholesale costs (where these changes have had an impact on wholesale costs that are not captured in the prices of the forward contracts included within the CMA's model). For instance, the benchmark may not fully reflect changes to the electricity cash-out arrangements that may have led to increases in the costs of forecast error.

Physical aspects of the market have also evolved, such as increases in solar generation that have also affected transmission demand profiles.

3.11. It is not clear how we could make any adjustments for these issues. It is likely to be challenging to adjust the 2015 CMA reference price to reflect potential changes in wholesale costs due to the way individual costs are spread and interact within the reference price.

3.12. Furthermore, it is not clear whether we should make any adjustments. The interaction with other reforms and wholesale prices is uncertain. Cash-out reforms, for example, alter suppliers' imbalance costs but also increase incentives for them to balance accurately. Therefore, there may not necessarily be a large impact from the change on costs and we do not see a reason to expect trends in these costs to have materially departed from the overall trend in forward prices since 2015 captured by the index.

3.13. If we chose the adjusted version of the existing safeguard tariff, we do not propose adjusting the benchmark for additional (or reduced) wholesale costs.

If using an updated competitive reference price

3.14. As with the existing safeguard tariff, we do not propose adjusting the reference price for wholesale costs. Unlike the existing safeguard the tariff, the updated competitive reference price would use price data from 2017. This would be the base period that we use to update the level of the cap from.

3.15. We do not propose making specific allowances for different types of wholesale costs. We assume that the reference price captures all relevant wholesale costs.

If using a bottom-up cost assessment

Overview

3.16. If we were to set the cap using a bottom-up approach, we would need to set an allowance for each component of wholesale costs. The majority of wholesale costs are direct energy costs, ie the cost of buying energy to sell to customers. We propose to set the energy component for a bottom-up cost assessment using a version of the CMA's model (described in Chapter 2). We discuss and consider potential changes to that model in Chapter 5.

3.17. We believe the CMA's model provides a sensible method for assessing these costs, and using this would create consistency between how the initial level of the cap is set, and how we update it. We also believe that the contracts used in this capture the broad costs that suppliers face in purchasing energy (although may not capture all of the wholesale costs faced by a supplier). We discuss specific elements of this model, our approach and where we propose to consider specific allowances in Chapter 5 of this this appendix.

Purchasing energy

3.18. The majority of wholesale costs are direct costs of purchasing energy in advance, meaning the cost of buying the energy suppliers sell to customers. Suppliers purchase much of this energy in advance to help manage their risk. Suppliers' base their purchasing strategy on their forecasts of customer demand and expectations of trends in wholesale prices. They then make adjustments closer to the period of delivery to reflect updates to those forecasts.

3.19. We propose using a version of the CMA model to calculate an implied cost of gas and electricity. The allowance for the baseline period would be set based on a backwards looking estimate of the level of the cap for 2017. Specifically, we propose to take the model as published February 2017. That is to set the baseline allowance with reference to the cost estimates for gas and electricity (£/MWh), based on a six-month observation period from August 2016 – January 2017, of contracts for delivery April 2017 – March 2018 (12 months).

3.20. The final model and approach will be subject to potential adjustments. We outline our proposals on specific elements in Chapter 5. This energy cost will then form the basis of the wholesale component cap. We then propose assessing the requirement and value of additional specific allowances to complete the baseline value (see Chapter 5). We would then index this for the initial cap period.

3.21. We intend to use a version of the CMA's model to estimate energy costs. As part of this approach, we plan to review the following components of the model:

- smoothing and seasonality;
- initial shaping - base and peakload; and
- Price data.

3.22. This model is essentially the same as the one that we plan to use for updating the cap regardless of how baseline for wholesale are set. We will therefore look to include necessary or preferred amendments that we identify whilst assessing the bottom-up approach.

3.23. We acknowledge the CMA's model may not capture all the costs faced by suppliers. For instance, the potential costs of imbalance and forecast error, and shaping costs would not be included in quarterly or seasonal forward products. There can be upside and downside risks associated with these, but we expect them to be costs for suppliers (on average). To address this issue, we propose some allowances to cover the costs of activities that the model does not capture. These are only relevant if we use a bottom-up approach to set the wholesale allowance. These are:

- forecast error and imbalance;

- shaping; and
- transaction costs.

3.24. We discuss our approach to these wholesale elements in Chapter 5 of this appendix.

QA6.1: Do you agree with our approach to setting the wholesale allowance? In particular using 2015 for the base period of the adjusted existing safeguard tariff approach.

4. Updating the allowance

This chapter outlines our proposals for updating the wholesale element of the cap over time.

Overview

4.1. We will have to update the wholesale allowance over time as wholesale market prices change.

4.2. As set out in Appendix 5, we intend to update wholesale costs using exogenous cost data and indices. This is similar to the approach taken with the existing safeguard tariff, using the model set out in Chapter 2 of this appendix.

4.3. We intend to use this approach to updating the cap, regardless of how we choose to set the initial cap. The only difference will be the base periods from which the initial cap is updated (described above for each option) and how the weight of the wholesale component is calculated under the reference price approaches (considered in Appendices 2 and 3, respectively).

The challenge

4.4. Regardless of the method used for setting the initial level of the cap, there are specific challenges associated with updating it over time. Suppliers have strong incentives to follow a buying strategy that matches the index we choose. This is to reduce their exposure and risk from being away from the costs used to calculate the level of the cap.

4.5. In the CMA's prepayment meter cap (PPM cap), we update the wholesale costs in line with the costs of forward contracts up to 12 months ahead. The level of the cap is updated every six months. To follow this buying strategy, suppliers will need to buy products that are delivered outside the price cap-setting period (ie for the six months covered by the next cap period). However, this will expose suppliers to risk because the products they have bought during the first price cap are delivered in the next cap period but the price at which they bought them will not be factored into the cap for that period.

The model for updating wholesale costs

Frequency of updates

4.6. We propose updating the cap every six months (semi-annual). The Bill requires that we update the cap at least every six months. We have considered shorter periods. Suppliers' current pricing strategies suggest that consumers value price

stability. We welcome stakeholders' view on whether there is reason to update the cap more frequently, introducing greater volatility for consumers.

4.7. For more details about updating the cap as a whole, please see Appendix 5. Please see *Smoothing and Seasonality* section in Chapter 5 of this appendix for more details.

Modelling approach

4.8. As discussed above, we propose updating the cap based on the 6-2-12 semi-annual model, as used to update the existing safeguard tariffs. Stakeholders have raised particular concerns about this model, because updates expose them to wholesale price risk. The model introduces this because it analyses wholesale prices for delivery over a 12-month period, but sets the cap for a six-month period. This exposes suppliers to risk between price caps if they follow that hedging strategy.

4.9. We have also considered lengthening the cap period to 12 months for the wholesale element. In line with the Bill, we would review this every six months, but the expectation is that we would update the wholesale allowance every 12 months. However, we are concerned this option creates a different risk for suppliers, and increases the magnitude of price changes for consumers. We discuss this issue further between paragraphs 5.5 and 5.13 (below).

4.10. It is likely that the first price cap period will cover an irregular period. Please see *Updating the cap – Transition* in Chapter 5 for more details.

QA6.2: Do you agree with our approach to updating the wholesale allowance?

5. Adjusting the CMA's model and setting allowances – bottom-up and update approaches

In this chapter, we outline our proposed adjustments to the CMA's model, discuss potential allowances we could make for a bottom-up approach, and we outline how we plan to transition to the new arrangements.

Overview

5.1. As we have already highlighted in this appendix, the CMA's existing wholesale model will form the basis of our approach. If we were to set the cap using a bottom-up cost assessment, we would use it to assess the majority of the costs (eg energy costs) and set an over-arching approach (eg hedging strategy). We may then set an allowance for costs that the model may not adequately cover. Regardless of how we choose to set the initial cap, we intend to update wholesale costs using exogenous cost data and indices. This will be through the CMA's model and the update process described in Chapter 2.

5.2. In this section, we discuss potential adjustments to the CMA's existing model. These proposed adjustments are relevant to both a bottom-up cost assessment (if we choose to go down that route), as well as the updates. These are:

- smoothing and seasonality;
- initial shaping - base and peakload; and
- Price data.

5.3. We then discuss elements that may need a specific allowance if we were to set the cap using a bottom-up approach, as the model alone may not fully cover these costs. These are:

- forecast error and imbalance;
- shaping; and
- transaction costs.

5.4. Finally, we address whether any different approaches are required for the initial period of the default tariff cap (the transition).

Bottom-up and updates – Adjusting the CMA's model

Smoothing and seasonality

5.5. We consider smoothing and seasonality two separate issues. However, they are inherently linked as the hedging approach in the CMA's PPM tariff indexation model produces the approach (ie 6-2-12 semi-annual).

5.6. Smoothing relates to the variability between each update of the wholesale costs in the cap and how frequently this element is updated. The 'smoothness' is linked to the semi-annual part of the model. The more often the cap is updated, the smaller the changes should be (on average), and the less variable ('smoother') the cost changes should be.

5.7. Seasonality relates to whether seasonal variability is introduced into the cap, and is linked to the forward view length. The current 12-month forward view takes in one summer and winter season at any point and should not be subject to seasonal variability.

5.8. If we were to set the wholesale allowance using a bottom-up approach, we propose setting the allowance based on observations of energy prices using the 6-2-12 semi-annual model, currently used to update the existing safeguard tariffs (described in Chapter 2). The baseline would therefore relate to the period April 2017 – September 2017, as described in *If using a bottom-up cost assessment* in Chapter 3 of this appendix.

5.9. The advantage of this approach is that suppliers already have familiarity with it in the case of the PPM cap updates, reducing uncertainty around this process. This could also provide suppliers with more clarity around how the majority of the direct energy costs may be calculated.

5.10. Stakeholders have raised concerns that the 6-2-12 semi-annual model prevents them from being able to fully hedge against price changes, exposing them to risk. This is more of a problem for the updates rather than the initial setting of the allowance, but we would ideally align the initial setting and updates. This is because the level of the default tariff cap in any single six-month price cap period is based on prices for a 12-month delivery period. To follow it, suppliers then have to buy products outside of the cap period. The price they purchased these at will not be used to assess the allowance for the following cap period. Alternatively, they may choose not to closely follow the hedge.

5.11. We do not currently propose changing the approach. We recognise that continuing with this model does not address those risks, but alternatives are not without their own risks. We will continue to assess the impact and viability of using two other options:

- a 6-2-6 semi-annual model (observing prices for delivery in a six-month period that matches the delivery period of the cap); and

- a 6-2-12 annual model (observing prices in a 12-month delivery period, and reflecting that annual delivery period in the cap).

5.12. We are concerned that the shorter period may have unintended consequences for the wholesale market. Suppliers have indicated they are likely to follow the hedge to reduce risk. If they do this for a 'shorter' period, they may reduce their trading activities on products that are delivered after the price cap period. This shorter position could damage wholesale liquidity[4] for later-dated contracts. We are also concerned that this approach would lead to high winter prices and low summer prices for consumers. We note that suppliers currently price tariffs to avoid seasonal changes.

5.13. We are concerned that the longer period may introduce a different risk, increasing the probability that demand departs from original forecasts (a supplier seeking to hedge against the index would be required to forecast the energy required 8 to 14 months, rather than 2 to 8 months in advance). We are also concerned that the approach leads to much greater changes between updates. It may also be more difficult for smaller suppliers to hedge if they aim to follow this position (eg greater collateral requirements).

Question A6.3: Do you agree with our proposed approach to use a semi-annual cap period, compared with a 6-2-12 annual model, or shorter observation period? Please explain how the alternatives would affect you, if we were to choose those options instead.

Initial shaping – Base and peakload

5.14. For electricity, the model used to update the existing safeguard tariff uses a mixture of baseload contracts (ie electricity delivered continuously throughout the week) and contracts for delivery in peak periods (ie Monday – Friday, 07:00 to 19:00). In considering how we would set the allowance for wholesale costs under the default tariff cap, the options we have considered are:

- a 70/30 split between baseload and peakload, as currently used in the model to update the existing safeguard tariff;

- a baseload and peakload split, using different proportions; and

- shaping based on products relating to other delivery periods, potentially more 'granular'.

[4] Liquidity is a measure of the ability to buy or sell a product, such as gas or electricity, without causing a major change in its price and without incurring significant transaction costs.

5.15. Well before delivery, suppliers will begin to buy their 'initial shape' through peakload and baseload contracts. This broadly takes into account that higher customer demand between 07:00 and 19:00, but does not take into account the variations within that. More granular energy products are used for this (ie intraday period smaller than the peakload contract) but are sometimes not readily available months ahead of delivery. Suppliers look to acquire granular 'shaping' products closer to delivery.

5.16. We propose to set the wholesale cost allowance using data on the prices of both baseload and peakload contracts, and continuing with the current ratio.

5.17. We do not propose using specific wholesale shaping products in the model to assess baseline costs. We do not think these products have comparable availability and liquidity to baseload and peakload contracts to account for them in the same way. This could place additional hedging risk on suppliers if they are unable to buy them. Another problem with this approach is the changing energy system, such as the impact of solar generation. The weather, and output from solar generation, on a given day can lead to the timing of peak demand changing between morning and evening in the summer. This makes it difficult to pick a specific product for inclusion.

5.18. One stakeholder indicated an alternative ratio may be more appropriate, but we would require more evidence that the current ratio is inappropriate. Two others noted that it is likely to be a reasonable starting position, but a simplified peakload contract alone will not capture all the costs. We will continue to assess this and welcome evidence for alternative proportions.

5.19. We are aware of the impact the changing energy system is having on the price differentials between baseload and peakload contracts, particularly in the summer. We have seen evidence of solar generation depressing peakload prices, and potentially damaging the usefulness of this product to build shape. To combat this, suppliers may buy shaping products, which can be priced at a notable premium to the peakload contract.

5.20. Increasing the peakload share in the ratio could compensate for additional costs such as these. However, there is also a risk of over compensation as this will be set all year round. It is not obvious whether a change in ratio would help us calculate a more accurate level, or what that ratio would be. To change this, we would require more evidence on the requirement, as well as what the level of peakload should be.

5.21. We acknowledge that simply using baseload/peakload does not reflect all of suppliers' wholesale activities. We discuss how we might include additional costs of granular shaping, imbalance and forecast error below, when considering if there is any need for an additional wholesale allowance.

QA6.4: Do you agree with our approach to modelling forward contracts? In particular: that initial shaping should be based on a 70-30 spilt between baseload and peakload, and the cap will be semi-annual. If not, please provide evidence to support alternative approaches.

Price data

5.22. We need pricing data to assess the direct cost of energy (eg the value of forward contracts). The model used to update the existing safeguard tariffs uses the mid-point of assessed prices from ICIS Energy. There is a competitive market for this information and it is available to the market (at a fee).

5.23. We propose continuing with the current approach, using the same data provider. This consistency should mean the majority of the market already has access to the data as it used for the existing safeguard tariffs, and will continue to be used for this activity. We note the source continues to be trusted and widely used throughout the industry.

5.24. Most responses to our working paper 1 on setting the default tariff level[5] did not discuss this point in detail. One stakeholder raised concerns around capturing intraday price movements and whether there is enough volume/liquidity for the end of day price assessments. While we are aware there can be large intraday movements in prices, we believe the current data provider provides robust prices. Moving away from the PRAs price assessment may make the price assessments unduly complicated.

5.25. We propose to continue using the midpoint of the bids and offers as the price level. Two stakeholders raised concerns with using the midpoint. They noted that non-vertically integrated suppliers bought energy closer to the offer (sell) price than the midpoint. While we recognise the factors that may result in this behaviour, we would require more evidence of the size of this trend and materiality of the difference between approaches to consider changing the approach. We also believe the price suppliers pay to be more nuanced and may change depending on the market direction at the time. Finally, using the midpoint will provide consistency between the different tariff caps.

Bottom-up allowances

Allowing for additional costs

5.26. We recognise that our proposal, if using a bottom-up cost approach, does not yet account for some additional costs associated with purchasing energy. Specifically, forecast error and imbalance, shaping and transaction costs.

[5] Working paper 1 - setting the default tariff cap: https://www.ofgem.gov.uk/publications-and-updates/default-tariff-cap-working-paper-setting-level-cap

5.27. We have yet to reach a conclusion on how we would treat these factors when setting the initial level of the cap under a bottom-up approach, but are considering the following options:

- make no additional allowance, as the costs are relatively minor;
- include an additional wholesale allowance; and
- make no formal allowance, but consider the additional risk as part of headroom.

5.28. The challenge with setting an allowance is that we cannot easily observe the efficient level of costs. We can assess realised costs through historical data. However, the costs of these activities may vary with market conditions, and there may be upsides and downsides for suppliers. We are interested in the long-run efficient cost of these activities but will also have to make a judgement on how much risks and cost we allow a supplier to recover.

Forecast error and imbalance

5.29. There is inherent uncertainty in predicting customers' future demand, and therefore in buying the correct amount of energy for this. Customer demand varies throughout the year, month and across the day. Suppliers usually 'fine tune' their energy requirements closer to delivery to better match changes in their customers' demand. We do not expect suppliers to forecast demand with 100% accuracy, but there is likely to be varying levels of forecast accuracy in the market.

5.30. If suppliers are short, they may incur energy costs that fall outside of the direct costs of forward wholesale products. If they are long, they will receive a payment that could be different to forward wholesale prices. This means there is upside and downside risk for suppliers depending on market conditions.

5.31. Multiple stakeholders indicated in their responses to our working paper 1 that they consider this an important factor, and on balance an important net cost. One stakeholder stated that deviations from forecasts, and therefore the biggest levels of imbalance, are usually associated with variations in price. This indicates the risk here is asymmetrical, with potentially larger risks at times of system stress and price spikes. There was some support for an allowance arrangement from stakeholders. This was based on the complexity associated with a cost recovery mechanism, and the costs not being known until after the event.

5.32. To assess the impact we will analyse historical imbalance trends. This will include aspects such as the proportion of imbalance and the associated cost. We will also aim to assess long-run trends as well as the impact of low frequency/high impact market events (eg wholesale market price spikes). We will also attempt to take into account future changes to these that will be in place for the period the cap

covers, but may not be well represented/represented at all in historical data (eg unidentified gas or the change from PAR50 to PAR1).

5.33. This allowance interacts with shaping (see below). A supplier should theoretically be less exposed to imbalance pricing if they are more active on shaping, and vice versa.

Shaping

5.34. This issue relates to the cost of buying additional 'granular' energy products to meet demand load profiles that cannot accurately be met using standard hedging products alone. It could be intraday, weekly, monthly or seasonal shaping. Here we focus on intraday wholesale electricity. Suppliers usually purchase more granular electricity products closer to delivery to match changes in customers' demand throughout the day. For example, these products may only deliver during evening peak. The CMA's existing index model uses forward baseload and peakload products, but does not specifically include the cost of these shaping products.

5.35. While the existing approach to the baseload and peakload contracts may account for the cost of shaping to some extent, it may not fully capture it. Some stakeholders held this view. Stakeholders also highlighted concerns with the approach to shaping in CMA's PPM tariff cap. These concerns were mainly around the extent shaping costs are accounted for.

5.36. We may therefore consider a shaping allowance within the initial value of the cap under a bottom-up approach. This allowance will aim to reflect any additional costs of shaping beyond those captured within the products included in the CMA model (quarterly/seasonal, peak/baseload) if we are provided with more evidence that this approach does not adequately cover the cost of this activity.

5.37. The changing energy system (eg increasing solar generation) may also lead to a greater reliance on, and increased value of, shaping products. In summer, solar generation typically out-turns during the period the peakload contract delivers and suppresses transmission demand. It may move peak demand outside of 07:00 to 19:00 (peakload contract delivery) meaning another contract is needed to meet peak demand. It may simultaneously depress peakload prices. This may mean the peakload contract is underrepresenting costs while suppliers are simultaneously incurring higher costs by buying shaping products at a premium to these. One stakeholder raised concerns about this issue.

Transaction costs

5.38. We need to consider how the non-energy costs should be included alongside the direct wholesale costs. Non-energy costs include broker and exchange fees, the cost of operating a trading desk, and the cost of credit and collateral. Although some of these may be better covered in other areas of the price cap.

5.39. We are concerned that the level and materiality of these costs may differ substantially for different types of supplier. Some suppliers will include (relatively) high costs to access the market, such as broker and exchange fees. Whereas, the structure and size of other suppliers may reduce their credit and collateral costs. There could also be economies of scale for some of these functions.

5.40. The challenge here is that a low allowance may disadvantage a particular type of supply arrangement, whereas a high allowance may allow them to compete but overestimate the costs for other suppliers. This an issue we are considering assessing in the round when looking at headroom and whether there is sufficient space for different operating models.

5.41. To assess the impact, we propose analysing historical costs of items such as broker and exchange fees, costs of setting up and maintaining a trading desk and credit/collateral costs. We will also consider the extent to which any of these costs are captured within the allowance for operating costs that we calculate (see Appendix 8). We welcome stakeholders' views on the impact these non-energy costs have on their overall wholesale costs.

QA6.5: What are your views on the necessity and size of an additional allowance for shaping and imbalance costs? Please provide evidence to support this.

QA6.6: What are your views on the necessity and size of an additional allowance for transaction costs relating to brokers and collateral?

Updating the cap - Transition

5.42. As part of the process of setting the initial cap, we need to choose a mechanism to transition from the existing market arrangement to one with a default tariff price cap. We recognise there is inherent risk in that transition whatever approach we take.

5.43. The first price cap period is very likely to start in December 2018. This will make it 'irregular' and shorter compared to a normal cap period. Consequently, the model we use to set the cap level will differ from the description in Chapter 2 of this appendix.

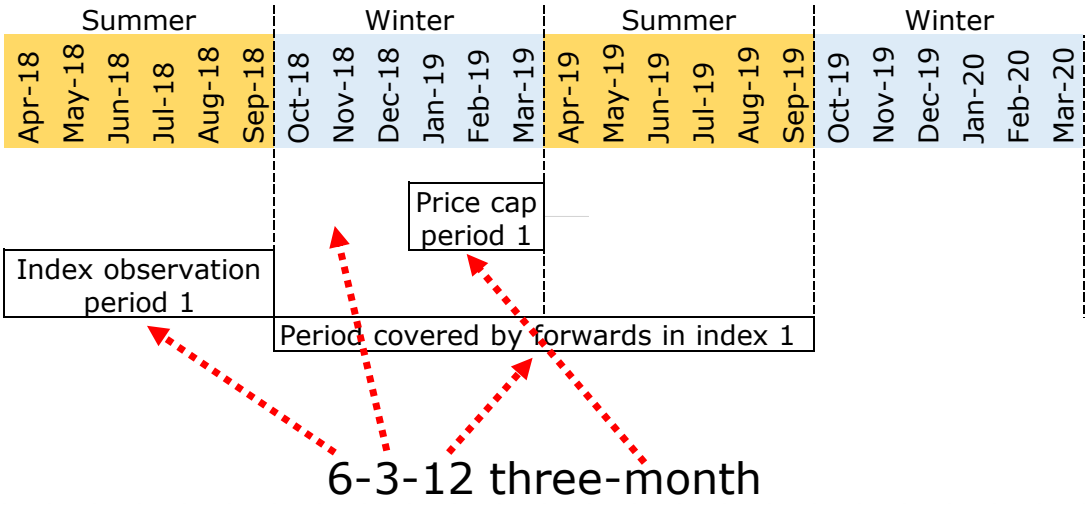
5.44. We propose using a version of the CMA's model that will involve mainly using historic wholesale prices in the observation period, but will also include some observations for days that have not yet passed.

5.45. Specifically, we propose a '6-3-12 three-month' model, where the 12-month forward view starts in October 2018 covering winter and summer contracts as normal, but the six month observation period starts in April 2018, and the price cap period is shorter than usual. Figure A6.3 shows an illustrative example, using the 1

January 2019 as the start of the cap – note we expect the cap to come into force in December.

- **Observation period:** The six-month observation period would be from 1 April 2018 to 30 September 2018.
- **Lag period:** The lag period will start on 1 October 2018, and last until the cap comes into force (in this worked example, 1 January 2019).
- **Forward view:** The 12-month forward view will be from 1 October 2018 to 30 September 2019.
- **Cap period:** This will start after the forward view, in this example on the 1 January 2019 for three months. This will not match the start date of the cap in order to equally represent the two forward seasons in the costs.

Figure A6.3: Illustrative 6-3-12 transition period with three-month price cap



Source: CMA, Ofgem

5.46. We assessed a 6-2-12 semi-annual model that did not use historic prices. However, this would preclude the protection being in place for this winter – delaying protection for consumers, the objective of the Bill.

5.47. We also assessed adjusting the CMA's model to have shorter observation and/or lag times to allow the initial indexation to use only prices in the future. For instance using a two-month observation period in August and September 2018. We believe this is an unattractive option. In particular:

- this observation period is very short. We believe the risk of a short observation period is too great, as it is more susceptible to short-term market trends and volatility. For suppliers that have bought much of

their energy in advance, this will potentially have upside and downside risks depending on the direction of market movements (ie the cap could be set too high or low). Some suppliers have also indicated to us that they will follow the hedge. With a short observation period, this could increase demand for products used in the model's hedge, prices observed in this period, and the risk of volatility for other products. A shorter observation period would also reduce 'smoothing' of the wholesale costs between caps; and

- the relevant licence condition will not be published until 1 October, meaning that even under this approach, any hedging positions would be taken before the licence conditions come into effect.

5.48. Some of the potential risks we have highlighted around increased market activity may still be present with our proposed approach. Suppliers may attempt to adjust their position to the hedge once this approach is conformed. However, we think the volumes involved are likely to be smaller.

5.49. In stakeholders' responses to our working paper 1, they commented on the hedging risk presented by setting the initial level of the cap using historical wholesale contracts. This approach does not allow suppliers to follow (if they choose to do so) the hedge outlined in the index model, as the contracts have already traded.

5.50. We anticipate that some suppliers have already bought large amounts of energy for the initial cap period. As a result, there may be little opportunity for suppliers to follow the hedge.

QA6.7: Do you agree that our approach to updating the benchmark for the first cap period is appropriate?

6. Consultation response and questions

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

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

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

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

Chapter 3 - Setting the initial wholesale allowance

Question A6.1: Do you agree with our approach to setting the wholesale allowance? In particular using 2015 for the base period of the adjusted existing safeguard tariff approach.

Chapter 4 - Updating the allowance

Question A6.2: Do you agree with our approach to updating the wholesale allowance?

Chapter 5 - Adjusting the CMA's model and setting allowances - Bottom up and update approaches

Question A6.3: Do you agree with our proposed approach to use a semi-annual cap period, compared with a 6-2-12 annual model, or shorter observation period? Please explain how the alternatives would affect you, if we were to choose those options instead.

Question A6.4: Do you agree with our approach to modelling forward contracts? In particular: that initial shaping should be based on a 70-30 spilt between baseload and peakload, and the cap will be semi-annual. If not, please provide evidence to support alternative approaches.

Question A6.5: What are your views on the necessity and size of an additional allowance for shaping and imbalance costs? Please provide evidence to support this.

Question A6.6: What are your views on the necessity and size of an additional allowance for transaction costs relating to brokers and collateral?

Question A6.7: Do you agree that our approach to updating the benchmark for the first cap period is appropriate?