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Default Tariff Cap: Policy Consultation

Appendix 7 - Policy and network 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 estimating the policy costs (ie the costs associated with suppliers' environmental and social obligations) and network charges that suppliers face. 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

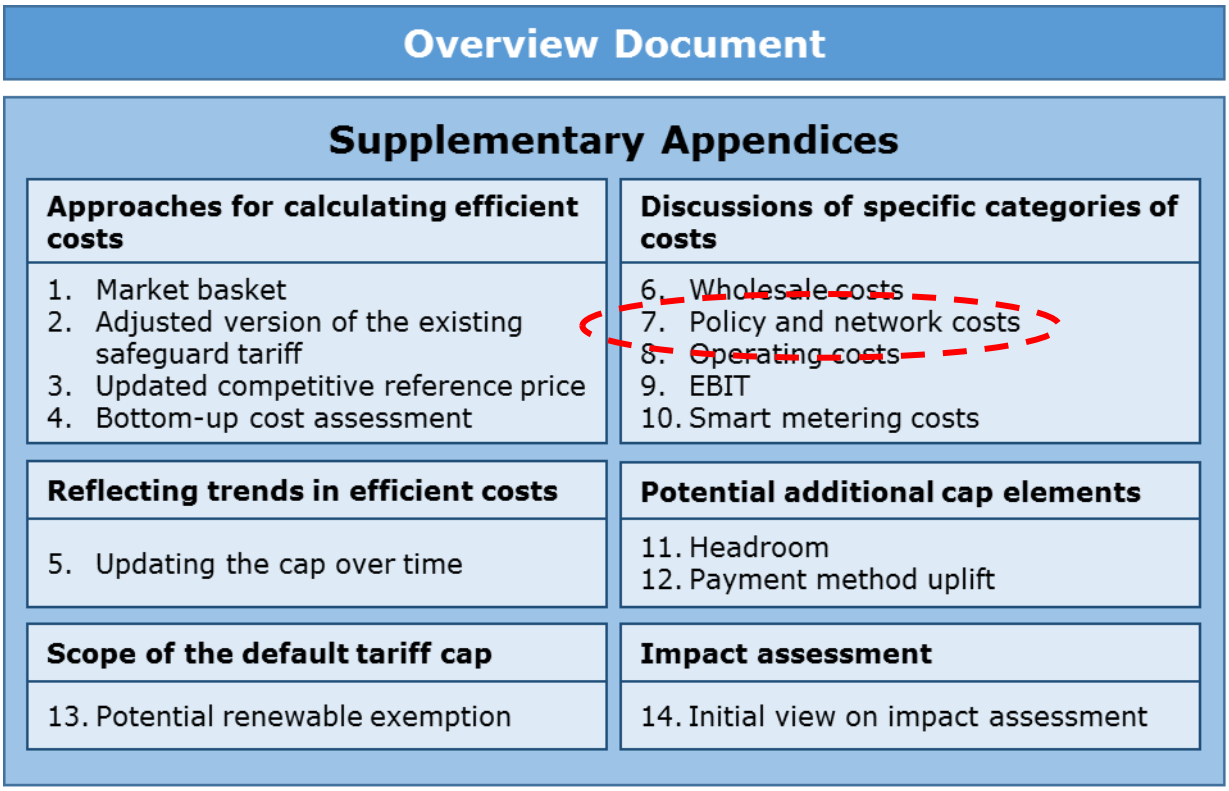
- Appendix 1 - Market basket: https://ofgem.gov.uk/system/files/docs/2018/05/appendix_1_-_market_basket.pdf
- Appendix 2 - Adjusted version of the existing safeguard tariff https://ofgem.gov.uk/system/files/docs/2018/05/appendix_2_-_adjusted_version_of_the_existing_safeguard_tariff.pdf
- Appendix 3 – 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 set out our proposals in relation to estimating the costs that suppliers face in relation to their environmental and social obligations and network charges.

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. Structure of this appendix

1.1. In this appendix, we discuss our approach to estimating the costs that suppliers incur in relation to:

a) their environmental and social obligations

b) network charges

1.2. In Chapter 2, we provide an overview of suppliers' environmental and social obligations (which we also refer to as policy costs elsewhere in this consultation). These obligations also include the Capacity Market, which although we have categorised as a wholesale costs (as discussed in Appendix 6), we describe in this appendix given that the way in which the costs of this scheme are determined is similar in nature to other environmental and social obligations. We provide a summary of which companies are obligated under each of the schemes and describe the key features of how the costs of the schemes are met.

1.3. In Chapter 3, we discuss our estimates of the costs associated with suppliers' environmental and social obligations for 2017/18. It is these estimates that we propose to use to set the baseline allowance for these costs under a bottom up approach to setting the cap, if we were to select that option.

1.4. In Chapter 4, we describe the approach we propose to take to indexing the cap to reflect trends in the costs associated with environmental and social obligations. We will use this approach irrespective of whether we use a price reference or bottom-up cost approach to setting the initial level of the cap.

1.5. In Chapter 5, we describe the approach we propose to take to estimating the costs which suppliers incur in relation to charges for using the gas and electricity networks, both to include in the baseline level of the cap, and when updating the cap over time.

2. Overview of suppliers' environmental and social obligations

In this chapter, we provide an overview of suppliers' environmental and social obligations. We provide a summary of which companies are obligated under each of the schemes and describe the key features of how the costs of the schemes are met.

2.1. Energy suppliers are subject to a number of environmental and social obligations, designed to achieve a variety of different policy goals. In most cases, these obligations result in additional charges to suppliers, which are then passed on to gas and electricity customers via their energy bills.

2.2. There were six schemes in operation as of 31 March 2018, which directly result in additional expenditure by domestic suppliers:

- policies supporting low carbon and renewable energy, including the Renewable Obligation (RO), Contracts for Difference (CfD), and Feed-in Tariffs (FiT)
- delivering energy efficiency measures under the Energy Company Obligation (ECO) scheme.
- Warm Home Discount (WHD) rebates paid to fuel poor customers
- Assistance for Areas with High Electricity Distribution Costs (AAHEDC, previously known as the 'Hydro Benefit Scheme') which aims to reduce electricity prices in areas of high distribution costs (currently Northern Scotland).

2.3. In addition, suppliers must also make Capacity Market (CM) payments, designed to ensure security of supply. As mentioned in paragraph 1.2, we consider that the payments that suppliers make to fund the CM are best categorised as wholesale energy costs (discussed in Appendix 6). However, given that the way in which the costs of this scheme are determined is similar in nature to other government programmes, we have included our description of the CM scheme - and how we would estimate the costs of it - in this appendix.

2.4. As shown in Table A7.1 below, most of the schemes apply to electricity suppliers. For two schemes (WHD and ECO), energy suppliers incur costs relating to the scheme only when they reach a participation threshold.

Table A7.1: **Threshold levels and obligated suppliers under environmental and social schemes as at 31 March 2018**

Scheme name	Participation Threshold	Obligated suppliers
Renewable Obligation	None	All licensed electricity suppliers
Feed-in Tariffs	250,000 or more domestic electricity customers to be a mandatory licensee[1]. All electricity suppliers are required to make payments into the FiTs levelisation fund.	All licensed electricity suppliers
Contracts for Difference	None	All licensed electricity suppliers
Capacity Market	None	All licensed electricity suppliers
Warm Home Discount	250,000 or more domestic gas and electricity customers[2]	All electricity suppliers meeting the threshold criteria – although note that the obligation is based on the number of electricity and gas customers of those companies. Also includes some voluntary participants.
Energy Company Obligation	250,000 or more domestic gas and electricity customers and supply more than 400 gigawatt hours of electricity or more than 2,000 gigawatt hours of gas to deliver energy efficiency measures.	All electricity and gas suppliers meeting the threshold criteria
Assistance for Areas with High Electricity Distribution Costs	None	All licensed electricity suppliers

2.5. We have reviewed the key features of each scheme, focusing in particular on:

- whether suppliers have influence over the costs of complying with the scheme, and
- whether the cost of complying with the scheme for each supplier varies with the volume of energy supplied, or number of customers.

2.6. We also considered what information is available to understand the future costs of each scheme. A summary of our findings is provided in Table A7.2. Further details can be found in the working paper published on 19 April 2018[3].

[1] Suppliers with fewer than 250K customers can opt to be a 'voluntary licensee'. A 'voluntary licensee' is subject to the same obligations as a mandatory licensee.
[2] Note that in assessing whether a supplier is obligated under WHD and ECO, dual fuel customers are counted twice.
[3] Ofgem, working paper 4 – Environmental and social obligations costs under the default tariff cap.

Table A7.2: **Summary of costs to suppliers under each scheme**

Scheme	Are the costs within suppliers' control?	Do costs vary with volume?
Renewable Obligation Under the RO, suppliers have an obligation to source an increasing amount of electricity from renewable sources. Suppliers can meet their obligation by presenting certificates bought from generators or making payments into a buy-out fund. The scheme closed to all new generating capacity in March 2017.	The main drivers of the cost of the scheme – the level of the obligation and the buy-out price – are both outside of a supplier's control. However, suppliers have some flexibility over how they meet their obligation.	Yes – a supplier's obligation will vary depending on its total eligible electricity supplied in a given obligation period (among other factors).
Feed-in Tariffs Under the FiT scheme, owners of small-scale low-carbon generation receive payments for electricity they generate and that which they export to the grid. To fund the scheme, all electricity suppliers are required to make payments into a levelisation fund.	The main driver of the costs of the scheme to suppliers will be the level of the tariffs[4], which are set by BEIS, and so are outside of suppliers' control. The levelisation fund is designed to ensure that all suppliers pay the same in £/MWh.	Yes – a supplier's obligation is based on its share of total eligible electricity supplied in a given obligation period.
Contracts for Difference CfDs are designed to give greater certainty and stability of revenues to low-carbon electricity generators. The payments to generators are funded via a compulsory levy on all electricity suppliers.	Charges set by Low Carbon Contracts Company (LCCC) and BEIS - suppliers have no control over the costs of complying with the scheme.	Yes – suppliers charged on a £/MWh basis.
Capacity Market The CM is intended to ensure that there is sufficient electricity capacity to meet demand. The scheme is funded via charges to suppliers.	Charges set by LCCC and BEIS - suppliers have no control over the costs of complying with the scheme.	Yes – suppliers charged on a £/MWh basis.
Energy Company Obligation Under ECO, suppliers have an obligation to meet targets for installing energy efficiency measures to eligible domestic consumers.	Suppliers cannot influence the carbon reductions or bill savings they are required to deliver. However, they do have material control over how (and when) they meet their obligation.	Yes - a supplier's obligation is based on its share of gas and electricity supply by obligated companies.
Warm Home Discount Under WHD, suppliers provide support to customers at risk of fuel poverty through a rebate of £140 to eligible customers.	Total target spending as set in the legislation will determine the number of rebates to be paid. Suppliers will not be able to influence these costs.	No – obligation is based on a supplier's share of domestic customer accounts.
AAHEDC This scheme reduces prices for domestic consumers in areas with high electricity distribution network costs.	Charges set by National Grid – suppliers have no control over the costs of complying with the scheme.	Yes – suppliers charged on a £/MWh basis.

[4] Suppliers can reduce their market share for the purpose of the levelisation fund by importing eligible renewable electricity from the EU to a certain cap set by BEIS. See Ofgem, Feed-in Tariffs: Guidance for Licensed Electricity Suppliers (Version 9), paragraph 9.14.

3. Estimating the costs of environmental and social obligations in 2017/18

In this chapter, we discuss our estimates of the costs associated with suppliers' environmental and social obligations for 2017/18. It is these estimates that we would use to set the baseline allowance for these costs under a bottom-up approach to setting the cap.

Our proposal

3.1. Our initial estimate of the cost of each of the different schemes for 2017/18 is set out in Table A7.3 below. In most cases, these estimates are either based on data relating to the overall cost of the scheme or directly reflect the charges levied on suppliers. We describe how we have calculated the estimates in detail below.

Table A7.3: **Estimates of scheme costs in 2017/18**

Scheme	Estimated cost - electricity	Estimated cost - gas
RO	£18.642 £/MWh	
FiT	£4.977 £/MWh	
CfD	£2.108 £/MWh	
CM	£1.450 £/MWh	
WHD	£6.703 £/customer	£6.703 £/customer
ECO	£3.074 £/MWh	£1.077 £/MWh
AAHEDC	£0.231 £/MWh	

Scheme	Electricity (single register)		Electricity (multi- register)		Gas	
	Nil	TDCV	Nil	TDCV	Nil	TDCV
RO	£0.00	£57.79	£0.00	£78.30		
FiT	£0.00	£15.43	£0.00	£20.90		
CfD	£0.00	£6.54	£0.00	£8.85		
WHD	£6.70	£6.70	£6.70	£6.70	£6.70	£6.70
ECO	£0.00	£9.53	£0.00	£12.91	£0.00	£12.93
AAHEDC	£0.00	£0.72	£0.00	£0.97		
Total, excl CM	£6.70	£96.71	£6.70	£128.64	£6.70	£19.63
CM	£0.00	£4.49	£0.00	£6.08		

Source: Ofgem calculations based on data from BEIS and scheme administrators.
Notes:
1. For CM, estimated cost relates to the period October 2017 – September 2018. For ECO, estimated costs relate to annualised figures for the ECO2t period, which runs from April 2017 to September 2018. For WHD estimates relate to the period June 2017 - March 2018. In all other cases, estimated costs relate to the period April 2017 – March 2018.
2. Typical Domestic Consumption Values (TDCV) are 3.1MWh per year for electricity (single register), 4.2MWh per year for electricity (multi-register) and 12.0MWh per year for gas. See this page for further details.

3.2. We note that these estimates reflect the charges to suppliers under each of the schemes. However, they will not reflect the full impact of the schemes on customer bills – or the overall cost of each scheme to customers. This is because this will depend on the wider impacts of the schemes on, for example, wholesale prices (in the case of RO, CfDs and CM); energy efficiency (in the case of ECO); and network charges (in the case of AAHEDC).

3.3. Under a bottom up approach to setting the initial level of the cap, we would use the estimates in Table A7.3 to calculate the allowance for the costs of environmental and social schemes to include in the baseline level of the cap at nil and typical consumption (with the exception of CM, which would be included under the wholesale cost allowance).

3.4. Under an updated reference price approach, one option we have considered (although are not currently minded to take forward) would be to use the estimates in Table A7.3 to ensure that the benchmark price reflects the cost of a fully obligated supplier. However, our current proposal is to instead make a more targeted adjustment to account for any differences in the obligations of the benchmark suppliers under the WHD and ECO schemes (see Appendix 3 for our detailed discussion).

3.5. We do not currently consider that any adjustment is required were we to use an adjusted version of the existing safeguard tariff to set the initial level of the cap, as the benchmark already reflects the costs of a fully obligated supplier in 2015.

Methodology

FiTs, CfD, WHD, CM and AAHEDC

3.6. Suppliers are unlikely to have material control over the cost of complying with the costs of the FiT, CfD, WHD, CM and AAHEDC schemes.

3.7. For those schemes where suppliers do not have material control over their costs, we intend to estimate the allowance in the baseline level of the cap based on the market-wide average historic cost of each scheme for an obligated supplier. Because these costs will not vary materially between obligated companies (on a £/MWh or £/customer basis), this approach should allow obligated companies to fully recover the costs of these schemes.

3.8. There are a number of different data sources which we could use to calculate these costs. The options we have considered are: basing our estimates on supplier cost data; using information on total scheme costs as published by the Office for Budget Responsibility (OBR); and using scheme administration data. We set out

some of the advantages and disadvantages of these different approaches in our working paper.[5]

3.9. The stakeholders that responded to our fourth working paper generally agreed that suppliers do not have material control over the costs of these schemes. Some commented on the most appropriate way of estimating these costs and suggested that using scheme administration data would be more appropriate as it would avoid the issue of comparability across suppliers due to different accounting treatments.

3.10. **We propose using data from scheme administrators to estimate the costs of these schemes**. This is because we consider that this will provide the most reliable guide to costs in a specific obligation period, as it will not be affected by differences in suppliers' accounting treatment. We set out below the data sources we used to estimate the costs of each of the schemes reported in Table A7.3.

- **FiT** - the estimate per MWh provided in Table A7.3 is derived by dividing the total cost of the scheme (ie levelisation fund) by total relevant electricity supplied and is based on provisional data collected by Ofgem. We note that Ofgem will complete the annual reconciliation process for 2017/18 in October 2018 which may mean that both the levelisation fund and total relevant electricity supplied are subject to change. However, we consider it unlikely that these figures will change significantly.

- **CfD** – we have estimated the cost on a £/MWh basis by taking a quarterly weighted average of the Interim Levy Rate as published by LCCC, and combining this with the Operational Levy as published by Electricity Market Reform Settlement Limited. We used total net domestic electricity demand[6] by quarter as weightings in the calculation. As data for the first quarter of 2018 was not available, we assumed that net electricity demand in that quarter was equal to net electricity demand in same quarter in 2017. We will revise our calculation once the figure for Q1 in 2018 is published by BEIS. We note that there have been in-period adjustments to the Interim Levy Rates and have pro-rated these adjustments[7] by the number of days each rate has been effective in each quarter.[8]

[5] Ofgem, working paper 4 – Environmental and social obligations costs under the default tariff cap.
[6] See BEIS, Energy Trends, Table 5.2 Supply and consumption of electricity- Published on 28 March 2018.
[7] We have used the domestic demand volumes as reported by BEIS as weightings, Energy Trends, Table 5.2 Supply and consumption of electricity- Published on 28 March 2018.
[8] In response to our working paper, one stakeholder noted that the costs of the CfD may differ between single- and multi-register electricity customers because of the different profile of their consumption across quarters. We consider the magnitude of any such difference is likely to be small. However, we will continue to investigate the scale of this effect using sample data in relation to the consumption of profile class 1 and 2 customers and consider whether the difference is sufficient such that we should set different CfD allowances for single- and multi-register electricity customers reflecting the different seasonal consumption of the two groups.

- **CM** – this estimate is based on aggregate payments for the 2017/18 delivery year. This includes the administration costs of the scheme, as published by BEIS[9], and the payments for the T-1 auction held in January 2017 and the transitional auction held in February 2017. The payments for these auctions are based on capacity levels set by BEIS multiplied by the clearing price of the auctions, as published by National Grid. To derive the proportion of these payments falling to domestic customers, we have used an estimate of domestic electricity demand out of total demand in peak demand periods during winter based on an average of the four scenarios published by National Grid in its latest Future Energy Scenarios[10]. We have then divided the implied payment falling to domestic customers by total net domestic demand in the previous delivery year, as published in BEIS Energy Trends[11]. Note that – as discussed in paragraph 3.31 - we are continuing to consider whether it would be possible to reliably estimate different £/MWh allowances for single- and multi-register electricity, to reflect the different proportion of these customers' demand which takes place in the winter peak. We are also considering alternative sources of data on total electricity demand is relating to the specific obligation period October 2017 – September 2018.

- **ECO** - this estimate is based on the total annual spending for the scheme in the ECO2t period as in BEIS Impact Assessment (IA) (£638m per annum)[12]. Half of the spending in the BEIS IA has been attributed to gas and the other half to electricity. This has been multiplied by an estimate of the proportion of total expenditure in ECO2t that is accounted for by fully obligated suppliers for gas and electricity. We have then divided these figures by the volumes of total domestic gas and electricity supply of fully obligated suppliers in 2017/18[13] to derive our estimate of the scheme cost in £/MWh for each fuel.

- **WHD** - the estimate in Table A7.3 is obtained by multiplying the target spending[14] for the core group by the total market share of obligated suppliers at 31 December 2016. This figure is then added to the broader group and industry initiative figures and the total divided by the customer numbers of obligated suppliers as of 31 December 2016.

- **AAHEDC** - the value shown in Table A7.3 is the final level of the tariff for the period 2017/18 as published by National Grid in July 2017[15].

[9] See BEIS, Consultation on the Low Carbon Contracts Company's and the Electricity Settlements Company's operational costs 2017/18, see paragraph 7.
[10] We have calculated this estimate using figures of electricity peak residential demand and total electricity peak demand for 2017/18 as published in National Grid, Future Energy Scenarios (2017). Chart Workbook, Section 3.3, PD5.
[11] See BEIS, Energy Trends, Table 5.2 Supply and consumption of electricity- Published on 28 March 2018.
[12] See BEIS, ECO2t April 2017 to September 2018, Final Stage Impact Assessment.
[13] Customer numbers and supply volumes as of 31/12/2016 have been used for determining obligated suppliers for ECO2t and in calculating our estimate of the scheme cost, as described above.
[14] See BEIS, Warm Home Discount Scheme 2018/19, Table 1, Spending Target.
[15] See National Grid, Charging Statement AAHEDC, July 2017.

Renewable Obligation (RO)

3.11. For the RO, suppliers have limited control over their costs in that they can choose how to meet their obligation. We have considered two options:

- setting the baseline allowance using the cost a supplier would incur if it were to meet its obligation by paying into the buy-out fund
- setting the baseline allowance by taking an average of the RO costs in £/MWh reported by companies for financial year 2017

3.12. The former approach would reflect a level which would enable all suppliers (other than those facing late payment penalties) to fully recover the costs of the scheme. However, it will overstate costs for suppliers that have procured Renewable Obligation Certificates at a cost below that reflected in the buy-out price.

3.13. In contrast, using data on reported costs could in principle result in a baseline allowance that would be closer to the efficient level of the costs of meeting the RO, in that it would reflect any savings that suppliers have managed to achieve.

3.14. Our initial analysis of cost data collected from suppliers covering the previous three financial years suggests that reported costs of the RO scheme have been on average in the order of magnitude of £0.30/MWh lower than those calculated based on the buy-out prices.[16] We note, however, that the risk that variation between companies in reported RO costs may in part be driven by differences in the accounting treatment of these costs, rather than efficiency in how the obligation has been met. In addition, for most companies, reporting years will not align with the scheme years.

3.15. In response to our working paper, a number of suppliers acknowledged that companies do have some control over the costs of the RO scheme. However, nearly all respondents argued that the allowance for costs associated with the renewable obligation should be set with reference to the buy-out price.

3.16. Some suppliers submitted that the ability of suppliers to procure certificates at a discount was likely to decline going forward now that the scheme had been closed to new generating capacity. They argued that this would reduce the uncertainty over the level of ROCs available to the market, and cause the costs of complying through purchasing certificates or paying into the buy-out fund to become equivalent. Some

[16] We calculated the reported cost on a £/MWh basis by using the costs for RO and electricity volumes reported by each supplier in response to our request for information. For suppliers' with a financial year ending December, we then compared these estimates with an estimate of the cost of the RO scheme based on the buy out price and obligation level – taking a weighted average across different scheme years. So for instance, we compared RO costs in £/MWh as reported by suppliers for calendar year 2017 with a weighted average of the cost of the RO in £/MWh based on the buy-out price and obligation level for 17/18 (weighting of 75%) and 16/17 (weighting of 25%).

suppliers provided evidence that discounts available compared to the buy-out price had recently declined.

3.17. We have reviewed how suppliers themselves forecast these costs for their own business purposes. We note that in most cases, suppliers' estimates of future costs are based on their expectation of trends in the buy-out price.

3.18. Having reviewed the evidence, our proposal is to calculate the allowance for the costs of the RO by combining the buy-out price with the level of the obligation as set by BEIS, both in the baseline and when updating the cap. This is how the estimates in Table A7.3 have been prepared. This approach reflects our expectation that the scale of the discounts that suppliers are able to achieve is likely to be relatively small and to diminish going forward, due to the closure of the scheme to new generation (which is likely to reduce uncertainty about the volume of renewable generation which BEIS face when setting the obligation). It also reflects the challenge of robustly estimating what an efficient discount relative to this price might be in the future, given the data available to us.

Energy Company Obligation (ECO)

3.19. Suppliers cannot influence the ECO carbon reductions or bill savings they are required to deliver. However, they do have material control over how (and when) they meet their obligation.

3.20. We have considered the following options:

- setting the allowance based on the implicit average cost for a fully obligated supplier, as calculated by taking the total scheme cost and dividing by supply for obligated suppliers. Total scheme costs could be based on:

    i. the annualised figure in the BEIS Impact Assessment (£638m)

    ii. total ECO expenditure between April 2017 and March 2018, as reported in Table T2.8 of BEIS' Energy Efficiency Statistics

- setting the allowance by taking either an average or lower quartile of total ECO costs in £/MWh reported by fully obligated suppliers, summing across financial years 2015 to 2017.

3.21. Either approach would introduce an element of benchmarking, as companies may incur costs above and below the average cost per MWh in meeting their obligation.

3.22. The key drawback of relying on supplier data is – like with RO - that variation between companies in reported costs may be driven by differences in suppliers'

accounting treatment of the costs, rather than efficiency in how the obligation has been met.

3.23. There is also a significant mismatch between reporting years and the obligation periods. This means that variation in costs may be driven by the profile of suppliers' expenditure across the obligation period rather than differences in realised cost.

3.24. Using information on annualised costs from the BEIS IA avoids this problem. However, it is subject to the limitation that it is a forecast of total costs, and so will be subject to uncertainty. Data from the suppliers and the BEIS energy efficiency statistics suggests both that there are significant differences in costs between companies, and that total supplier expenditure in ECO2t may have been lower than the annualised forecast cost included in the IA (although we are continuing to analyse whether this is in fact the case).

3.25. In response to our working paper most respondents acknowledged that suppliers have some control over the cost of delivering the ECO scheme. Some provided specific reasons which might explain the significant variations in suppliers' reported costs under the scheme. Between the reasons provided to explain these variations are: differences in suppliers' expenditure year on year, significant economies of scale enjoyed by the largest energy suppliers and differences in the way suppliers have phased their ECO obligation over time.

3.26. Many respondents said that using historic scheme costs for ECO would not be a good indication of future scheme costs, given the changes proposed by government for ECO3, in particular the increasing focus on fuel poverty. Some suggested using BEIS' cost estimates of ECO3 for setting the initial level of cap. However, while a few acknowledged that using BEIS' estimates was a good starting point, they also argued that BEIS' estimates might understate the future cost of the scheme due, for example, to the rural element of the future scheme.

3.27. Having reviewed the evidence, our current proposal is to set the allowance in the initial baseline with reference to the BEIS IA. We note that there is some evidence that this may overstate the average cost of the scheme in £/MWh to an obligated supplier and we will continue to analyse the data available to us to consider whether this is in fact the case. However, the impact this ultimately has on the level of the cap will primarily be determined by the accuracy of the estimates of scheme costs included in BEIS' ECO3 impact assessment, which we propose to use to update the ECO allowance on a forward-looking basis (see paragraph 4.20). We consider this to be the best available source of information on the likely future costs suppliers will incur under this scheme.

3.28. Specifically, to derive our estimate of ECO costs in Table A7.3, we have divided the total annual spending for the scheme in the ECO2t period as per the BEIS IA (£638m per annum) by two. Half of the spending in the BEIS IA has been attributed to gas and the other half to electricity. We have multiplied this spending by an estimate of the proportion of total expenditure in ECO2t that was accounted for by fully obligated suppliers for gas and electricity. We have then divided this by the total

domestic supply volumes of those fully obligated suppliers in 2017/18 to derive our estimate of the scheme cost in £/MWh for each fuel.

3.29. One supplier argued that it would not be appropriate to calculate the allowance for the costs of ECO using the average, because smaller suppliers would incur higher costs as a result of their smaller size. However, to meet the objective of the Bill, we intend to set the allowance to reflect an efficient level of costs. We consider it unlikely to be appropriate to set an allowance above the average to reflect the possibility that some suppliers have higher costs due to their operating at a smaller scale.

How costs vary with consumption

3.30. We have considered the extent to which the costs of the different schemes vary with a customer's consumption. We have found that the costs of each of the schemes vary in proportion to the amount of electricity (for ECO, electricity or gas) a customer uses, with the exception of the WHD, where a supplier's obligation depends on the number of customer accounts.

3.31. Given this, were we to use a bottom-up approach to estimating the cap, we propose that:

- the allowance for environmental and social obligation costs at nil consumption would only reflect the costs of the WHD scheme

- the allowance for environmental and social obligation costs at typical consumption for gas would be calculated by combining the WHD estimate with an estimate of the costs of the ECO scheme at a consumption level of 12.0MWh of gas per year (the current Typical Domestic Consumption Value – TDCV - for gas)

- the allowance for environmental and social obligation costs at typical consumption for single-register electricity would be calculated by combining the WHD estimate with estimates of the costs of the RO, FiTs, CfD, ECO and AAHEDC schemes at a consumption level of 3.1MWh per year (the current TDCV for profile class 1)

- the allowance for environmental and social obligation costs at typical consumption for multi-register electricity would be calculated by combining the WHD estimate with estimates of the costs of the RO, FiTs, CfD, ECO and AAHEDC schemes at a consumption level of 4.2MWh per year (the current TDCV for profile class 2).

3.32. As described earlier in the appendix, we propose to include the costs of capacity market payments alongside wholesale costs. The scale of these costs will also vary in proportion to an electricity customer's consumption. We note that, in addition, a supplier's costs will depend on the profile of its customers' demand (and

in particular the proportion of this that takes place in peak winter periods). We are continuing to consider whether profile data could be used to reliably estimate the proportion of total costs attributable to the two groups, given the differences in the relative demand of these customer in the winter peak.

3.33. In general, respondents to our working paper agreed that the majority of environmental and social costs, with the exception of the WHD, vary with consumption and believe this should be reflected in the price cap, for both standard and Economy 7 meters.

Obligation thresholds

3.34. Our current view is that we would expect to set the level of the cap in a way that reflects the policy costs that would be incurred by a fully-obligated supplier in steady state (ie where their obligation reflects their market share in the relevant period). This is consistent with the approach taken in the existing safeguard tariffs.

3.35. The alternative would be to set the cap based on the average cost to suppliers as a whole, irrespective of the extent to which they were obligated under the schemes. However, this approach would not allow fully obligated suppliers to recover the costs incurred under each of the schemes even if they were operating efficiently.

3.36. Some respondents agreed with our view to set the level as to reflect the cost of fully obligated suppliers. However, some were concerned that smaller suppliers, who are exempt from ECO and WHD, would have a considerable competitive advantage by receiving an allowance for costs they do not face.

3.37. Other respondents argued that, as the number of smaller suppliers in the market grows, those customers who have not switched and remain with the ex-incumbent suppliers would pick up the burden of paying for the obligations on behalf of the more engaged customers who have switched.

3.38. As noted in our working paper, BEIS has held consultations on the participation thresholds used in relation to both schemes. Under the Bill, we cannot make different tariff cap conditions for different suppliers, and we therefore cannot set different caps for different suppliers to reflect differences in obligation levels. Nor is it clear that it would be appropriate to do so, given the policy intent of those thresholds.

3.39. A few respondents said that BEIS' proposed changes to the tapering mechanism for ECO would further increase the share of ECO costs borne by large suppliers and that Ofgem would need to set the cap as to reflect this change. As discussed below, we recognise the uncertainty on the demand base across which the costs of the ECO3 scheme are spread, and propose to retain some flexibility to determine this based on the outcome of the BEIS consultation.

QA7.1: Do you agree with the way we propose to estimate the costs of each of the schemes for setting the baseline level of the cap?

4. Estimating trends in the costs of environmental and social obligations

In this chapter, we describe the approach we propose to take to indexing the cap to reflect trends in the costs associated with environmental and social obligations. We propose to use this approach irrespective of whether we use a price reference or bottom-up cost approach to setting the initial level of the cap.

Our proposal

4.1. As discussed in Chapter 1, the costs of the different schemes vary significantly over time, and most of this expenditure is outside of suppliers' control. We therefore propose to design the cap so that is updated over time to reflect trends in these costs.

4.2. As described in Appendix 5, our current proposal is to update the cap twice a year, with new levels coming into force each April and October – and the updated values published no later than the fifth working day in February and August respectively. We propose to update all environmental and social obligations costs with reference to exogenous data on trends in those costs. We will use this approach irrespective of whether we use a price reference or bottom-up cost approach to setting the initial level of the cap.

4.3. In most cases, the full costs to suppliers will not be known in advance. Our general view is that where possible costs should be recovered in the period in which they are incurred. For this reason, we will use forecasts of future scheme costs to update the level of the cap.

4.4. In Table A7.4 below, we describe for each scheme, the information we propose to use to index that component of the default tariff cap. In each case, we will use the data to calculate the cost of the scheme in £/MWh (or for WHD, £/customer) for a given price cap period, and compare this to the value in the baseline. In a number of cases, the information available when publishing the updated level of the cap in February will differ from that available when publishing the updated level of the cap in August, and we note this in the table.

4.5. We note that in the case of the ECO and WHD schemes, we intend to leave some flexibility such that our preferred source of data on the demand base can reflect the outcome of BEIS' consultations on the future of both schemes.

Table A7.4: **Proposed approach to updating the cap to reflect trends in the costs of suppliers' environmental and social obligations**

Scheme	How would the forecast cost of the scheme be estimated?	How would the demand base across which this cost is collected be estimated?
RO	Calculated by combining buy out price with obligation level for the scheme year (April – March), as published by BEIS. For the April update, buy-out price would be estimated by taking the previous year's buy-out price, and combining it with an estimate of average monthly RPI in the preceding calendar year (an estimate will be used, as the annual value of RPI for the calendar year will not be published until the middle of February). For the October update, the final published buy-out price would be used.	n/a
FiT	Total cost based on most recent OBR estimate of total cost for the scheme year (April – March). While exact timing of OBR updates may vary, in general we would expect the October updates to be based on the forecasts published by the OBR the previous March, the April updates on the forecasts published the previous November.	Forecast of relevant demand based on the estimates published by BEIS in its calculations of the level of the RO for a given scheme year[17] minus forecast of total renewable electricity supplied to customers within Great Britain from outside of the UK ('exempt supply'). Exempt supply estimated using actual figure from the previous year multiplied by 10%[18] as per BEIS regulation. Were the exemption for Energy Intensive Industries to be extended to FiTs, we would incorporate the BEIS estimates of the extent of eligible consumption, and subtract these from our estimate of total eligible demand.
CfD	Calculated using the most recent published LCCC forecasts of ILR for the two quarters covered by the price cap, weighted using BEIS data on historic quarterly demand trends. So for the April update, the latest LCCC forecasts of the ILR for Q2 and Q3 as of the time of setting the cap would be used, and for the October update, this would be based on the latest LCCC forecasts for Q4 and Q1.To this we would add Operational Cost Levy as published by EMR Settlement Limited.	n/a

[17] See BEIS, page 7, Calculation A. Definition of eligible demand is the same for Renewable Obligation and Feed-in-Tariffs.
[18] See Ofgem, Feed-in Tariffs: Guidance for Licensed Electricity Suppliers (Version 9), para 9.14.

Scheme	How would the forecast cost of the scheme be estimated?	How would the demand base across which this cost is collected be estimated?
CM	Total cost estimated using latest information on the results of any auctions for the given delivery year (October – September), and administration budget as published by BEIS.	Forecasts of gross domestic demand for peak periods out of total gross demand in winter based on an average of the Future Energy Scenarios published by National Grid[19] for a given scheme year in July. Total gross domestic demand based on an average of the Future Energy Scenarios published by National Grid for a given scheme year in July.
WHD	Based on target spending for scheme year (April – March), as published by BEIS, net of estimated rebates paid by voluntary suppliers in the previous scheme year.	The exact data source will depend on the outcome of the BEIS consultation. In the absence of any preferred alternative, we would estimate this based on the domestic customer numbers of fully obligated suppliers used to assess eligibility for the most recent scheme year for which information is available.
ECO	Annualised scheme cost estimated based on most recent BEIS impact assessment estimate, ie the Consultation Stage Impact Assessment for ECO3, as published by BEIS in March 2018, or any successor documents.	The exact data source will depend on the outcome of the BEIS consultation. In the absence of any preferred alternative, we would estimate this based on the gas and electricity domestic supply volumes of fully obligated suppliers used to assess eligibility under ECO2t.
AAHEDC	For April update, estimated charge based on previous year's charge as published by National Grid, uprated in line with an estimate of annual trend in RPI. In October, updated to reflect final charge as published by National Grid	n/a

[19] See National Grid, Future Energy Scenarios (2017).

Methodology

Forecast data on scheme costs

4.6. The existing safeguard tariffs are updated using OBR forecasts of total scheme costs. As noted in our working paper, this data has a number of advantages. It provides a single source of information on the expected future costs of the majority of the schemes affecting suppliers' costs. Unlike, for example, cost estimates in impact assessments, it is published on a predictable basis and in a pre-prescribed format. This enables us to specify the process for indexing this element in detail in the licence condition, which reduces uncertainty for companies.

4.7. In response to our working paper many respondents commented on the use of the OBR forecasts for updating the level of cap. A few supported the use of OBR forecasts, subject to our proposals to convert OBR estimates to £/MWh. However, some opposed their use in updating the cap, particularly citing general concerns about granularity and accuracy, and the more specific concern that the OBR data was subject to a significant lag, as it is published only twice a year in March and November. Due to the gap required between the level of the cap being set and the update coming into force, this means that a default tariff set for 1 April would use November's data.

4.8. Those who opposed the use of the OBR data argued that Ofgem should use instead the most up to date view of the costs of each scheme where available as provided by the relevant scheme administrators for CfDs, RO, CM and FIT.

4.9. Having considered the submissions received, we propose to use a mixture of forecast data to update the level of the cap, choosing the most appropriate data source in relation to each scheme. In each case we rely on data published by the OBR, BEIS or the scheme administrator. Our proposed sources are listed in full in Table A7.4.

4.10. In choosing the sources listed in the table we have sought to balance between the following considerations:

a) ensuring that the approach allows the most up-to-date information on expected costs to be reflected. For example, for CfDs we propose to use the most recent available forecasts of scheme costs for a given period as published by LCCC, rather than the OBR forecasts prepared several months previously. This should increase the accuracy of the forecasts used to update the cap.

b) ensuring that the design relies on information that is 'official' (ie published by a public body), transparent, not overly complex and published to a predictable schedule. This should reduce uncertainty and risk for suppliers.

c) using sources which suppliers themselves have relied on in forecasting the costs of the different schemes for their own business purposes. This provides confidence in the reliability of the data used.

Demand base

4.11. The policy costs component of the existing safeguard tariffs are indexed using trends in the total scheme costs as reported by the OBR. This means that where there are changes in the demand base across which these costs are recovered, the impact on suppliers' costs will not be captured.

4.12. Relevant trends could include:

- Trends in the total demand base (eg lower electricity use due to energy efficiency or trends in economic growth meaning that, all else equal, scheme costs are collected from a smaller cost base – and so are higher in £/MWh).

- Trends in the proportion of costs that fall to domestic customers – for instance as a result of the possible exemption of energy intensive customers from the costs of the FiTs scheme.

- Trends in the market share of fully obligated suppliers – either due to changes in the market share of eligible and non-eligible companies or due to new companies becoming eligible.

4.13. In response to our working paper, some respondents said that policy costs were subject to significant uncertainty in particular on qualifying demand for CM, FIT, and CfDs. Other considered that the decreasing demand for gas and electricity meant that some of the costs of social and environmental obligations (e.g WHD and ECO) were associated with recovering static or increasing costs from a smaller customer base.

4.14. A few noted that for RO, CfD and potentially FiT, the Energy Intensive Industries exemption reduces the qualifying demand over which scheme costs can be recovered, which has the effect of increasing the 'cost per unit' applied to domestic customers.

4.15. Our current proposal is that in order to ensure that the default tariff cap tracks relevant trends as closely as possible, we will include information on the relevant demand base when calculating the updated level of the cap. That is, we will divide our estimates of the total costs of the FiT, CM, ECO and WHD schemes by our best estimate of the demand base across which these costs are collected.

4.16. In some cases, forecasts of the future demand base will not be available, in which case we will use data on eligible demand in previous years. A full list of our proposed data sources is set out in Table A7.4.

Inclusion of forecasts of ECO and AAHEDC costs

4.17. The OBR forecasts used to index the existing safeguard tariffs does not include any estimate of the costs related to ECO or AAHEDC.

4.18. Most respondents to our working paper argued that we should include an explicit allowance for ECO when updating the level of the cap.

4.19. As noted in paragraph 3.26 above, many respondents said that it would not be appropriate to use historic estimates of ECO for updating the level of the cap and suggested using a forecast, based on the BEIS ECO3 Impact Assessment. One supplier noted that the ability for suppliers to phase their delivery over the ECO3 period raised the risk of gaming were an alternative approach used.

4.20. We propose to update the cap to reflect forecast trends in the costs suppliers incur in relation to ECO. This will be based on the estimate of annualised total scheme costs to suppliers, as included in the most recently published impact assessment for the ECO3 period.

4.21. While we acknowledge the points raised by some stakeholders regarding the uncertainty over the future costs of the scheme (as with the WHD), we consider this IA to be the best available guide to the expected costs of the scheme to suppliers. This is supported by our review of how suppliers themselves forecast the expected future costs of this scheme. Were any changes to the scheme made that impacted upon the costs to suppliers, we would expect this to be reflected in a revised impact assessment. As set out in Table A7.4, we will continue to consider the most appropriate source for estimating the demand base across which the costs of these schemes are collected.

4.22. In response to our working paper, some respondents also argued that we should add an explicit allowance for AAHEDC. While these costs are relatively small, we consider that relevant trends can be reflected in the cap using a combination of historic charges and trends in RPI. Therefore, we intend to set the allowance based on the charge as published by National Grid, or prior to this being published, the charge for the previous year, uplifted with forecast RPI.

QA7.2: Do you agree with our proposed approach to forecasting the costs of each scheme?

QA7.3: Do you agree with the data sources that we propose to use to forecast the expected demand base for each scheme? Do you have any alternative suggestions which would more accurately track trends in eligible demand?

5. Network charges

In this chapter, we describe the approach we intend to take to estimating the costs suppliers' incur in relation to charges for using the gas and electricity networks, both to include in the baseline level of the cap, and when updating the cap over time.

Our proposal

5.1. We propose to set the allowance for network charges using the same model as is used under the existing safeguard tariffs. In our view, basing this component of the cap on the network companies' charging statements provides a reliable way of estimating the scale of network costs for a given customer type.

5.2. The full model is available via this link. It combines information on published charges with assumptions about load profiles to estimate the charges incurred in each region in £ per customer, for a given level of consumption.

5.3. As we are proposing to set different caps for customers with single- and multi-register meters, we would estimate different levels of charges for the two groups of customers. We would also estimate an allowance reflecting historic balancing services charges levied by the transmission system operator, National Grid.

5.4. The existing safeguard tariff does not include an explicit network charge component for a customer with nil consumption (although this is included implicitly within the benchmark at nil consumption). Were we to estimate costs at nil consumption using a bottom up approach, for network costs we would do so with reference to the electricity distribution standing charges for profile class 1 and profile class 2 customers. Note that this is not necessary if the level of the cap at nil consumption is set with reference to market prices.

5.5. Most stakeholders did not raise concerns with our proposal to use the existing model to estimate network costs under the default tariff cap. One stakeholder argued that electricity transmission and gas distribution and transmission charges are only finalised 60 days prior to the start of the charging periods, and that this would create a significant risk for suppliers. However, we do not agree that this is the case, as the existing model uses the final charges to update the level of the cap – and we would intend to do the same when updating the default tariff cap.

5.6. There could be some risk to suppliers if there were changes to network charges within the charging year, which came after the level of the cap had been set. However, historically such changes have been rare. We also note that we propose to review the level of the cap twice a year, providing us with the ability to take mid-year changes into account if appropriate to do so.

5.7. One supplier raised a concern that the estimate of peak share used in the model caused electricity transmission costs for customers with multi-register meters to be underestimated. We note that the model allows us to make updates to this parameter and will consider whether there is any evidence to suggest that this should be changed. We will also continue to consider more generally the impact of using information on the average share of consumption that takes place in peak periods when calculating the allowance for network charges, particularly where suppliers have portfolios of profile class 2 customers with different consumption profiles.

5.8. Some stakeholders raised the issue of how the impact of supplier of last resort arrangements would be taken into account in setting the cap. Where Last Resort Supply Payments are made in a given period, these are collected via gas and electricity distribution charges. Where charges in connection with any such payments are levied in a given year (as is the case in the 2018/19 charging year) we propose to include these charges when calculating the network costs allowance.

QA7.4: Do you agree with our proposal to use the existing model to estimate the network costs that suppliers incur?

QA7.5: Do you have any views on the impact of using information on the average share of consumption that takes place in peak periods to estimate electricity transmission charges?

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 - Estimating the costs of environmental and social obligations in 2017/18

Question A7.1: Do you agree with the way we propose to estimate the costs of each of the schemes for setting the baseline level of the cap?

Chapter 4 - Estimating trends in the costs of environmental and social obligations

Question A7.2: Do you agree with our proposed approach to forecasting the costs of each scheme?

Question A7.3: Do you agree with the data sources that we propose to use to forecast the expected demand base for each scheme? Do you have any alternative suggestions which would more accurately track trends in eligible demand?

Chapter 5 - Network charges

Question A7.4: Do you agree with our proposal to use the existing model to estimate the network costs that suppliers incur?

Question A7.5: Do you have any views on the impact of using information on the average share of consumption that takes place in peak periods to estimate electricity transmission charges?