Impact Assessment

Default Tariff Cap: Decision

Final Impact Assessment

Division:	Consumers & Markets	**Type of measure:**	Price control
Team:	Retail Price Regulation	**Type of IA:**	Qualified under Section 5A UA 2000
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Summary: Intervention and Options

Rationale for intervention, objectives and options

What is the problem under consideration? Why is Ofgem intervention necessary?

The Competition and Markets Authority (CMA) found that domestic customers were paying significantly more for their energy than they would do in a fully competitive market. This is driven by market failures that hinder competition including information asymmetries, perceived and actual switching costs, and brand loyalty. These factors mean that some consumers are not responsive to price and suppliers are able to earn above-normal profits.

The CMA recommended a package of remedies designed to improve competition, which are being implemented, but many of these market-based measures will take time to take effect. Intervention is necessary to protect consumers in the meantime until the market-based interventions take effect.

Ofgem has already put in place price protection in the form of a safeguard tariff for over four million customers with prepayment meters (PPM) from April 2017. The safeguard tariff was then extended on 2 February 2018 to almost one million vulnerable customers who are recipients of the Warm Home Discount (WHD). Government considers that without further intervention less active customers not eligible for these tariffs will continue to lose out.

In July 2018 Parliament passed legislation for the introduction of a temporary cap on standard variable and default tariffs ('the default tariff cap'). The Domestic Gas and Electricity (Tariff Cap) Act created a new duty for Ofgem to design and implement the cap as soon as practical after the Act had passed.

What are the policy objectives and intended effects including the effect on Ofgem's strategic outcomes?

The objective of the default tariff cap, as provided for by the Act,[1] is to protect current and future customers who pay Standard Variable Tariffs (SVTs) or default tariffs.

In complying with this objective, the Act states that Ofgem must have regard to the following matters:

- The need to create incentives for holders of supply licences to improve their efficiency.
- The need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts.
- The need to maintain incentives for domestic customers to switch to different domestic supply contracts.

[1] The Domestic Gas and Electricity (Tariff Cap) Act, Page 1.

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

What are the policy options that have been considered, including any alternatives to regulation? Please justify the proposed option (further details in Evidence Base)

The Act creates a duty for Ofgem to design and implement the default tariff cap. Our consideration of options is therefore restricted to those relating to the design and implementation of the default tariff cap, rather than alternative mechanisms to protect customers or a 'do nothing' option.

In designing the default tariff cap, we have considered a large number of options relating to each element of design. Decisions on these options, and their rationales, are detailed in our May consultation, our statutory consultation and our decision document.

This impact assessment focuses on the options that have been considered in setting the level of the default tariff cap. This primarily relates to the headroom allowance applied over and above the efficient cost benchmark, which directly impacts the overall level of the default tariff cap. Throughout this document we analyse the impact of the cap level that will be implemented in the first period of the cap, based on the decided cap methodology, and the alternative higher and lower cap levels considered, compared to the baseline of no default tariff cap.

We also consider an alternative option for the apportionment of costs relating to different payment methods (payment method uplift). However, this does not affect the aggregate impact of the cap, only the distribution of the impacts across consumers and suppliers, and is therefore considered as a sub-option (2b).

Table A11.1: Policy options considered

Cap level option	Cap level (Direct Debit TDCV[2])	Cap level (Standard Credit TDCV)	Weighted average cap level (TDCV)
Option 1	£1,095	£1,176	£1,116
Option 2 (chosen option)	£1,137	£1,221	£1,159
Option 3	£1,170	£1,256	£1,192
Option 2b	£1,151	£1,183	£1,158

Source: Ofgem analysis

[2] Based on Ofgem's Typical Domestic Consumption Values (TDCV) median consumption estimates of 12,000 kWh of gas and 3,100 kWh of electricity.

The headroom allowance and payment method uplift (option 2) for the cap have been decided with the aim of meeting the objective of the Act, whilst having regard to the four matters set out above.

Under option 1, default tariff customers would achieve greater savings than in option 2, but there would be a greater risk of reductions in customer service levels as a result of suppliers seeking to cut costs in response to lower revenues and profits. Furthermore, by reducing the headroom allowance, there would be a greater risk that efficient suppliers would not be able to finance their activities, generating a risk of market exit by a number of suppliers, potentially including those operating efficiently. A lower cap level would also be expected to have a greater negative impact on the incentive for customers to switch as a result of the smaller price differential between default and fixed tariffs. This would increase the likelihood of price convergence across the market which would mean less price competition among suppliers.

At a higher cap level (option 3), default tariff customers would receive less protection in the short run and there would be less of an incentive for suppliers to improve efficiency, resulting in less benefit from such efficiencies to future default tariff customers in the long run. In the short run, there would be less of a negative impact on consumer engagement and the incentive to switch.

Under option 3, suppliers would see less of an impact on their revenues and profits compared to option 2. This would result in less risk of exit by suppliers, and combined with the lower impact on engagement and incentives to switch, could mean more suppliers continue to compete under the cap with lower fixed tariff prices. However, our chosen cap level has been set at a level where we consider that efficient suppliers will be able to finance their activities. Furthermore, it is set at a level which we consider will allow some suppliers to compete under the cap. At this level, we expect there to continue to be some fixed-tariff deals priced significantly below the level of the cap, meaning that consumers will have a financial incentive to switch.

We therefore consider that option 2 best meets the objective of the cap and balances the matters to which we must have regard.

Chosen option - Monetised Impacts (£m)

Business Impact Target Qualifying Provision	Qualifying
Business Impact Target (Equivalent Annual Net Direct Cost to Business in 2014 prices)	**£995m**
Net Benefit to Ofgem Consumer Direct consumer net present value (NPV) figures represent the direct impact on default tariff customers. The net impact (direct + illustrative indirect impacts) includes the illustrative indirect impact of potential changes to tariff prices below the cap level in order to offset the negative revenue impacts of the cap. It does not include the redistribution impacts of protecting vulnerable customers from higher bills, which contribute to the benefits.	**Direct only:** **£2,269m** **Direct + illustrative indirect impacts:** **£1,178m to £2,297m**
Wider Benefits/Costs for Society Direct wider impacts include the direct revenue impact on suppliers and administrative costs for suppliers and Ofgem. The net wider impact (direct + illustrative indirect impacts) includes the illustrative indirect impacts on suppliers, third party switching services, Government and Ofgem, and on the environment. It does not include the non-monetised impacts on efficiency and competition.	**Direct only:** **-£2,290m** **Direct + illustrative indirect impacts:** **-£2,305m to -£1,203m**
Net Impact The overall net benefit includes the net impact on all relevant stakeholders.	**Direct only:** **-£21m** **Direct + illustrative indirect impacts:** **-£9m to -£26m**
Explain how was the Net Benefit monetised, NPV or other NPV in August 2018 prices of impacts estimated for the period from January 2019 to December 2020.	

Chosen option - Hard to Monetise Impacts

Describe any hard to monetise impacts, including mid-term strategic and long-term sustainability factors following Ofgem IA guidance

This impact assessment quantifies the estimated monetised impact of the default tariff cap on: customer bills and supplier revenues, including through impacts on prices of uncapped tariffs, customer switching rates and energy consumption; administration costs; VAT receipts and greenhouse gas emissions.

In addition to these monetised impacts, the default tariff cap is expected to have distributional impacts, and impacts on customer engagement, competition and innovation in the domestic energy market which we are unable to monetise.

The objective of the default tariff cap is to protect current and future default tariff customers. Whilst we consider it possible that the cap could result in bill increases for fixed tariff customers, there will be redistribution benefits from this that are not reflected in the monetised impacts. Vulnerable customers are more likely to be on high-priced SVTs and spend a higher proportion of their income on energy.[3] When considering the welfare impacts, we would put a greater weight on the social value of savings to these customers compared to those of higher income groups, who tend to be more engaged customers. The monetised net customer bill impact does not adjust for this distributional weighting and therefore underestimates the benefit to consumers.

Customer engagement could be impacted by the reduced price dispersion between capped and uncapped tariffs, as well as through a 'protection factor' whereby the cap causes customers to believe there is no need to switch supplier or tariff. Any such 'protection factor' could, though, increase consumer confidence and engagement in the energy sector in the longer term.

If the cap results in reduced switching rates, consumers who would otherwise have switched to cheaper deals will be financially disadvantaged. We have monetised this impact, but have not attempted to monetise benefits from the avoidance of switching costs that consumers would otherwise have incurred. Also, we have not monetised the potential effects of the price cap on non-price competition. These are potentially ambiguous: on the one hand, the price cap could reduce overall engagement and lead to lower incentives for suppliers to compete in any area; on the other, the reduced scope for price competition could encourage firms to compete in other ways, such as through customer service.

We have not monetised potential effects of the price cap on supplier efficiency, entry and innovation. We would expect the cap to incentivise suppliers to improve efficiency in order to compete, but the effects on entry and innovation are more ambiguous. The cap could encourage suppliers to innovate more rapidly to remain competitive, and encourage the entry of firms with innovative new business models. But it could also reduce incentives to enter the market because of reduced opportunities to earn above normal profits.

[3] Ofgem: Providing Financial Protections for Vulnerable Customers.

Longer term, beyond the period of the cap, there should be benefits to customers of suppliers becoming more efficient as a result of the cap. However, there may also be potential longer term negative impacts when the cap is removed due to legacy effects on engagement and competition.

The cap will be removed when it is judged there are conditions for effective competition, or at the end of the 2023 at the latest.[4] However, we note that effective competition itself may take some time to develop.[5]

Beyond the retail market, we have not monetised the impacts of the cap on participants in wholesale energy markets. The system of updating the cap is likely to affect how suppliers choose to hedge in the wholesale market, and lead to more clustering of hedging strategies. This could result in reduced liquidity of some wholesale market products at some times, and thus higher supplier costs of purchasing wholesale energy on average.

Key assumptions/sensitivities/risks

The default tariff cap is likely to lead to complex market dynamics that are difficult to predict. To reflect these dynamics, we have undertaken modelling of potential second order impacts of the default tariff cap on suppliers' pricing behaviour including potential changes in prices of uncapped tariffs; as well as analysis of customer behaviour including the impact on switching rates and energy consumption.

This is reflected in the supplier price response scenarios that we have presented in our analysis. The range generated by these scenarios reflects the range of potential impacts on switching, and linked to this, the impacts on fixed tariff prices.

In Chapter 8 we have presented a range of uncertainty around the switching impacts. This suggests that if the switching impact was at the lower end of the potential range (a 10% reduction in switching at our chosen cap level), suppliers would be at greater risk of market exit as it would be less likely that they could increase fixed tariff prices without losing a large number of customers through switching. Conversely, if the switching impact was at the higher end of the potential range (a 40% reduction in switching at our chosen cap level prior to any fixed tariff price changes), there would be a greater likelihood of price convergence among more suppliers, meaning higher bills for fixed tariff customers but less of a risk to suppliers.

We have also considered the uncertainty relating to how long the cap will be in place. This could affect the impact on market entry and exit and investment in innovation by suppliers as a longer cap period would delay the relatively higher returns that may be achievable following the removal of the cap.

[4] From 2020 we are required to produce a report to the Secretary of State for each year that the cap is in place, on whether conditions are in place for effective competition. The cap will be removed once the Secretary of State considers the conditions for effective competition are to be in place, or by the end of 2023.
[5] CMA (2016) Energy Market Investigation. Page 59.

In addition to these uncertainties, there are a number of potential risks and unintended consequences of the default tariff cap. The most significant of these are considered to be:

- The risk of a reduction in customer service levels in response to reduced supplier revenues and profits.
- The risk of higher energy bills for some default tariff customers, either as a direct or indirect impact of the cap.
- The risk of higher energy bills for fixed tariff customers.
- The risk of market exit by suppliers making up a large proportion of the market, leading to disruption to consumers.

These are detailed further in Chapters 5 and 6.

Will the policy be reviewed?	**If applicable, set review date: month/Year**
Yes	From 2020 we are required to produce a report to the Secretary of State for Business, Energy and Industrial Strategy for each year that the cap is in place, on whether conditions are in place for effective competition. We also expect that in this report we will also look at the state of the market with the cap in place.

Is this proposal in scope of the Public Sector Equality Duty?	**Yes**

Summary of impacts

The table below sets out the monetised and non-monetised impacts of a default tariff cap set at different levels. It provides a high level summary only. Details of the analysis and evidence that was used to assess the impacts reported can be found within the Evidence Base that makes up the remainder of this appendix.

The monetised impacts presented below represent the NPV of estimated impacts of the cap in 2019 and 2020 and take into account the current trends in the number of default and fixed tariff customers over time and the lag that will apply to any adjustment to fixed tariff prices. Appendix 11.4 presents a more detailed summary table of impacts in 2018 prices in NPV terms.

The range of net customer impacts represents what we consider to be the limits of the potential outcomes of the cap. For our chosen option we expect the impact to be somewhere in the middle of the range. For option 1 we would expect the impact to be closer to the bottom of the range presented. For option 3 we would expect the impact to be closer to the top of the range presented for that option.

Options	Direct impact on default tariff customers (NPV in 2018)	Net customer impact (NPV in 2018)	Key considerations
Option 2 (chosen option)	£2,269m	£1,178m to £2,297m	- Significant direct savings to default tariff customers, and distributional benefits to vulnerable customers. - Reduced price differentials between fixed tariffs and SVTs may reduce the number of switches by up to 50%.[6] - Reduced engagement could allow suppliers to increase fixed tariffs in order to offset lost revenue from default tariffs. - Even if fixed prices increase to the cap, four of the largest suppliers are expected to need to improve efficiency in order to make normal profit under the cap. If efficiency gains are achieved, this would have long term benefits to consumers. - We expect some suppliers to continue to price low to attract engaged customers and gain market share.
Option 1	£3,057m	£2,544m to £3,133m	- There would be greater short term benefits to current default tariff customers, but greater risks in terms of supplier financeability and customer engagement and switching. - Reduced price differentials between fixed tariffs and SVTs may reduce the number of switches by up to 55%. - A greater reduction in consumer engagement could allow suppliers to increase fixed tariff prices to a greater extent in order to offset lost revenues from default tariff customers. - Increased efficiency challenge to suppliers relative to option 2. Some efficient suppliers could be unable to make normal profits

[6] Based on 2017 analysis.

			under this option, for instance because of their customer bases. - Suppliers will have less opportunity to compete on price because of a reduced price differential between SVT and fixed price tariffs.
Option 3	£1,619m	£45m to £1,638m	- Savings to default tariff customers would be lower than in options 1 and 2. - Reduced price differentials between fixed tariffs and SVTs may reduce the number of switches by up to 45% and have less of an impact on consumer engagement than the other options. - A smaller reduction in consumer engagement means competitive constraints would be maintained to a greater degree, thus restricting the ability of suppliers to increase fixed tariff prices without losing customers due to them switching to cheaper tariffs. - Suppliers' revenues and profits would be less severely impacted compared to option 2. Price competition in the market is expected to be less impacted.
Option 2b	£2,269m	£1,178m to £2,297m	- Suppliers with a higher proportion of standard credit customers will see a greater negative impact on revenues and profits than those with more direct debit customers. - Standard credit customers will save more at typical consumption compared to direct debit customers. - Standard credit customers are, on average, more likely to be fuel poor than direct debit customers, meaning that there would be some distributional benefits. However, in absolute terms more direct debit customers are fuel poor than standard credit customers.[7]

[7] BEIS: Fuel Poverty Statistics. Page 56.

Evidence base: Contents

1. Context

This chapter explains the context for the impact assessment, including the background to the implementation of the default tariff cap and the policy objectives its introduction is seeking to achieve.

Problem under consideration

1.1 In July 2018 Parliament passed legislation for the introduction of a temporary cap on standard variable and default tariffs ('the default tariff cap'). The Domestic Gas and Electricity (Tariff Cap) Act created a new duty for Ofgem to design and implement the cap as soon as practical after the Act had passed.

1.2 The Domestic Gas and Electricity (Tariff Cap) Bill Explanatory Notes[8] set out the background to the energy market and context and rationale for the introduction of the default tariff cap.

1.3 The Great Britain (GB) retail energy market[9] ('the market') is made up of approximately 28 million electricity and 23 million gas meter points as on February 2018,[10] with domestic consumers spending approximately £30bn[11] on their gas and electricity bills per annum.

1.4 Tariff prices change frequently over time. At the beginning of 2018, the weighted average SVT across all suppliers was approximately £1,125. We expect that by the point of implementation of the cap this price will have risen further due to increases in the underlying costs of supplying energy. In particular, wholesale prices, which make up the largest part of a customer's bill, have increased by over 20% since April.

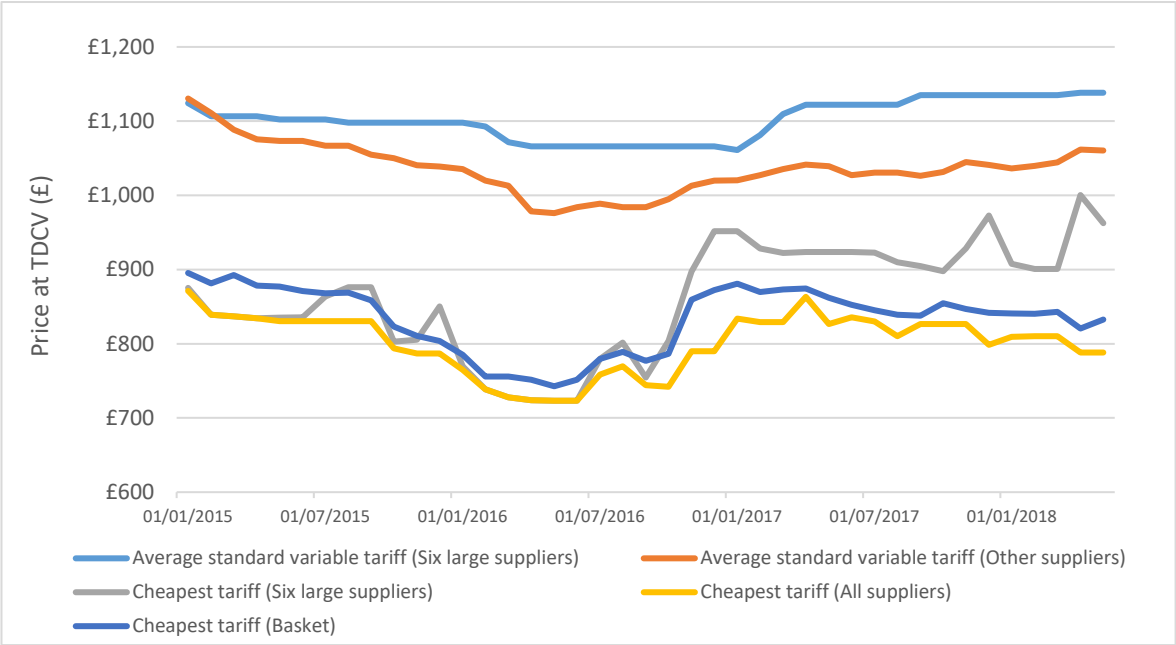
1.5 The market features two distinct tiers: 'default tariffs' (either a standard variable rate[12] tariff (SVT) or a default rate[13] fixed tariff) and active choice fixed term tariffs ('fixed tariffs').[14] As of April 2017, approximately 60% of customers were on default tariffs, despite fixed tariffs tending to offer lower prices to customers that actively look for lower prices.

[8] Parliament. 2018. Domestic Gas and Electricity (Tariff Cap) Bill: Explanatory Notes.
[9] The GB retail energy market refers to the retail supply of electricity and gas to domestic customers in Great Britain.
[10] Ofgem: Retail Market. Record number of customers with small and medium sized suppliers.
[11] Ofgem: State of the market report 2017.
[12] 'Standard variable rate' means a rate or amount charged for, or in relation to, the supply of gas or electricity that is not fixed for a period specified in a contract.
[13] 'Default rate' means a rate or amount charged for, or in relation to, the supply of gas or electricity under a contract that applies if the customer under a contract fails to choose an alternative rate.
[14] Fixed energy tariffs are a type of gas and electricity tariff that provide a locked-in rate per kilowatt hour for a designated term.

1.6 SVTs are the primary default tariff that will be impacted by the default tariff cap. As of May 2018, the average price of the six largest suppliers' SVTs stood at £1,138 based on the Typical Domestic Consumption Values[15] (TDCV, or 'typical consumption') for customers paying by direct debit. The average SVT of all other suppliers in the market was approximately £1,060.

1.7 The differential between fixed tariff prices and SVT prices suggests that competition for engaged customers has kept competitive pressure on fixed tariff prices.[16] As of May 2018, the cheapest fixed tariffs offered by the six largest suppliers stood at £963,[17] while the average basket of the market's cheapest tariffs stood at £833.[18]

Figure A11.1: Tariff prices over time, 2015-2018



Source: Ofgem Retail Market Indicators

1.8 Figure A11.1 above shows SVT prices compared to the cheapest tariffs on the market for the retail energy market since 2015. This illustrates changes to energy prices over time and the differential between energy prices paid by customers on different tariffs.

1.9 On average, customers on SVTs are paying considerably more than those on the cheapest tariffs, and those on SVTs offered by the six largest suppliers are

[15] Ofgem's Typical Domestic Consumption Values (TDCV) of 12,000 kWh of gas and 3,100 kWh of electricity, includes only tariffs paying by direct debit.
[16] Ofgem: State of the Market Report 2017. Page 31.
[17] Based on TDCV.
[18] Based on TDCV.

paying the most. In May 2018 the average SVT offered by six largest suppliers was approximately £350 (44%) more than the cheapest[19] available tariffs in the market. From January 2015 to May 2018 this differential averaged around £300.

1.10 More broadly, evidence suggests the domestic energy market is not working optimally for all household consumers. In 2016 the CMA found that domestic consumers were paying more for their energy than they would do in a fully competitive market.[20] It estimated the detriment from excessive prices to the domestic customers of the six largest energy firms to be in the region of £1.4bn a year on average between 2012 and 2015.

1.11 Through our own more recent analysis of the detriment to default tariff customers, we estimate that in 2017, default tariff customers collectively paid £1.5bn more than they would if suppliers priced at average efficient costs, reflecting a potential competitive market outcome.[21] This is based on our analysis of efficient costs, as set out in our decision overview document,[22] and default tariff price data and is calculated on a different basis to the CMA's estimate.

Rationale for intervention

1.12 The two-tier market, and the fact that some customers are overpaying for their energy, is considered to be a result of a lack of engagement in the market by a large proportion of customers. Suppliers are able to charge these customers more because they are confident that they won't switch to an alternative supplier.

1.13 The underlying causes driving this lack of engagement were identified by the CMA to be:[23]

a. the lack of quality differentiation of gas and electricity, which may reduce interest in engaging in the market

b. a lack of awareness by customers about the amount of energy they use, and the subsequent opacity of energy bills, and

[19] Ofgem Retail Market Indicators: As of May 2018, the differential between the average direct debit dual fuel SVT of the six largest suppliers (£1,138) and the market cheapest tariff (£788) was £350.
[20] CMA (2016) Energy Market Investigation.
[21] This is estimated based on the difference between average default tariff prices and our efficient cost benchmark, at TDCV, in 2017 and customer numbers for 2017 reported in 2017 prices.
[22] We estimate average efficient costs across suppliers to be equal to £967 at TDCV in 2017. See Overview documents for more detail.
[23] CMA (2016) Energy Market Investigation.

c. actual and perceived switching costs, including the time taken to switch and a lack of understanding of what the best deal is.

1.14 These factors act as barriers to competition and allow, particularly large suppliers with whom customers may have brand loyalty, to exploit their position through price discrimination.[24]

1.15 While there have been some improvements in switching over the last few years, with the number of customer accounts switching supplier increasing steadily from 1.9 million in Q1 2016 to 2.2 million across Q1 2018,[25] more than half of customers are still on default tariffs.

1.16 We have been undertaking a co-ordinated programme of initiatives to address barriers to engagement, including: reforms to the switching process; reforms to the rules covering how suppliers communicate with their customers; development of a disengaged consumer database service; and a programme to develop, test and implement more effective prompts for customers to engage in the retail market.[26]

1.17 However, these measures will take time to have effect.

1.18 We have already provided temporary protection to a proportion of the market in the form of a safeguard tariff for over four million PPM customers from April 2017 and the extension of this on 2 February 2018 to almost one million vulnerable customers who are recipients of WHD.[27]

1.19 However, these protections are limited in scope. It is government's view that without further intervention less engaged customers not eligible for these safeguard tariffs will continue to lose out before the benefits of our market-based initiatives take effect.

1.20 Moreover, households on the lowest incomes are more likely to be disengaged, and therefore more likely to lose out from uncompetitive pricing.[28] The government considers that it is inequitable that 11 million households, many of whom are vulnerable, remain unprotected and on poor value tariffs.[29]

1.21 The government has decided that a temporary default tariff cap is, therefore, needed to protect these customers until the conditions for effective competition are in place. Responding to this identified need, in October 2017 the

[24] CMA (2016) Energy Market Investigation. Pages 38-39.
[25] Ofgem: Retail Market Indicators.
[26] Ofgem: Increased Consumer Engagement.
[27] Ofgem: Safeguard tariff (or 'price cap').
[28] Ofgem (2017) Consumer engagement survey.
[29] Department for Business, Energy & Industrial Strategy (BEIS), 2018. Domestic Gas and Electricity (Tariff Cap) Bill: impact assessment. February 2018.

government announced that it would publish a Draft Bill to put a price cap on energy bills. The Bill received Royal Assent in July 2018 to become the Act.

Ofgem's role and objective in implementing the default tariff cap

1.22 The Act creates a new duty for Ofgem to design and implement the default tariff cap.

1.23 The Act's primary objective is that the cap should be designed with a view to protecting current and future consumers paying default tariffs.

1.24 When setting the cap, the Act also requires us to have regard to four other matters:

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

1.25 Under the Act, the default tariff cap will be temporary, and is due to end in 2020. In 2020 we must review whether the conditions are in place for effective competition, and publish a report, including a recommendation on whether the cap should be extended. The Secretary of State for the Department for Business, Energy & Industrial Strategy (BEIS) will then decide whether to extend the cap for an additional year. If the cap is extended, we will repeat the review cycle in 2021 and again in 2022. If extended in 2022, the cap will have effect for the year 2023 and will cease to have effect at the end of that year.

1.26 The Act states that the cap will not apply to customers covered by the PPM cap.[30] The Act also allows us to exempt certain SVTs if they appear to us to support renewable energy or vulnerable customers.

2. Approach to the final impact assessment

This chapter explains the purpose and scope of the impact assessment and our approach to our analysis.

[30] These customers will continue to be protected by the PPM cap. The PPM cap was designed by the CMA, and implemented and updated by Ofgem. It protects PPM customers on non-SMETS2 prepayment meters, and ends at the end of 2020.

Overarching approach to the final impact assessment

Purpose of this document

2.1 This final impact assessment is an update to our draft impact assessment of the default tariff cap published as part of our statutory consultation in September 2018.[31] It aims to identify and assess the effects and impacts of a set of options for the level of the cap on customers, industry participants, Government and Ofgem, and the environment.

2.2 The analysis presented has been updated to reflect the final decision on the default tariff cap in the first period of the cap and the methodology for setting the cap as presented in Appendices 1 and 2, as well as information and evidence provided to us by respondents to this consultation.

Updates to reflect the final decision on the initial cap level and methodology

2.3 Our analysis in this impact assessment is based on the cap level if applied in 2017. Our estimate of the efficient frontier has changed by -£8 in 2017 terms since the statutory consultation to reflect improvements in the methodology, and no changes to the value of the headroom allowance. Specific changes are discussed in the relevant decision document appendices and summarised in the overview. The absolute value of the headroom allowance has remained the same at £10 in 2017 terms,[32] meaning a headroom allowance percentage of 1.46%.

2.4 The cap levels presented in this impact assessment reflect those that would be applied in the first cap period. The efficient frontier in the first cap period has increased by £1 in the first cap period compared to the cap level proposed within our statutory consultation, from, £1,136 to £1,137 for dual fuel direct debit customers at typical consumption.

2.5 The difference in the changes in the cap level since our statutory consultation for the cap in 2017 terms and for the cap for the first cap period is due to the inclusion of changes to smart metering costs and error correction relating to the smart metering allowance, in the first cap period, which are not applicable to the 2017 values.

2.6 In addition to presenting the updated numbers and findings throughout the impact assessment, we have also set out where the analysis has changed compared to the draft impact assessment and why. A summary of the changes that have been made, and where these are set out in the impact assessment, are detailed below.

[31] Ofgem (2018) Default Tariff Cap: Statutory Consultation. Appendix 11 – Draft impact assessment.
[32] For a dual fuel, direct debit customer at TDCV consumption.

Changes to the analysis undertaken on the potential impact of the default tariff cap

2.7 We have added additional detail to our analysis of the impact of the default tariff cap in the following areas:

- Changes to fixed tariff prices, including the offering of low priced fixed tariffs offered to new customers only (Chapter 4) and the impact of this on competition (Chapter 6).
- Administration costs, with a qualitative consideration of the potential requirement for some suppliers to implement new IT systems (Chapter 4).
- Equity valuations and investment, including the subsequent impact on public shareholders and investment, and drawing on market analyst reports to supplement our analysis (Chapter 4).
- Quality of customer service, to provide further detail on the extent to which customer service could be impacted, and customer choice for vulnerable customers (Chapter 6).
- Smart meter rollout, including consideration of the impact on customers if smart meter rollout was delayed (Chapter 6).
- Analysis of the impact of the default tariff cap on security of supply (Chapter 7).
- Analysis of the impact of the default tariff cap on suppliers' workforces (Chapter 7).

2.8 Further details on all of the responses received and how we have considered these can be found in Appendix 11.1 of this document.

Consideration of policy options

2.9 The Act places a duty on Ofgem to implement a price cap on default tariffs to meet the objective set out in the Act, and in doing so to have regard to the four matters in the Act.

2.10 Our impact assessment, therefore, assesses the relative impact of a set of policy options relating to the design of the default tariff cap against a baseline market position (the baseline scenario) in which no price cap is implemented beyond those price caps already in place – namely the PPM safeguard tariff and the vulnerable customer safeguard tariff. This baseline scenario (where the default tariff cap is not implemented) is not a scenario that could happen since the Act requires Ofgem to implement the default tariff cap. Therefore, it is not

presented as a policy option, rather it provides the basis for the measurement of the impact of the options for the design of the cap.

2.11 Within our statutory consultation we detailed a set of policy options relating to the overall level of the cap and the corresponding level of headroom above the estimated efficient level of costs.[33] These options are presented in the subsection below.

2.12 The principles behind the options presented in this final impact assessment remain the same as those presented in the draft impact assessment accompanying the statutory consultation. However, the value of the cap associated with each option has changed due to adjustments to the methodology and assumptions used to estimate the efficient frontier and the headroom allowance based on the additional information and evidence provided by respondents, and further analysis as a result of this, as summarised above and set out in Appendix 2 – Cap level analysis and headroom.

2.13 Our estimate of the efficient benchmark is consistent across each of the options. We have estimated this based on comprehensive assessment of supplier cost data and have reached an objective best estimate of the cost to an efficient supplier of supplying a customer. We, therefore, do not consider there to be any optionality with this element of the cap, as we consider that other methodologies for setting this benchmark, which may produce a different value, would not provide as reliable an estimate of efficient costs.

Cap level options

2.14 In our May consultation we presented four illustrative scenarios for the headroom allowance equivalent to £0, £35, £70 and £110 above an efficient benchmark, in 2017 terms, where the efficient benchmark represented a benchmark based on suppliers with the lowest costs in the market (the efficient frontier). These options each prioritised the objective and matters to which we must have regard to differing degrees. For modelling purposes, we used the PPM cap as of April 2018, adjusted for payment type (and excluding headroom) as our baseline.

2.15 We set out in our May consultation our consideration that a headroom of £110 would provide savings to significantly fewer customer accounts than other levels of headroom. We consider that at this level of headroom the cap would not meet the ultimate aim of the Act to provide protection for customers. In our draft impact assessment that accompanied our statutory consultation we therefore considered three cap levels ranging from £0 and £70 above the efficient cost frontier, in 2017 terms. The equivalent uplift at implementation is between £0 and £75 for direct debit dual fuel customers at implementation, with a central option reflecting our chosen cap level £42 above the efficient frontier.

[33] See Appendix 2 to our statutory consultation.

2.16 The options presented in this final impact assessment continue to reflect the same levels of headroom allowance above the efficient cost frontier, but the values have been updated to reflect adjustments to our estimate of efficient costs. The associated values of the cap for direct debit dual fuel customers at typical consumption for these options are presented as option 1, option 2 and option 3, detailed in Table A11.2 below.

2.17 While we are only considering three discrete options in this impact assessment, in practice, when making our policy decisions, we did not consider single levels of headroom allowance. Rather, we considered a spectrum of levels of headroom, and therefore cap levels, and chose a cap level that we consider meets the objective of the Act, whilst having regard to the four matters in the Act.

2.18 The cap that will be implemented in January 2019 for the initial period is reflected in option 2. This cap level provides a headroom allowance of £42 for direct debit dual fuel customers at typical consumption on top of the efficient cost frontier.

Payment level uplift options

2.19 In this impact assessment we also consider options for the apportionment of costs relating to different payment methods (payment method uplift). These do not affect the aggregate impact of the cap, only the distribution of impacts across consumers and suppliers. We therefore consider our alternative payment method uplift option as a sub-option against our chosen cap level.

2.20 In our May consultation we considered three options relating to how we could apportion costs related to bad debt, working capital and other associated administrative costs between the two payment methods:

1. two caps, with all additional cost categories allocated to standard credit customers

2. a single cap, that reallocates all three additional cost categories

3. two caps, with working capital allocated to standard credit customers, and the other categories allocated between the two payment methods.

2.21 In our May consultation, we consulted on different approaches to how we might allocate or spread the additional costs of standard credit customers. We proposed allocating working capital costs to standard credit customers only. We also proposed spreading all of the costs of bad debt and administrative costs across all customers. Our rationale was that we did not believe that standard credit customers who do not exhibit characteristics of other customers in the group should be held solely responsible to bear those costs.

2.22 The allocation of costs in this way resulted in a payment method uplift of £32. This option was presented as option 2b in our draft impact assessment accompanying our statutory consultation and we apply the same value of the differential in option 2b in this impact assessment.

2.23 Based on the responses to our May consultation, we also considered an option that allocates all of the additional working capital costs to standard credit customers and spreads 40% of the additional bad debt and administrative costs across all customers. This resulted in a payment method uplift of £83 at implementation, including EBIT, VAT and headroom at our proposed cap level. We presented this option for payment method uplift within options 1, 2 and 3 in our draft impact assessment.

2.24 Within this impact assessment we maintain these options, with a chosen payment method uplift of £83 at our chosen cap level at implementation.[34] The equivalent value, adjusted for the overall cap level, is included in options 1 and 3.

Summary of policy options considered in this impact assessment

2.25 A summary of the options considered in this impact assessment is presented in Table A11.2 below. The cap levels presented reflect the values at implementation of the cap.

Table A11.2: Policy options – initial cap level

Cap level option	Cap level (Direct Debit TDCV)	Cap level (Standard Credit TDCV)	Weighted average cap level (TDCV)
Option 1	£1,095	£1,176	£1,116
Option 2 (chosen option)	£1,137	£1,221	£1,159
Option 3	£1,170	£1,256	£1,192
Option 2b	£1,151	£1,183	£1,158

Source: Ofgem

2.26 The cap level reported in this options table is a national average cap level. This is the level that we use in our analysis of impacts. However, in practice the cap level varies by region due to variation in network charges reflecting the costs of transporting the energy from the generation source to the customer. We consider the impact on customers, dependent on region in Chapter 5.

[34] See Appendix 8 – Payment method uplift. The difference between the direct debit level of the cap and the standard credit level of the cap for dual fuel customers at TDCV is £84 in Table A11.2 due to rounding.

2.27 In this impact assessment we focus our analysis on the impact of our chosen cap level (option 2), and accompany this with an assessment of how the impacts would vary with the alternative cap level options considered (option 1, reflecting a lower cap level and option 3, reflecting a higher cap level).

2.28 We consider option 2b, relating to the payment method uplift, in Chapter 4, as part of our consideration of the impact on suppliers and in Chapter 5 as part of our consideration of the impact on consumers.

Determining the baseline for assessment of impacts

2.29 As noted above, our impact assessment assesses the relative impact of a set of policy options relating to the design of the default tariff cap against a baseline scenario in which no price cap is implemented beyond those price caps currently operating in the market.

2.30 We make assumptions about the baseline scenario in order to measure the impact of the policy options considered relative to what would have happened had no cap been implemented. This allows us to compare the relative impacts associated with different policy options as well as to understand the overall impact of the chosen default tariff cap.

2.31 Due to the complexity of the retail energy market dynamics, in order to estimate the parameters of the baseline scenario, we need to make a number of simplifying assumptions. We have based our assumptions on recent trends and our current view of the market. Our assumptions are set out below:

Customer numbers (see Chapter 3 for more details)

- Our baseline estimates of default tariff customer numbers are based on the trend in those customer numbers from June 2016 to April 2018 continuing forward over the price cap period.
- Our estimates of fixed tariff customer numbers are based on the trend in fixed customer numbers from June 2016 to April 2018 continuing forward over the price cap period.[35]
- These estimates of customer numbers include an assumption of a continuing upward trend in total retail energy customer numbers based on the trend from June 2016 to April 2018 continuing forward over the price cap period.
- Current non-smart PPM customer numbers will reduce over time as smart meters are rolled out, and these customers would be subject to the PPM safeguard tariff until 2020. We assume this reduction will be in line with

[35] This is based on the trend in SVT customer numbers and total customer numbers.

the expected profile of smart meter rollout based on projected smart meter rollout profiles (see Appendix 7 – Smart metering costs).

- The number of vulnerable safeguard tariff customers (those in receipt of the WHD) is assumed to stay constant over the price cap period. This assumption is applied because government committed to extending the vulnerable customer safeguard tariff to a wider group of vulnerable customers if the default tariff cap were delayed.[36] Given that this policy has not been developed, and we do not know what the cap level applied would be, we have assumed it would be equivalent to the existing vulnerable customer safeguard tariff. We assume that WHD customers will be subject to the vulnerable customer safeguard tariff until December 2019[37] and that beyond this, in the absence of the default tariff cap, they would be subject to longer term price protection, assumed to be at the same level as the default tariff cap.

Suppliers

- Our analysis is based on supplier data provided by a combination of large, medium and small suppliers for calendar year 2017 in response to our request for information (RFI). This includes the six largest suppliers. We assume that costs and revenues scale with projected changes in total customer numbers. We adjust 2017 revenues and profits to take into account the estimated revenue impact of the vulnerable customer safeguard tariff cap that came into place in February 2018. We assume that suppliers' profit margins would otherwise be the same as in 2017 in the absence of the cap.

Tariff prices

- Analysis of the impacts of the cap is based on baseline market data, including tariff prices, from 2017.[38] We have assumed that baseline tariff prices would vary in line with efficient costs, as measured by the efficient cost benchmark, over the period of the cap, and that the profile of customers across different default tariffs would remain constant.

- As the cap level will also vary in line with efficient costs, we assume that the energy bill impact per customer based on typical consumption would remain constant over the period of the cap. In practice we are aware that default tariff prices do not closely track marginal costs. For example, we note that since 2017 default tariff prices have increased at a slower rate than wholesale costs. However, we are unable to predict future changes in domestic retail energy prices in the absence of the cap, and changes relative to costs could be positive or negative. We therefore assume the

[36] Ofgem (2018) Update on our plans for retail energy price caps.
[37] The assumption that these customers would be otherwise protected biases the estimated consumer benefit of the cap downwards by approximately £70m in the period from January 2019 to December 2020.
[38] Average across 2017.

ratio of prices to costs remains the same as in 2017 for the purposes of our analysis.

Switching rates

- Our assumption of the number of customers on default tariffs includes an assumption that the baseline annual increase in switching would continue over the period of the cap, equal to the average rate of increase between June 2016 and April 2018. This is not an explicit assumption but is reflected in the change in the relative numbers of fixed and default tariff customers over time.

Key impacts and stakeholders identified

2.32 We have identified the expected impacts of the default tariff cap and those stakeholders that will be impacted based on a combination of economic theory, stakeholder consultation, empirical evidence from other price regulation in the UK and internationally and evidence from wider relevant academic literature. Details of our evidence sources can be found in paragraphs 2.49 to 2.50.

2.33 We have categorised the impacts of the default tariff cap based on type of stakeholders affected. Below we set out a high level description of the nature of impacts covered in this impact assessment by category. These impacts include direct impacts and indirect impacts. Direct impacts are considered to be immediate and unavoidable first round effects which occur as a direct result of the implementation of the default tariff cap. Indirect impacts are considered to be second order effects that occur as a result of reactions to the first round effects. Our full analysis of these impacts and the evidence used to form our assessment are detailed in the sections noted below.

2.34 Impacts on suppliers (Chapter 4):

- Direct impact: Suppliers will have to comply with the default tariff cap by reducing the price of any default tariffs above the cap to the level of the cap. This will directly reduce their revenues from these tariffs. At the same time suppliers may incur additional costs, eg from the administration of implementing the cap, suppliers' cost of financing, suppliers' equity valuations and the potential increase in the cost of purchasing wholesale energy. These impacts combined will affect supplier profitability, all else being equal.

- Indirect impact: Suppliers may limit their direct revenue losses by increasing prices of fixed tariffs that would be priced below the cap in the absence of the cap or by reducing operating costs. This would increase profits relative to the direct impact. Supplier revenues will also be impacted by any changes to customer switching or consumption as a result of changing prices.

2.35 Impacts on consumers (Chapter 5):

- Direct impact: Default tariff customers currently paying more than the cap level will be directly impacted by the change in suppliers' pricing of default tariffs and will see a fall in their energy bills. This will generate distributional benefits as vulnerable customers are more likely to be on high-priced SVTs and spend a higher proportion of their income on energy.[39] Therefore, savings to these customers carry a greater weight when considering welfare impacts.

- Indirect impact: Reflecting the potential pricing strategy of suppliers, customers that would, in the absence of the cap, pay less than the price cap level (either on default or fixed tariffs) may see an increase in their bills if suppliers seek to limit their direct revenue losses by increasing prices of fixed tariffs that would otherwise be priced below the cap. As a result of suppliers looking to cut costs, if suppliers reduce spending in certain areas, there is also a risk that customers face a reduced quality of service.

- In addition, a reduction in the differential between default and fixed tariff prices could reduce switching rates and general customer engagement. This could generate a loss to customers who, in the absence of the cap, may have switched to a cheaper tariff. However, reduced engagement could stem from customers feeling protected under the cap and could lead to increased confidence in the energy market longer term. Furthermore, there could be a benefit to customers from not feeling the need to spend time searching for cheaper deals.

- To the extent that the default tariff cap increases energy consumption due to lower tariff prices, particularly among low income groups, there would be expected to be welfare benefits such as improved health outcomes from better heating.

2.36 Impacts on competition and innovation (Chapter 6):

- There may be indirect impacts on competition and innovation in the domestic energy market. As noted above, through its impact on price dispersion the cap may reduce price competition and reduce customer engagement as there is less gain to be made from comparing prices and switching.

- In addition, the impact on supplier profitability could put some suppliers in financial distress which could generate a risk of exit from the market. At the same time, reduced opportunities to achieve above normal profit may deter market entry.

[39] Ofgem: Providing Financial Protections for Vulnerable Customers.

- The cap could encourage suppliers to innovate more rapidly to remain competitive, and encourage the entry of firms with innovative new business models. But it could also reduce incentives to enter the market because of reduced opportunities to earn above normal profits.

- Longer term, beyond the period of the cap, there should be benefits to customers of suppliers becoming more efficient as a result of the cap. However, there may also be potential longer term negative impacts when the default tariff cap is removed due to legacy effects on engagement and competition.

2.37 Wider impacts (Chapter 7):

There are expected to be wider direct and indirect impacts on other stakeholders in the market and more widely. We consider the following impacts within the scope of the IA:

- Wholesale market: The system of updating the cap will impact how suppliers hedge in the wholesale market. This is likely to affect the cost incurred by suppliers, as noted above.

- Third party switching services and supplier service providers: These stakeholders may be indirectly impacted through reduced revenues as a result of any reduction in switching resulting from the cap.

- Government and regulators: Ofgem will incur direct costs in implementing and monitoring the default tariff cap. There is also expected to be an impact on HMRC's VAT receipts as a result of changes in customer bills. government corporation tax revenues could also be impacted through any reduction in suppliers' profits as a result of the cap.

- Environment: Any change in energy consumption levels will impact the associated greenhouse gas emissions.

- Security of supply: A change in energy consumption levels could impact how well the supply of energy matches demand, potentially increasing risks to security of supply.

- Employees: Suppliers may attempt to cut controllable costs as a result of the default tariff cap. This may lead them to reduce pay, benefits, and other conditions of employment in order to achieve cost savings, or to reduce the size of their workforce. There may also be job losses associated with market exit as a result of the cap.

Methodology

Overarching principles of the impact assessment

2.38 This impact assessment has been conducted in accordance with the Ofgem Impact Assessment Guidance.[40,41] In developing the impact assessment we have also drawn on the HM Treasury Green Book,[42] BEIS and Regulatory Policy Committee (RPC) impact assessment guidance[43] and the CMA Competition Impact Assessment Guidelines.[44]

2.39 In developing our methodology, we have, where sufficient data and evidence allows, sought to assess impacts quantitatively, assigning monetary values where appropriate. Our quantitative analysis is of the impact of the cap as though implemented in 2017. Our analysis, therefore, assumes a steady state throughout the price cap period and does not account for potential market fluctuations or shocks that could occur.

2.40 We consider that the direct impact of the default tariff cap can be estimated with a reasonable degree of certainty, though is subject to the assumptions outlined in paragraph 2.31 above, in particular, changes to customer numbers and tariff prices in the absence of the cap. However, there is significant uncertainty surrounding the indirect impacts. These indirect impacts will depend on the response to the cap by suppliers and consumers, and the subsequent market dynamics.

2.41 Therefore, whilst we have sought to assign monetary values to the indirect impacts where possible, the quantification of these impacts should be seen as indicative only. We set out our approach to dealing with uncertainty in paragraphs 2.51 to 2.56.

Overarching quantitative methodology

2.42 We take the following overarching steps in our quantitative analysis:

a. We gathered market data for 2017[45] relating to customer numbers by tariff, energy consumption, supplier revenue, costs and profit.

b. We analysed this data from 2017, to estimate the impact of the cap in 2017 based on the 2017 initial baseline cap value. We have assumed the

[40] Ofgem (2016) Impact Assessment Guidance.
[41] We are conducting the impact assessment in accordance with the Ofgem Impact Assessment Guidance insofar as that guidance is relevant and consistent with the distinct legal framework envisaged by the draft default tariff cap legislation.
[42] HM Treasury (2018) The Green Book: Central Government guidance on appraisal and evaluation.
[43] Various guidance available from BEIS and the RPC.
[44] CMA (2015) Competition impact assessment. Part 2: guidelines.
[45] See Appendix 2 to our statutory consultation for more details on the sources of data used.

impact of the cap, in terms of the differential between the cap level and what suppliers' prices would have been in the absence of the cap, remains constant over time. In practice there will be variation in this differential over time, in both directions, as default tariff prices do not always perfectly track costs, we think this is a reasonable assumption to make.

c. We made projections for changes in the number of default tariff customers, fixed tariff customers and total customer numbers on an annual basis from 2017 to 2023, and excluded WHD customers, for whom we assume the cap impacts are not additional.

d. We used projected future default tariff customer and fixed tariff customer numbers to scale expected annual default tariff customer and fixed tariff customer impacts over time.

e. We estimate other monetised impacts based on a per customer basis and scale based on projected customer numbers.

f. We adjust fixed tariff customer impacts for the potential lag in any adjustment to fixed tariff prices.

g. We have converted all monetised impacts into 2018 prices based on inflation of 2.32%.[46]

h. We have discounted all monetised impacts to a present value in 2018 using the discount rate for social time preference (3.5%), as recommended by HM Treasury in the Green Book.[47] We have calculated the NPV of these impacts over the period of the cap based on two cap periods of January 2019 to December 2020, and January 2019 to December 2023.

i. We have summed NPVs of impacts to generate total NPVs for different stakeholder groups and for society overall.

j. We have calculated Estimated Annual Net Cost to Business (EANDCB) in line with Better Regulation Executive (BRE) methodology.[48]

2.43 Prices and per customer impacts are estimated based on the typical consumption of the average consumer based on Ofgem's TDCV as of October 2017.[49] These are industry standard values for the annual gas and electricity usage of a typical domestic consumer, reflecting median consumption levels.

[46] Office for National Statistics (2018) Inflation and prices indices: CPIH Index.
[47] See HMT Green Book pages 26-27.
[48] BEIS (2018) Better Regulation Framework: Guidance.
[49] Based on TDCV.

Throughout the impact assessment we report impacts at the market level, as well as reporting, where appropriate, the impact on the six largest suppliers. These suppliers make up approximately 75% of the domestic retail energy market[50] and therefore impacts on these suppliers provide an indication of the impacts across the suppliers that capture the majority of customers in the market. Additional detail on the approach and methodology for analysing these revenue impacts is set out in Appendix 2 of our statutory consultation.

2.44 Throughout this document we report estimated annual monetised impacts of the cap. We report this throughout the IA based on estimated 2019 customer numbers, initially with no adjustment for the expected lag in the updating of fixed tariff prices. We then make this adjustment to the annual impacts when generating our NPV estimates.

2.45 Our core analysis covers monetised and non-monetised impacts over the period of the cap from January 2019 until December 2020.[51] We also consider a scenario in which the cap is extended at each review, which captures the impacts of the cap over the full period that the cap could be in place, from January 2019 to December 2023.

2.46 We have also qualitatively assessed the longer term impacts on the market, beyond that of the two cap periods we consider. These impacts are set out in more detail in paragraphs 2.32 to 2.37.

Approach to individual analyses

2.47 The table below sets out, at a high level, our approach to each element of analysis, based on the evidence and information available to us, including whether we have conducted a quantitative analysis to monetise impacts or conducted a qualitative assessment.

[50] Ofgem: State of the energy market 2018.
[51] December 2020 being the first point at which the cap might end.

Category of impact	Overview of assessment approach
- Direct customer bill impact - Direct supplier revenue and profit impact	The monetised impact on customer bills and supplier revenues and profits is based on 'top-down' analysis using the following inputs: • Tariff data provided by a combination of large, medium and small suppliers for calendar year 2017. • Energy consumption in 2017 (Typical Domestic Consumption Values for per customer impact, and mean consumption for aggregate impact). • Customer numbers provided by a combination of large, medium and small suppliers for calendar year 2017. • The 2017 baseline cap value. • VAT rate of 5%. • Supplier revenue, cost and profitability data for 2017. Using this data we have identified the number of customers that will be directly impacted by the cap in 2018 and in each year going forward (see Chapter 3) and the average customer saving based on 2017 tariff prices and the 2017 baseline cap value. Appendix 2 of our statutory consultation provides more details of the analysis undertaken.
- Indirect customer bill impact from supplier pricing response - Indirect supplier revenue impact from supplier pricing response	We present an indicative range of monetised indirect impacts on customer bills and supplier revenues resulting from the potential scenarios for dynamic market responses to the cap. This analysis is based on two potential scenarios reflecting what we consider to be the limits of the potential market response:[52] 1. tariff prices above the cap level (including fixed tariff prices) fall to the cap, but there is no change to tariff prices below the cap level; and 2. all tariff prices converge to the cap level. For each scenario we analyse the impacts on customer bills for default and fixed tariff customers, and on supplier revenues on a supplier by supplier basis. This analysis is undertaken based on the same data used for the analysis of direct impacts. Due to the level of uncertainty associated with the market response, we do not quantitatively assess where within the range identified the impacts of each cap level will lie. We instead consider this qualitatively. Appendix 2 of our statutory consultation provides more details of the scenario analysis undertaken.
Supplier administration costs	The monetised impact of administration costs to suppliers of complying with the cap is analysed by estimating: • the increase in the frequency of updates, based on data on the current frequency of price changes and the expected frequency of cap updates; and • the average cost per customer per price update, based on a weighted average of cost estimates provided by suppliers. We then aggregated this across all customers to estimate the total annual cost.

[52] These limits assume that suppliers will not reduce fixed tariff prices or be able to maintain tariff prices above the cap level. In practice it may be possible for suppliers to move disengaged customers off default tariffs to fixed tariffs. We have not looked to include this in our scenario analysis as we do not consider that this would be widespread practice, but do identify this outcome as a potential risk in terms of the effectiveness of the cap in Chapter 8.

Category of impact	Overview of assessment approach
	We have qualitatively assessed the potential cost of IT systems updates that may be required in order to implement the cap.
Supplier cost of financing	Our qualitative analysis of the impact on suppliers' weighted average cost of capital and equity values is based on evidence from relevant academic literature and market analyst reports.
Consumption	We quantitatively assess the impact of changes in tariff prices on total household energy consumption. This analysis is based on estimated price elasticities of demand for energy sources from relevant existing studies.
Switching	We estimate the monetised impact of changes in tariff prices and the price differential on customer switching rates. We have considered a number of sources of evidence on the relationship between savings and switching to inform this analysis. Where possible, we have quantitatively derived the relationship between available savings and switching. We have also used qualitative evidence to further our understanding of the relationship between savings available and switching. We have also considered other relevant drivers of incentives to switch, such as brand preference and the 'safeguarding effect'.
Price competition	Our analysis of the impact of the cap on price competition is based on quantitative analysis of the direct and indirect impact of the cap on price differentials as well as qualitative analysis based on economic theory.
Supplier efficiency	We qualitatively assess the potential impact of the cap on supplier efficiency. This assessment is based on outcomes in terms of profitability on a supplier by supplier basis from our scenario analysis and analysis of supplier cost data compared to our efficient cost benchmark. We qualitatively consider the impact of this on customer service and suppliers' workforce.
Market exit	Our analysis of the suppliers that may be at risk of sub-normal profits and therefore potential market exit is based on profitability analysis from our scenario analysis and our consideration of potential efficiency improvements.
Market entry	We qualitatively analyse the potential impact of the price cap on the number of suppliers and nature of suppliers that may enter the market based on international evidence, economic theory and stakeholder consultation.
Innovation and smart metering	We qualitatively analyse the potential impact of the price cap on suppliers' investment in innovation, the introduction of innovative tariffs and the rollout of smart meters based on international evidence, economic theory and stakeholder consultation.
Wholesale market impacts	We qualitatively analyse the potential impact of the default tariff cap on suppliers' wholesale energy hedging strategies, wholesale market liquidity, the cost of purchasing wholesale energy and price volatility.
Security of supply	We qualitatively analyse the potential impact of the default tariff cap on security of supply, based on an assessment of the effectiveness of current mechanisms in place in the market to ensure security of supply and the expected impact of the cap on consumption.
Third party switching services	We estimate the monetised impact of the potential change in customer switching rates on third party switching service revenues. This analysis is based on the switching analysis (see above) and uses data from our consumer surveys and our annual switching monitoring data.

Category of impact	Overview of assessment approach
Government and Ofgem	We estimate the monetised administrative costs of implementing and monitoring the price cap based on Ofgem budget forecasts. Monetised VAT impacts are based on consumption analysis and using a VAT rate of 5%.
Environmental impacts	We estimate the monetised impact associated with the change in greenhouse gas emissions that arises from potential changes in energy consumption as a result of the default tariff cap. This is based on price elasticity analysis of the impact of the cap on energy consumption and BEIS guidance on valuing the emissions from greenhouse gas emissions.[53]

2.48 More detail regarding our methodology for assessing each area of impact can be found in the relevant chapters of this impact assessment, and within the appendices.

Sources of evidence

2.49 Our analysis of the impact of the default tariff cap is based on data and information gathered from a number of sources, including:

- data collected from suppliers through formal information requests
- existing energy market data held by Ofgem including data from the implementation of previous price caps
- responses to our May consultation, our five working papers and our statutory consultation
- other data provided to us by stakeholders, including price comparison websites (PCWs) and consumer groups
- market analyst reports
- academic literature and international evidence
- other publicly available information.

2.50 We reference specific evidence sources used in our analysis throughout this document.

[53] BEIS: IAG spreadsheet toolkit for valuing changes in greenhouse gas emissions.

Key risks and uncertainties

2.51 As noted above, the default tariff cap is likely to lead to complex market dynamics that are difficult to accurately model. In attempting to provide an indicative quantification of the potential indirect impacts, we have applied a number of evidence based assumptions in the analysis. These are detailed throughout our analysis.

2.52 The main material areas of uncertainty where these assumptions have been applied are associated with:

- the modelling of suppliers' indirect pricing response, and
- the impact on customer switching rates.

2.53 To reflect the uncertainties relating to the market outcomes in terms of suppliers' price responses we have undertaken scenario analysis to consider the impacts resulting from the different potential market responses. These are detailed in paragraph 4.83. We present our estimates of the monetised indirect impacts of the cap as a range reflecting the limits generated by these scenarios.

2.54 In addition, we have also conducted sensitivity analysis around our assumptions relating to the impacts on customer switching to assess the extent to which the assumptions applied influence our overall conclusions.

2.55 Beyond these uncertainties reflected in our quantitative analysis, there are further risks and potential unintended consequences of the cap.

2.56 We have considered these risks and uncertainties in Chapter 8.

Structure of our analysis of impacts

2.57 The remainder of this document sets out our analysis of the impact of the options for the design of the default tariff cap. This is structured as follows.

2.58 In Chapter 3 we set out the expected coverage of the default tariff cap in terms of the numbers of customers on default tariffs and how this is expected to change going forward (based on the baseline market trends). We also consider trends in the numbers of customers on fixed tariffs, WHD customers and non-smart PPM customers.

2.59 Chapters 4 to 7 present our analysis of the impacts of our chosen option for the design of the default tariff cap.

2.60 In Chapter 4 we estimate the direct and indirect impacts of the cap on suppliers, including impacts on suppliers' prices, revenues, costs and profitability. We

consider here how suppliers may react in response to the cap in terms of pricing of fixed tariffs and efficiency improvements.

2.61 In Chapter 5 we estimate the direct and indirect impacts of the cap on consumers, including default tariff customers and customers on fixed tariffs that may be impacted as a result of changes to tariff prices by suppliers in response to the cap. In this chapter we also consider the impact of changes in tariff prices on levels of customer switching and energy consumption.

2.62 In Chapter 6 we assess the impacts of the default tariff cap on competition and innovation. This draws on evidence from Chapters 5 and 6 in terms of price competition and customer engagement and switching. This chapter also considers impacts on non-price competition and innovation.

2.63 In Chapter 7 we assess the impacts of the cap on other stakeholders, including the impact on the wholesale market, on third party switching services, on government and regulators and the impact on the environment.

2.64 In Chapter 8 we present our sensitivity analysis around the key assumptions we have applied, as set out in paragraphs 2.42 to 2.47, relating to: the timescale for the cap; the pricing response by suppliers; the impact on switching rates; and the impact on energy consumption.

2.65 In Chapter 9 we present our conclusions in relation to the impact of the default tariff cap and why option 2 has been chosen.

2.66 We follow this with appendices which present additional evidence and analysis to support the impact assessment.

3. Coverage of the default tariff cap

This chapter sets out the coverage of the default tariff cap, the estimated number of customers affected and how this may change over time.

Scope of the default tariff cap

Customer eligibility

3.1 In order to analyse the potential impact of the default tariff cap, it is important to understand the number of customers eligible for protection. The number of eligible customers is proportional to the scale of the overall impact, influencing a range of areas such as the impacts on: supplier revenues and profitability; consumption; emissions and ultimately the scale of the total benefits for customers.

3.2 The Act places the requirement on Ofgem to design and implement a tariff cap on domestic energy SVTs and default tariffs. The Act will not apply to:

- customers on capped PPM tariffs, as these customers are covered by the PPM safeguard tariff, introduced in April 2017[54] and
- domestic customers on (non-default) fixed tariffs.

3.3 Within the retail supply market, the number of customers eligible for the default tariff cap is constantly fluctuating. This is due to a range of factors, including the number of customers actively switching away from default deals and the number of customers rolling onto default tariffs at the end of a fixed term tariff.

Assumptions around customer number projections

3.4 Due to the uncertainty around how customer numbers will change over time, we have applied a simplifying assumption that the underlying trends in the numbers of customers on eligible tariffs seen in recent years continue over the period of the cap.

3.5 We have assumed that the initial number of capped customers are those customers eligible for the default tariff cap in December 2018. While in addition, we estimate potential changes in the number of these eligible customer numbers out to December 2023. We have also not included savings to an estimated 800,000 WHD customers who are on the vulnerable customer safeguard tariff. We assume, in the absence of the default tariff cap these customers would continue to be covered by similar price protection.

3.6 Our estimates are based on the latest information available from our tariff customer number data up to April 2018. This data is based on customer

[54] Ofgem: Safeguard tariff (or 'price cap').

numbers for a combination of large, medium and small suppliers for the calendar year 2017, held on an account basis. To derive the number of individual customers, or households, from this data, we assume that the total number of individual customers or households is equal to the sum of all dual fuel and single electricity customers.

3.7 Customers on PPM tariffs are not eligible for the default tariff cap as they are already covered by the PPM safeguard tariff. However, as these customers transition to SMETS2[55] meters, they will become ineligible for the PPM safeguard tariff and may migrate on to the default tariff cap. Due to the uncertainties involved, we have not quantified how these movements could impact the number of eligible customers. This could result in our analysis underestimating the number of eligible customers over time, and therefore the customer savings that could be achieved.

Projected number of eligible customers

Projected number of eligible customers

3.8 As of April 2018, approximately 11.3 million individual customers[56] were on tariffs eligible for the default tariff cap. This data is based on the number of dual fuel and electricity accounts[57] taken from our customer monitoring data.

3.9 We estimate that in total approximately 10.7 million customers would be on eligible tariffs when the cap comes into force.

3.10 In Table A11.3 below we detail our projections of the number of customers on eligible tariffs up to December 2023. We explain how we estimated these numbers in the subsequent section.

[55] Smart metering equipment technical specifications: second version
[56] Customers on default tariffs paying by either direct debit or standard credit. Additional default customers exist on prepayment meters, and are already protected by the PPM cap. This data also excludes those customers who are already capped by the WHD Safeguard Tariff. Mixed tariff types are not included. Data based on customer numbers for 22 of the largest suppliers in the market.
[57] For total customers impacted on a market basis, we have used the sum of all dual fuel and electricity accounts to form our estimate. This includes all those customers on tariffs which are eligible for protection, but includes those customers on tariffs potentially priced below the level of the default tariff cap.

Table A11.3: Estimated default tariff customers excluding PPM customers ('Customers on eligible tariffs')[58]

Date	Dec 2016	Dec 2017	Dec 2018	Dec 2019	Dec 2020	Dec 2021	Dec 2022	Dec 2023
Eligible customers	12.8m Actual	11.6m Actual	10.7m Projected	10.0m Projected	9.3m Projected	8.7m Projected	8.2m Projected	7.7m Projected

Source: Ofgem analysis

Forming a projection

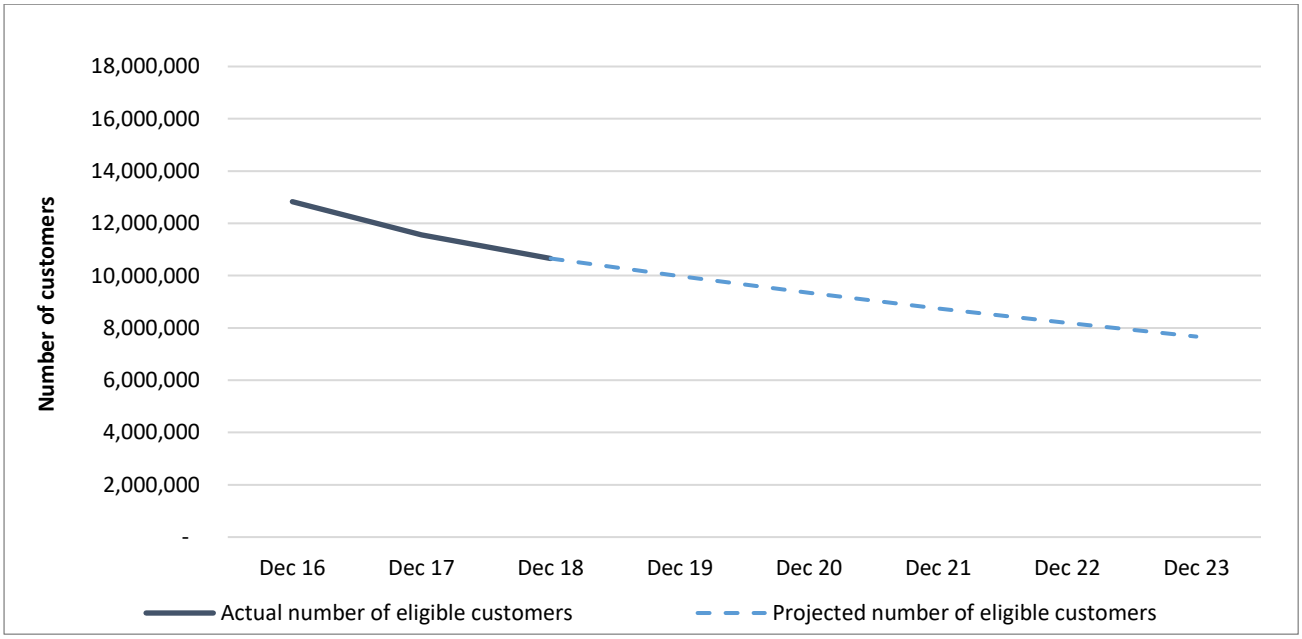
3.11 In order to estimate the potential number of customers eligible for the default tariff cap at implementation and in subsequent years, we firstly examined the baseline scenario of what might happen to customer numbers if no additional price protections were implemented, outside of those currently in place.

3.12 Between Q2 2016[59] and Q1 2018, the total number of customers on default tariffs reduced by approximately 2.0 million.[60] This reflects the combined impact of: increasing numbers of customers switching away from default tariffs; and increases to the total number of customers due to population growth. This represents a percentage change of approximately 6.4% per annum over the last two years. In the absence of the default tariff cap, we assume this trend will continue at an unchanged rate. These changes are in line with the longer term trend that we have observed in recent years, where we have begun to see more customers switch away from more expensive tariffs.[61] We apply this as a steady state trend. However, we note that there is significant uncertainty regarding how the number of eligible customers will change over time, and historically there have been fluctuations in switching rates. The counterfactual trend could be impacted Ofgem's switching programme, changes in market dynamics, and external shocks.

3.13 Figure A11.2 shows how the number of customers on default tariffs has fallen since June 2016, and our projection of this continued decrease based on this underlying trend continuing.

[58] Projected decrease of around 6.4% of eligible customer base per year. Numbers rounded to nearest 100,000. Eligible customers include all customers on default tariffs, including those on tariffs which are potentially priced below the level of the default tariff cap.
[59] The first month of data we have available is April 2016.
[60] Ofgem: Analysis of internal customer account monitoring data.
[61] Ofgem: State of the energy market 2018. Page 23.

Figure A11.2: Eligible customers for default tariff cap



Source: Ofgem analysis

Fixed tariff customers

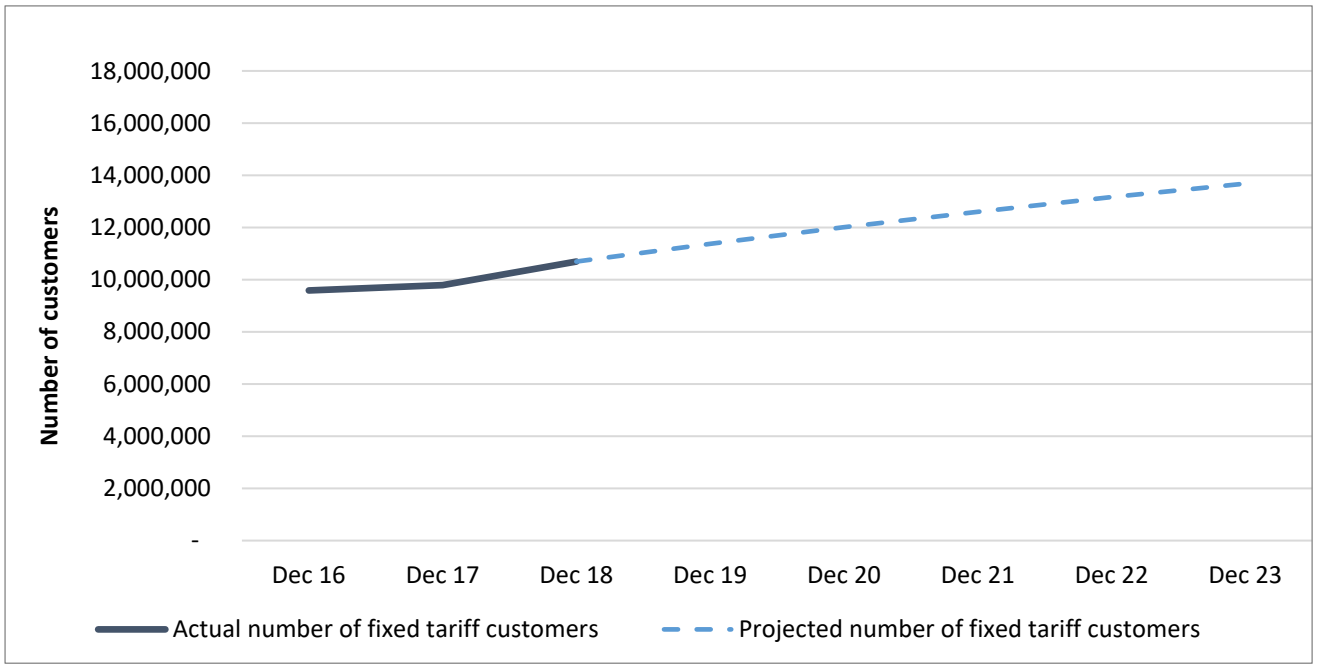
3.14 The default tariff cap could also potentially impact those customers on fixed term tariffs. As outlined in Chapter 4, in response to the default tariff cap, suppliers could seek to increase the prices of their fixed tariff offerings in order to recoup revenues lost from decreases in the prices of eligible default tariff customers.

3.15 As of April 2018, at least 9.9 million[62] individual customers were on fixed tariffs.[63]

3.16 Figure A11.3 illustrates how the number of customers on fixed tariffs is expected to change over time. In forming this projection, we assume that the 6.4% of eligible customers per year that switch away from default tariffs will transition to fixed term tariffs.

[62] Data is based on Ofgem monitoring data collected routinely. This data is based on a combination of large, medium and small suppliers in the market covering over 96% of the default tariff market. This data could therefore potentially slightly underestimate the total number of customers on fixed tariffs.
[63] As of April 2018, there are also around 300,000 default fixed term tariffs. These default fixed term tariff customers are eligible for the default tariff cap as they have not made an active choice to transition onto their fixed term deals. These customers are included in the estimated 10.7m eligible customers and not in the fixed tariff projection.

Figure A11.3: Fixed tariff customers since December 2016[64]



Source: Ofgem analysis

Renewable tariff derogation

3.17 We have decided that the default tariff cap will apply to all default tariffs, but we will provide a route for suppliers to apply for derogations for renewable electricity and/or gas default tariffs that have been chosen by the suppliers' customers. We outline this decision in Appendix 10 – Exemptions.

3.18 Suppliers are able to apply for a derogation for an SVT against detailed criteria which will be assessed by Ofgem, with appropriate applications being approved for such an exemption on a case by case basis. Ofgem may grant a derogation if a supplier demonstrates that its renewable SVT delivers on the following high-level outcomes:

- Outcome 1: the tariff is an SVT that consumers have chosen to be on.
- Outcome 2: by consumers being on the tariff, support is given to renewables to an extent that is materially greater than that which is brought about as result of subsidies, obligations or other mandatory mechanisms.
- Outcome 3: the cost to the licensee of supplying electricity/gas by virtue of the tariff is materially greater than the level of the default tariff cap for

[64] Projected increase based on all customers switching away from eligible tariffs. Numbers rounded to nearest 100,000.

reasons that are directly attributable to the support that the tariff provides to renewables.

3.19 At this stage, due to the uncertainties involved, we have not looked to estimate the number of customers on tariffs that could potentially be granted a derogation, and therefore have not accounted for these in our estimate of the number of customers that will be impacted by the default tariff cap.

3.20 Whilst this could result in our analysis slightly overestimating the number of eligible customers, we expect the number of customers on tariffs eligible for a derogation to be small as a proportion of the total coverage of the default tariff cap. For instance, we have analysed those tariffs which claim to offer 100% renewable electricity, some of which could potentially seek a derogation.

3.21 As of June 2018, there were only around 18 distinct default tariffs backed by 100% renewable electricity available on the market offered by 16 different suppliers. Most of these 16 suppliers were small suppliers (ie less than 250,00 customers). In addition, a significant proportion of these tariffs[65] were priced at levels under our chosen cap level (option 2) and therefore we might not expect these tariffs to be directly impacted by the price cap and therefore not seek a derogation.

[65] Based on tariff pricing analysis undertaken in June 2018, using our projected levels of the cap for this period.

4. Impacts on suppliers

In this chapter we estimate the monetised impact of the default tariff cap on suppliers in terms of direct and indirect impacts on prices, revenues, costs and profitability.

4.1 As noted previously, direct impacts are those impacts that are considered to be immediate and unavoidable first round effects which occur as a direct result of the implementation of the default tariff cap. With regard to the impact on suppliers, the direct impacts do not include the expected reactions of suppliers, consumers or other parties to the implementation of the default tariff cap.

4.2 Indirect impacts refer to the second-round impacts, and, in this context, relate to how market participants, including suppliers and customers, may react to the default tariff cap.

4.3 In considering the impact of the default tariff cap on suppliers, we have assessed the following:

- the impact on supplier prices, including the direct impact on the prices of default tariffs and the second-round indirect impact on fixed tariffs
- the impact on supplier revenues resulting from tariff changes as well as from changes to energy consumption and consumer switching
- the impact on supplier costs, including the direct impact on administration costs and the indirect impact on supplier costs through impacts on the cost of capital, equity valuations, and suppliers' efficiency levels
- the impact on supplier profitability.

4.4 As part of our consideration of the impacts on suppliers we also assess the impact on financeability and the potential for market exit. We have not monetised these impacts but have assessed them based on quantitative analysis. This assessment is set out in Chapters 4 and 6.

4.5 Within this analysis we do not consider any differential impact resulting from the SSE/Npower merger as we do not have any data on the merged company on which to base such analysis.

4.6 Within this section we assess the impacts of our chosen level of the cap (option 2) and compare these against the impacts of the lower and higher options described in Chapter 2 (options 1 and 3, respectively).

Direct impact on supplier prices

4.7 The default tariff cap will place a ceiling on the price a supplier is able to set for default tariffs. Therefore, the direct impact of this price cap relates to the extent to which suppliers need to reduce their default tariffs to the cap level.

4.8 Based on data on supplier prices and customers for 2017, default tariffs in scope of our chosen default tariff cap cover 45% of customers in the market, with 15% of the market covered by the PPM cap and the remaining 40% on fixed tariffs (that they have actively chosen).

4.9 The average price of a default tariff in 2017 across all domestic energy customers was £1,124 per year based on the median level of consumption. However, prices vary across suppliers and tariff types. In 2017, price dispersions between default tariffs and fixed tariffs in the market were up to £322 for the largest suppliers.

4.10 98% of default tariff customers in 2017 were on default tariffs priced above the chosen cap level, and would therefore be subject to a price reduction as a direct result of the price cap if implemented in 2017.

4.11 Through analysis of market data,[66] we estimate that, if implemented in 2017, our chosen cap would have resulted in an average reduction for a dual fuel default tariff customer currently on a tariff priced above the cap of £105 (in 2018 prices), or 10% of the average per customer revenue based on typical consumption. This is based on analysis of the impact based on 2017 tariff data and the 2017 baseline cap level. On an individual supplier basis, the extent to which tariffs would need to reduce would depend on their tariff prices at implementation of the cap. At an individual supplier level, we estimate that price reductions would be up to £174 for a typical dual fuel default tariff.[67]

4.12 We estimate that the option 1 cap level would result in an average reduction in the price of a dual fuel tariff currently priced above the cap of £146 or 14% of the average per customer revenue based on typical consumption based on our analysis of 2017 data. At an individual supplier level, we estimate that price reductions would be up to £215 for a typical dual fuel default tariff.

4.13 For a higher cap (option 3), there would be a lesser impact on the prices of default tariffs. We estimate that for this option, on average, a dual fuel tariff currently priced above the cap would reduce by £72 or 7% of the average per customer revenue based on typical consumption. Our analysis also suggests

[66] We further explain our modelling methodology in Appendix 2 of our statutory consultation. Using 2017 tariff prices, revenue, profitability and operating costs data, we have modelled the potential on impacts of the default tariff cap on prices in 2017.
[67] Assuming TDCV of 12,000 kWh of gas and 3,100 kWh of electricity.

that the impact on default tariff prices at an individual supplier level would be up to £141.

Table A11.4: Estimated direct annual reduction in default tariff prices for cap level options for an average dual fuel consumer,[68] in 2018 prices

Cap level	Option 1	Option 2 (chosen cap level)	Option 3
Average direct reduction in default tariff prices[69]	£146	£105	£72
Range of direct reduction in TDCV default tariff prices across the six largest suppliers	£106 - £215	£65 - £174	£32 - £141

Source: Ofgem analysis

Direct impact on supplier revenues

4.14 A reduction in the prices of default tariffs currently priced above the level of the cap is expected to result in a direct reduction in the revenues earned by suppliers from customers on these tariffs.[70]

4.15 The direct impact on revenues of the default tariff cap is dependent on:

- the prices of default tariffs at the time of the introduction of the cap, and
- the amount of energy supplied to customers on default tariffs, which is a function of the number of a supplier's customers that are on default tariffs and the average energy consumption of these customers.

4.16 We note that the direct impact on supplier revenues may also be dependent on the payment method differential option chosen under the cap design. In the instance that the payment method differential option does not reflect the actual difference in costs between standard credit and direct debit customers, we would expect that the impact on supplier revenues would depend on the

[68] Assuming TDCV of 12,000 kWh of gas and 3,100 kWh of electricity.
[69] The average direct impact on default tariff prices has been estimated based on the difference between the weighted average default tariff price pre-cap and post-cap from 2017 tariff data and the 2017 baseline cap level.
[70] Based on our evidence of the price elasticity of demand for energy we would not expect the consumption effect to offset the impact of lower prices on revenues. See paragraph 5.4 for details.

proportion of a supplier's customer base on each payment method. However, our chosen option for the payment differential reflects the current differential applied by suppliers to each payment method and therefore, we do not anticipate that this would impact supplier revenues.

4.17 We have analysed the direct impact on supplier revenues at the market level based on a 'top-down' model of the financial data of a combination of large, medium and small suppliers for calendar year 2017. This is detailed in Appendix 2 of our statutory consultation and its accompanying annexes. All of our analysis is based on annual data for 2017.

4.18 The six largest suppliers make up approximately 75% of the retail energy market.[71] When reporting impacts we report the impacts on the six largest suppliers alongside the market level aggregate impacts, to provide an indication of the impacts across the suppliers that provide energy to the majority of customers in the market. Additional detail on the approach and methodology for analysing these revenue impacts is set out in Appendix 2 of our statutory consultation.

4.19 Our analysis of the direct impact on suppliers' revenues, costs and profits assumes fixed energy consumption. We note that in response to a change in prices, customers may change their consumption levels. We assess the possible change in energy consumption in Chapter 5 as part of our analysis of indirect impacts given that it is considered to be a second order effect.[72]

4.20 As noted in Chapter 3, we project that as of December 2018, there will be 10.7 million customers on default tariffs that will be in scope of the default tariff cap. At our chosen cap level of option 2 an estimated 10.4 million default tariff customers will see a direct price reduction. This is based on the proportion of default tariff customers that would see bill reductions based on a cap being in place in 2017, applied to our projected customer numbers for 2019. In paragraph 4.11 we estimated that our chosen cap level would see an average reduction in prices across default dual fuel tariffs of £105 based on 2017 tariff prices and the 2017 baseline cap level, converted to 2018 prices.

4.21 Therefore, based on a cap level reflected in option 2 and fixed consumption, we estimate that supplier revenues across the market from default tariffs would fall by approximately £1,174m per annum as a direct result of the cap, representing approximately 5% reduction in total revenues across the market. This revenue impact is reported exclusive of VAT whereas the consumer bill impacts reported in Chapter 5 are inclusive of VAT. We report the VAT impact on government in Chapter 7.

4.22 The direct impact on individual suppliers depends on their default tariff prices, the proportion of their customers on each tariff, and the energy consumption of

[71] Ofgem: State of the energy market 2018.
[72] Regulatory Policy Committee (2016) Case histories: Direct and indirect impacts of regulation on business.

these customers. We estimate that for the largest suppliers, revenues could fall by between 4% and 8% of their overall domestic retail energy revenues as a direct result of the cap.

4.23 Those suppliers with higher than average default tariff prices at implementation of the cap will experience a greater reduction in revenues, in absolute terms, than other suppliers. As noted in paragraph 4.10, suppliers which already offer a default tariff that is priced below the cap would not be required to adjust these tariffs. Therefore, for these suppliers there would be no direct impact on revenues from the introduction of the default tariff cap

4.24 With a lower cap level (option 1), there would be a greater direct impact on supplier revenues, with total revenues reducing on average by approximately 7%. We estimate that this reduction could range between 6% and 11% across the largest suppliers.

4.25 For a higher cap level (option 3), there would be a smaller direct impact with total supplier revenues, reducing on average by 4%. Meanwhile across the largest suppliers the reduction in revenues would range between 2% and 6%.

4.26 Table A11.5 below summarises the direct impact of the default tariff cap on suppliers' total domestic energy revenues for each cap level option. The market level impact has been estimated based on financial data from a combination of large, medium and small suppliers for calendar year 2017. We have also presented the range of direct revenue impacts across the six largest suppliers in the market. Our analysis is based on 2017 data and shows the estimated impact the default tariff cap would have had in 2017.

Table A11.5: Estimated annual direct supplier revenue reduction for each cap level option

		Option 1	Option 2 (chosen cap level)	Option 3
Total market direct revenue reduction	2018 prices	£1,582m	£1,174m	£838m
	As a %[73]	7%	5%	4%
Range of direct revenue reduction across the six largest suppliers	As a %[74]	6 - 11%	4 - 8%	2 - 6%

Source: Ofgem analysis

[73] Assessed based on the percentage reduction in 2017 prices.
[74] Assessed based on the percentage reduction in 2017 prices.

Direct impact on supplier costs

4.27 The efficient benchmark used to set the cap level is based on the costs of an efficient company. When implemented, the cap will be updated at regular frequencies based on changes to such costs, including wholesale energy costs, network and distribution costs. Appendix 1 – Benchmark methodology sets out in greater detail the costs included in our estimation of the default tariff cap.

4.28 In this section we assess how actual supplier costs, in some cases reflecting costs faced by inefficient companies, could be impacted by the default tariff cap. Drawing on the responses to our May consultation, our statutory consultation and our own assessments of the energy market, we have identified a number of different costs, including:

- administrative costs of additional price updates for suppliers
- administrative costs relating to costs of compliance and monitoring
- suppliers' cost of financing
- suppliers' equity valuations
- wholesale costs, through the impact on suppliers' hedging strategies.

4.29 We consider the first four points in turn here. Wholesale costs are included within our efficient cost benchmark and changes in wholesale costs will be reflected in future cap updates and therefore will be recoverable under the cap.

4.30 We consider the impact on hedging strategies and the costs associated with purchasing wholesale energy in our consideration of the impact on the wholesale market in Chapter 7 of this document.

4.31 The other costs we consider in this section are not included within the efficient benchmark component of the cap. The administration costs do reflect costs incurred by an efficient company but are not included in the efficient benchmark as they are considered to be immaterial relative to the overall cap level, representing 0.1% of the efficient benchmark. The financing and valuation costs would not be incurred by an efficient company, and therefore are not appropriate to include in the efficient benchmark for the default tariff cap.

Administrative costs of additional price updates

4.32 Suppliers incur administrative costs each time they change prices. These administration costs will be incurred by suppliers with every update we make to the cap level. Such administrative costs that may be incurred include:

- Obligations under the Supply Licence Conditions (SLCs) to provide notice to all customers who will be impacted by the change, leading to suppliers sending out notifications (physical and electronic) to customers to inform them of a price change.

- Increases in the volumes of calls from customers wanting to understand the changes to their tariff, resulting in the requirement for additional call centre resource to respond to increased customer requests including training and amendments of response scripts.

- Costs associated with reflecting changes in prices or discounts in suppliers' billing systems and on their websites.

4.33 Within Appendix 14 of our May consultation, titled 'Initial views on impact assessment', we sought evidence to inform our consideration of these impacts (Question A14.4). We received a number of cost estimates from suppliers relating to the administrative costs outlined above. Based on these responses,[75] we estimate that the weighted average administrative cost of each price change on a per customer basis is £0.87.

4.34 We have identified through our tariff monitoring data, that since 2012, the six largest suppliers have generally updated their SVT prices on average once every 9 – 13[76] months, with a market average update frequency of approximately 1.1 times per year, or around once every 11 months. As outlined in Appendix 3 – Updating the cap methodology, we have chosen a six-monthly cap update frequency. On the basis that suppliers update their default tariff prices in line with the frequency of cap updates, this will represent an increase in the frequency of price changes by suppliers.

4.35 We estimate that at our chosen cap level (option 2) suppliers making up 98% of the market would have default tariffs priced above the default tariff cap at the point of implementation. We expect these suppliers to price at the cap level, rather than below it. We propose to update the cap level every six months. Any cap update that reduces the cap level will lead to suppliers having to change their tariff prices in order to comply with the cap.

4.36 Furthermore, given that the default tariff cap will reduce the profit margin achieved by most suppliers on their default tariffs, they will have less scope to absorb changes in costs. Where previously these large suppliers might have looked to absorb changes in costs over, on average, an eleven-month period,

[75] We have assumed that the costs submitted by those suppliers who responded form an accurate representation of the potential costs of the wider market. We note that the suppliers who responded to our request for further information represent the vast majority of those eligible consumers, representing around 90% of all eligible customers. Costs taken as a weighted average of data submitted, costs ranged from £0.20 to £1.80.
[76] Based on all updates to the price of each of the largest six suppliers standard variable direct debit tariff, from January 2012 up until March 2018. Data from Ofgem routine market monitoring.

we expect this to be reduced such that when the cap is updated upwards most suppliers will increase their prices to the updated cap level.

4.37 Based on the existing average frequency of price updates by supplier, outlined above, we estimate that a six-monthly cap update represents a differential in updates compared to what we have observed since 2012 of around five months or an additional 0.9 times per year compared to what we might expect to observe under the baseline scenario. The difference in this frequency of update, can be directly attributable to the implementation of the cap. We have, therefore, estimated the cost of this for suppliers.

Table A11.6: Estimated direct administration cost increase for suppliers for the chosen cap level (option 2)

Calculation of additional administration costs for 2019		
Current price update frequency	11 months	1.1 times per year
Expected frequency	6 months	2 times per year
Expected increase	5 months	0.9 times per year
Number of customers	10.7m eligible customers	
Market cost per price change	£0.87 per customer or £9.3m for market	
Increased administration costs	£8.8m	

Source: Ofgem analysis

4.38 Based on the estimated 10.7 million customers on tariffs in scope of the cap in December 2018, we estimate that the movement to bi-annual price updates could potentially increase industry administration costs by approximately £8.8m[77] on an annual basis across the whole market. As we have calculated these impacts along a per customer basis, we do not expect there to be any disproportional impact on any specific supplier types, providing their current frequency of price update was in line with the wider market average.

4.39 We note that, as with other impacts presented, these costs are expected to change over time, in line with the reduction in eligible customers for the cap

[77] Update frequency and costs based on submissions from the six largest suppliers to our May consultation and previous Ofgem supplier cost data. Costs calculated on a per update per customer basis updated to 2018 prices (£0.87) and scaled to estimate the potential impact on all customers eligible for the default tariff cap. Costs calculated from supplier responses, accounting for the entire price update process including increased customer response. Costs of potential supplier specific system updates not included. In practice over time, we might expect additional customers to switch onto SVTs in our convergence scenario; this could potentially lead to increases in the annual impact.

(see Chapter 3). We have taken this into account in our analysis of the NPV of impacts over the period of the cap.

4.40 These costs are based on the increased costs in informing customers of price changes from sending letters and other correspondence with customers, and the increases in customer queries stemming directly from these price changes, for all suppliers covered by the default tariff cap.

4.41 As well as applying to customers on tariffs priced at the cap level, the cost of price changes would also apply to some customers on tariffs priced below the cap level at typical consumption. This would occur in instances when either the standing charge or unit rate elements of the tariff is priced at the cap level for that element.

4.42 There may, however, be some customers for whom both their standing charge and unit rate are priced below the cap, and therefore who would not see price changes at each cap update. However, due to the complexity of identifying those customers who might be affected our analysis assumes that all customers eligible for the default tariff cap would experience six-monthly price changes. This could potentially lead our analysis to overestimate the additional administration costs.

4.43 Given that customers on tariffs currently above the chosen cap level represent 98% of all default tariff customers, we expect the inclusion of customers on tariffs priced below the cap will at most overestimate the impact on administration costs facing suppliers by 2%.

Potential administration costs from system updates and monitoring and compliance

4.44 In our draft impact assessment published alongside the statutory consultation, we outlined that we were aware of a number of other potential impacts which could lead to increased administration costs for suppliers. These included:

- the potential need for suppliers to update their billing systems, to enable them to account for changes in prices on a more frequent basis or to apply direct debit discounts to consumers, and

- the potential for increased costs in monitoring and compliance for suppliers as they ensure their tariffs remain compliant with the default tariff cap maximum charge restrictions.

4.45 In relation to billing systems we received two responses to our May consultation stating that the implementation of the cap could require IT system updates. These respondents provided monetised estimates for one-off system updates, of between £200,000 and £500,000, though no further information was provided as to the reason for system changes being needed. No further information was provided in response to our statutory consultation.

4.46 Upon reviewing information on the frequency of previous price changes of suppliers, we found that many had intermittent periods where price changes were implemented more frequently than we are proposing. For instance, over the last five years four of the six largest suppliers have at some stage changed their SVT prices more than once in a six-month period. No small suppliers raised this as an issue. Given this, we expect that the majority of suppliers' current billing systems are able to accommodate more frequent price changes without upgrades.

4.47 However, for those suppliers who have identified associated costs, based on those submissions we have received, we believe the costs of updating systems to deal specifically with an increase in the frequency of price changes, could cost somewhere up to £0.5m per supplier.

4.48 In relation to potential monitoring and compliance costs associated with the implementation of the cap, we noted in our statutory consultation that many suppliers currently have monitoring and compliance functions performing similar roles for the vulnerable and PPM safeguard tariffs. And that subsequently, we expect that current compliance functions could cover these additional monitoring actions without significant additional cost. We did not receive any responses challenging these assertions.

4.49 However, in response to our statutory consultation, we received additional responses from suppliers raising new considerations relating to the implementation of the default tariff cap. These responses have highlighted potential additional administration costs and investments required in order to prepare for implementation of the cap. The issues which have been highlighted include:

- the complexities which arise from allocating PPM smart meter customers to the correct capped tariff. PPM customers with a SMETS1 smart meter will be protected by the PPM cap, while those PPM customers with a SMETS2 meter will be protected by the incoming default tariff cap

- the complexities of applying direct debit discounts to both the standing charge and unit rate portion of a customer's bill, with these changes potentially requiring additional system investment for some suppliers.

4.50 We consider that suppliers' and industry systems should be able to distinguish between different types of smart meters, as they will need to know what metering equipment is in the customers' premises in order to offer them a good quality of service using the smart functionality of the meter. The new systems and data management arrangements being introduced as part of the Switching Programme will further assist suppliers in this.

4.51 However, three of the six largest suppliers identified that there could be operational impacts of these requirements under the cap. Should additional investments be needed, we consider that they could cost up to £0.5m for each of those large suppliers for which they are needed. This figure is inevitably

uncertain, and may be an upper bound to the costs that suppliers are likely to incur in practice. No small suppliers that responded to our consultation identified this as an issue.

Administration costs related to the application for a renewable tariff derogation

4.52 The process of applying for a derogation will generate administrative costs for suppliers. Given that these costs will be incurred on a supplier basis, rather than customer basis, and that we expect the number of suppliers that may apply to be in single figures, we do not expect these costs to be material at the aggregate level. Furthermore, the derogation process is voluntary and therefore any such costs incurred are not a direct result of the default tariff cap.

Impact on supplier financing

4.53 In Appendix 11.3 of this document, we analyse the potential for the default tariff cap to impact the financing costs of suppliers. We assess both the potential for the default tariff cap to influence the cost of capital through an increased level of regulatory risk, as well as the potential for the default tariff cap to influence the creditworthiness of those impacted firms through revenue impacts.

4.54 We conclude that any regulatory risk stemming from the default tariff cap is unlikely to lead to a material increase in the underlying cost of capital faced by a supplier. By designing the default tariff cap to track underlying market costs, there is very limited discretion for the regulator to influence the level of the cap, while any price shocks will, in time, be factored into the cap level. Therefore, we consider that the design of the cap, primarily in its transparency and use of exogenous indices for updating, will serve to limit the materiality of regulatory risk. This will be the case regardless of the option (level of the cap) chosen.

4.55 In addition, our analysis suggests that while the default tariff cap could potentially lead to decreases in the creditworthiness of suppliers, any such impacts are expected to be marginal and would likely only impact smaller non-diversified organisations. This is because we do not expect that revenue impacts are material enough to influence those larger more diversified organisations, who are often rated at group level. Furthermore, we would only expect there to be an impact on suppliers' credit ratings in instances where suppliers are already close to the 'tipping point' to a lower credit rating.[78] We further explain our analysis on the impacts on supplier financing in Appendix 11.3 of this document.

Impact on equity valuations

4.56 Valuations of both private and public traded companies are inherently complicated. However, one central tenet of valuing any company is the expected

[78] Whether organisations actually experience any impacts on their investment ratings is also dependent on whether these organisations are rated by credit ratings agencies.

future earnings of that company over time. Analysts often place a value on an asset using the future expected cash inflows and outflows generated, discounted into a current valuation applicable to the present day. It is, therefore, possible that through the default tariff cap's direct impact on the revenues and profit margins of suppliers, their valuations could be impacted.

4.57 Impacts on valuations can become apparent far before the actual implementation of any policy. We note that in the context of the default tariff cap, initial impacts on valuations can materialise at the announcement of the initial policy or even before. It is, therefore, possible that recent decreases in equity valuations of those publicly traded supplier bodies, stem partially from the default tariff cap's announcement.[79]

4.58 Furthermore, these adjustments to valuations are based on analyst and financial market expectations of the default tariffs cap's impact. Market analyst opinions, obtained through market analyst reports from leading investment banks,[80] generally assumed that the potential impacts of the default tariff cap have now been fully considered by the market, and are currently priced into the equity valuations of those traded suppliers at the time of this decision document.

4.59 To the extent that these expectations are inaccurate, further impacts on valuations could materialise either prior to the cap being implemented or following implementation. However, one of these reports commented on the transparency of the methodology allowing clear expectations of potential changes in the level of the cap over time.[81]

4.60 Furthermore, we expect changes to equity valuations to be accounted for in our estimate of the potential impact on supplier revenues and profits, therefore we do not account for this impact separately as it would constitute double counting.

4.61 One respondent to our consultation identified that it considered that any reduction in suppliers' share prices could indirectly impact public shareholders, including pension funds that hold shares in the market. The respondent also considered that this may reduce investment in the energy sector, which could have a subsequent impact on innovation.

4.62 We agree that any potential changes in equity valuations of firms impacted by the default tariff cap will subsequently influence the value of financial assets comprised of or correlated to those holdings. For instance, decreases in the equity valuations of impacted suppliers could have impacts on the overall valuations of public pension funds with holdings in those impacted equities. However, such investment funds tend to be highly diversified[82] and, therefore,

[79] The Independent (2017) 'Theresa May wipes billions of pounds from energy industry shares after price cap announcement'.
[80] As of October 2018, sourced through Thompson One research portal.
[81] JP Morgan (2018) Centrica. Returning to dividend growth. 11 October 2018.
[82] NAPF (2013) Trends in defined benefit asset allocation: the changing shape of UK pension investment.

we would expect investments in retail energy companies to form only a very small proportion of any fund. For example, energy companies listed on the London Stock Exchange make up just 0.5% of the total market capitalisation of companies listed on the Main Market of the London Stock Exchange.[83] Furthermore, the largest energy suppliers in particular tend to be highly diversified businesses, which would mitigate the potential impacts on their overall valuations.

Direct impact on supplier profitability

4.63 Similar to our analysis of supplier revenues, we have analysed the potential direct impact on supplier profitability at the market level, based on financial data from a combination of large, medium and small suppliers. All of our analysis is based on annual data for 2017. We also report impacts for the six largest suppliers due to their scale and their coverage of the majority of domestic customers in the market. Additional detail on the approach and methodology for analysing these impacts is set out in Appendix 2 of our statutory consultation.

4.64 We have decided to set the cap at a level (option 2) at which our analysis of costs suggests it is possible for an efficient supplier to achieve normal profits.[84] We are proposing that the cap includes an EBIT margin of 1.9%[85] and therefore in our impact assessment we use this as our long-run measure of profit. In Table A11.7 below, we summarise the potential direct impact on the profitability of suppliers.

4.65 Based on analysis of financial data for 2017, and adjusting for the implementation of the vulnerable customer safeguard tariff in February 2018,[86] we have estimated that the EBIT margin for the overall market would be 3% upon implementation of the cap. This is based on the EBIT margin for 2017, adjusted down to take into account of the reduction in revenue resulting from the WHD customers that are subject to the vulnerable customer safeguard tariff. Based on an assumption of even distribution of WHD customers across suppliers, we estimate that for the six largest suppliers' EBIT margins will range from -5% to 8% pre-cap.

4.66 The impact on revenues and costs of the implementation of the default tariff cap will directly impact the profitability of suppliers in the market.

[83] Energy companies listed on the London Stock Exchange (including Centrica, SSE and Good Energy) have combined market capitalisation of just over £20bn. Market capitalisation of the Main Market on the London Stock Exchange was £4,100bn as of September 2018 (Bloomberg).
[84] A normal level of profit is defined in economic theory as the level of profit required for a business to remain in the market.
[85] Based upon the normal EBIT margin for suppliers that do not use intermediaries to manage their wholesale trading activities as estimated by the CMA.
[86] We have adjusted estimated profit margins for the estimated lost revenue from WHD SVT customers following implementation of the vulnerable customer safeguard tariff.

4.67 We estimate that for our chosen cap level (option 2), the overall market EBIT margin will reduce to approximately -1%, representing a reduction of approximately 5 percentage points relative to the counterfactual EBIT margin. This considers only the direct impact of the cap on supplier revenues, and, as noted above, includes the EBIT margins of suppliers that made a loss in 2017.

4.68 The impact on administration costs is not factored in to our profitability impact analysis, but we consider that it would not have a material impact on profitability given that administrative costs for suppliers represent approximately 0.1% of the efficient benchmark.

4.69 The impact on profitability will vary across suppliers depending on a number of factors, including the supplier's:

- pre-cap default tariff price relative to the default cap level
- proportion of total revenue generated from default tariffs
- individual EBIT margin at implementation of the cap
- cost level in comparison to the efficient cost level set within the cap.

4.70 On an individual supplier basis, following the implementation of the cap we estimate that EBIT margins for the six largest suppliers will range between -12% and 4%. Our analysis indicates that for the six largest suppliers, all will experience a direct reduction in EBIT margins as a direct result of the default tariff cap. We estimate that EBIT margins will reduce by between 4 and 8 percentage points across suppliers.

4.71 For smaller suppliers the impact on profitability will be more mixed. A number of small suppliers currently have default tariffs priced below the chosen cap level. As a result, we would not expect these suppliers to experience a direct impact on revenues or profitability from the cap. Other small suppliers may be more greatly impacted, depending on their business model and customer base, eg renewable suppliers.

4.72 We have analysed the direct impact on supplier profitability of the alternative cap level options.

4.73 As we set out in paragraph 4.24 above, for a lower cap level (option 1) there would be a greater reduction in supplier revenues. Therefore, for option 1 we estimate that there would a greater direct negative impact on supplier profitability.

4.74 In contrast, for a higher cap level (option 3), supplier revenues would not be as impacted. We estimate that profitability at the market level would reduce to 0.1% (a lower reduction than that for our chosen cap level).

4.75 Our analysis of the direct impact on profitability for the chosen cap level and the higher and lower cap level options is summarised in Table A11.7 below.

Table A11.7: Summary of estimated direct impacts on supplier profitability for each cap level option

Market Impact		Option 1	Option 2 (chosen cap level)	Option 3
Post-cap EBIT margin	Market level	-3%	-1%	0.1%
	Range across 6 largest suppliers	-14 to 2%	-12 to 4%	-11 to 6%
Reduction in EBIT margin	Market level	7 percentage points	5 percentage points	3 percentage points
	Range across 6 largest suppliers	6 to 11 percentage points	4 to 8 percentage points	2 to 6 percentage points

Source: Ofgem analysis

Indirect impacts on suppliers' prices, revenues and profitability

4.76 We have assessed the following indirect impacts of the default tariff cap on suppliers, which we then consider in turn:

- the potential supplier pricing responses, covering changes to uncapped tariff prices and changes to default tariff prices that would be priced below the cap level in the absence of the cap
- potential supplier efficiency improvements
- potential changes in customer consumption
- potential changes in customer engagement and switching.

Supplier pricing responses

4.77 Our analysis presented in Table A11.7 suggests that one of the direct impacts on suppliers of the implementation of the cap would be a reduction in profitability levels, resulting in lower EBIT margins. At the same time, the reduction in default tariff prices, and the reduction in the price differential between default tariffs and fixed tariffs, could lead to a reduction in customer engagement. This latter impact is discussed further in Chapter 5 below. These

impacts will affect suppliers' pricing strategies following the implementation of the price cap on default tariffs.

4.78 A reduction in suppliers' profit margins, particularly if pushed below normal profit, may lead suppliers to seek to offset revenue losses from default tariffs by increasing fixed tariff prices. Lower levels of customer engagement could reduce the competitive constraint on fixed tariffs, enabling suppliers to increase prices and hence revenue.

4.79 As we present in paragraphs 4.63 to 4.75 above, our analysis suggests that five of the six largest suppliers will be operating at negative or subnormal profit levels following the implementation of the default tariff cap. Similarly, we expect that some small suppliers will be operating at subnormal profits as a direct result of the cap. If these suppliers are unable to offset the reduction in profitability, either through increased fixed tariff prices or through reduced costs (either by improving efficiency or cutting controllable costs), then they will make losses. This could result in some suppliers exiting the market.

4.80 We have analysed the potential indirect impacts of the default tariff cap based on our review of evidence from international case studies, the theoretical impacts of price caps, and supplier level data. It should be noted that our analysis of the indirect impacts of the default tariff cap on suppliers' prices, revenues and profits does not capture the impact of any changes in energy consumption or switching rates on supplier revenues, due to the complexities and uncertainties associated with the market dynamics. These impacts are considered separately below in paragraphs 5.54 to 5.74 and 5.78 to 5.99 respectively.

4.81 Our analysis is based on the following theoretical set-up in our analysis:

$$\Sigma(\pi) = p + qT$$

Whereby:

- Π is profit
- p is fixed tariff profitability
- q is the default tariff profitability
- T is the expected number of years a customer stays on a default tariff.

4.82 Based on 2017 data from suppliers' financial accounts collected through our RFI responses and our analysis of the direct impact on each individual supplier's prices, costs, revenues and profitability, we have assessed the impact of the default tariff cap on a supplier by supplier basis. More detail on our approach to this analysis is included in Appendix 2 of our statutory consultation.

4.83 Within our analysis we consider two potential market outcome scenarios. The two scenarios reflect the potential indirect impacts of the default tariff cap on suppliers, additional to the direct impact of the cap we have set out in the preceding sections. We assess how the impacts of the cap would vary dependent on these. The scenarios considered are:

- Scenario 1 - Prices fall to the cap: All default and non-default fixed tariffs above the cap level fall to the cap, while customers on tariffs priced below the cap continue to pay the same as they would without the cap. This captures: a situation in which all suppliers price tariffs below the cap in the same way as they would without the cap; and a situation in which some suppliers increase their fixed tariff prices, but as a result lose customers on these tariffs to competitors who continue to maintain their fixed tariff prices.

- Scenario 2 - Prices converge to the cap: All tariff prices (both default and non-default fixed) converge to the cap level, including those that would otherwise be priced below the cap.

4.84 We consider that these two scenarios reflect the likely limits of how the market might respond. The actual response is likely to fall somewhere in between these limits, and will depend on the level of the cap, individual suppliers' current financial position and the extent to which they will be impacted by the cap, as well as overall market forces.

4.85 In particular, at the three cap levels we are considering in this impact assessment, we do not expect that all suppliers would converge prices to the cap level. This is because those suppliers, particularly smaller suppliers, able to compete at lower prices would be expected to continue to do so. Therefore, our scenarios should be seen as indicative only.

4.86 In response to our statutory consultation, one respondent highlighted that the prices of tariffs aimed at acquiring customers could increase. We note that the introduction of the default tariff cap may discourage suppliers from offering low priced tariffs, particularly at a price below cost, as suppliers will be less able to cross subsidise the provision of these tariffs by recouping any losses from default tariff customers.

4.87 Furthermore, the reduced ability to offer these tariffs in the future may disadvantage suppliers who rely on such tariffs as a strategy to gain new customers. This may contribute towards a general tendency for fixed tariff and uncapped tariff prices to increase. Within our analysis this impact is captured within scenario 2 where prices converge. We have analysed the impact on competition of the decreased offering of these tariffs in Chapter 6.

4.88 We also note the possibility of other indirect impacts on supplier prices not included within the range of these scenarios. For example, it is possible that suppliers increase fixed tariff prices to above the cap level in order to offset all revenue reductions from the introduction of the cap. However, we consider this

to be relatively unlikely as price is the main driver of switching[87] and therefore there would be little incentive for customers to switch from a default tariff to a higher priced fixed tariff.[88] For this reason we consider that any use of this pricing strategy would only apply to a small proportion of the market to whom non-price factors are particularly important.

4.89 We have modelled the potential indirect impact on supplier prices, revenues and profitability of each cap level option in our two scenarios. We present our estimates of the impact on revenues and profitability of each of the cap level options in Table A11.8 below.

Table A11.8: Indicative annual indirect impact on supplier prices, revenues and profitability for each cap level and scenario, in 2018 prices

	Option 1		Option 2		Option 3	
	Scenario 1: Prices fall to the cap	Scenario 2: Prices converge	Scenario 1: Prices fall to the cap	Scenario 2: Prices converge	Scenario 1: Prices fall to the cap	Scenario 2: Prices converge
Average reduction in default tariff prices (dual fuel)	-£146	-£146	-£105	-£105	-£72	-£71
Average change in fixed tariff prices (dual fuel)	-£3	£37	£0	£77	£0	£109
Total change in revenue	-£1,641m	-£1,181m	-£1,196m	-£325m	-£853m	£381m
Average post cap EBIT margin	-4%	-2%	-2%	2%	0.1%	4%
Change in EBIT margins	-7%	-5%	-5%	-2%	-3%	1%

Source: Ofgem analysis

4.90 Our analysis of the potential indirect impacts on suppliers for each of our scenarios suggests there could be a wide disparity of outcomes depending on the cap level chosen and how suppliers react to the cap.

[87] See evidence set out Appendix 2 of our statutory consultation.
[88] It is possible that, in some instances, consumers will choose to switch to a higher priced tariff where consumers are incentivised by non-price factors, such as premium service offers.

4.91 Looking at the impact of the cap based on 2017 levels of efficiency, for our chosen cap level (option 2), in scenario 1 whereby suppliers reduce prices to the cap level but customers on tariffs below the cap pay the same as they would without the cap, the market would be expected to make subnormal profits.[89] Conversely, in scenario 2, where prices converge, the market would achieve close to normal profits. This suggests the average suppliers will need to make efficiency improvements in order to operate under the cap.

4.92 The impact, however, varies significantly across suppliers. For our chosen cap level, in scenario 1 our analysis suggests that, we estimate that five of the six largest suppliers would be operating at subnormal EBIT margins following the implementation of the cap.

4.93 Scenario 1 assumes that competitive constraints would prevent these suppliers from increasing fixed tariff prices without the loss of these fixed tariff customers. In this instance they may either maintain their current tariffs, at a loss, or increase fixed tariffs while accepting they would lose customers to competitors that continue to offer the lower fixed tariffs. In either case, many suppliers are likely to operate at a loss unless they can sufficiently reduce operating costs (in the latter case these efficiencies may be related to scaling down of overheads). In this scenario, in order to achieve normal profit levels, we estimate that suppliers would need to improve profitability by between 2 and 14 percentage points.

4.94 In scenario 2, which assumes prices converge, despite suppliers being able to increase fixed tariff prices to the cap level without loss of market share, our analysis suggests there would still be four of the largest six suppliers operating at subnormal profit levels, albeit to a lesser degree when compared to scenario 1. In order to achieve normal profit levels, we estimate that individual suppliers would have to improve profitability by between 1 and 6 percentage points.

4.95 As we note above, these two scenarios reflect the likely limits of how the market might respond. We discuss in Chapter 6 how the market response will be driven in part by the extent of the impact of the cap on switching.

4.96 We consider an increase in fixed tariff prices to be limited at a higher cap level. This is due to the lesser impact on suppliers' profits and on customer engagement, meaning that price competition among fixed tariffs is more likely to be maintained. With a higher cap level (option 3), more suppliers would also be able to continue to make normal profits without full price convergence. At a lower cap level (option 1), there is a greater likelihood of price convergence due to the greater negative impact on suppliers' profits and on customer engagement through a reduction in the price differential, meaning there would be less of a competitive constraint on fixed tariff prices.

4.97 In practice, at our chosen cap level (option 2), we anticipate that the impact will fall in the middle of the two scenarios we have analysed. We estimate that at

[89] We assume a normal profit level of 1.9%.

this cap level customer switching might reduce by 30%. Significant ongoing switching behaviour will incentivise price competition amongst suppliers.

4.98 However, we note that any changes to fixed tariff prices will take time to take effect as, whilst suppliers will be able to increase the prices of their new fixed tariff offerings, they will be unable to change the prices of existing fixed tariffs. We estimate that the average fixed tariff lasts for around 18 months[90] (slightly shorter among the six largest suppliers). Therefore, at market level, the impact of these changes will happen gradually over time.

4.99 This will mean that in the short run, particularly in the first year of the cap, suppliers may be less able to mitigate the direct impact of the default tariff cap. We have taken into account the expected profile of fixed tariffs coming to an end in our NPV analysis of the revenue impact on suppliers.

Efficiency improvements by suppliers

4.100 The impact on the incentive for suppliers to improve efficiency is one area to which the Act states we must have regard in the setting of the cap.

4.101 As noted in paragraph 4.14, the default tariff cap is expected to reduce suppliers' revenues.[91] Suppliers are likely to need to use a combination of increases in fixed tariff prices and reductions in operating costs to achieve normal profits. As a result, the default tariff cap may incentivise inefficient suppliers to increase efficiency in order to reduce operating costs per customer. In its energy market investigation, the CMA judged that inefficiency was one of the drivers of higher prices charged by the six largest suppliers.[92]

4.102 At our chosen cap level (option 2), even after convergence of fixed tariff prices, our analysis suggests that four large suppliers would make sub-normal profits. For these suppliers, significant efficiencies, equivalent to 1 to 6 percentage points of EBIT, will be required.

4.103 It should be noted, however, that under competitive market conditions suppliers should already be incentivised to improve efficiency. Whilst the introduction of the default tariff cap may increase this incentive, depending on the scale of efficiencies needed to offset the impact of the cap, the required efficiencies could take time and investment to implement and take effect, and may not be feasible to achieve within the cap period.

4.104 There are some suppliers currently achieving sub-normal or negative profits whilst operating inefficiently. This indicates that for these suppliers, efficiency

[90] Based on data from uSwitch website accessed 14 August 2018. Among the 10 cheapest fixed tariffs offered by the six largest suppliers, this average was slightly lower at around 15 months.
[91] We also expect the cap to increase suppliers' administration costs directly, though this impact is considered to be marginal relative to the revenue impact.
[92] CMA (2016) Energy Market Investigation.

improvements may not currently be easily or likely achieved in the short term. Furthermore, our analysis suggests that there are some suppliers that are relatively efficient but due to their customer base, have a higher cost base than those used in the efficient cost benchmark. This may mean that reaching the level of efficiency assumed in the cap level will not be possible for such suppliers. This may mean that in an attempt to limit the impact of the cap on profit levels, rather than implement efficiency savings, suppliers may look to cut controllable costs in other areas such as customer service.

4.105 Within our analysis we have assessed the extent to which suppliers would need to improve efficiency to become as efficient as the most efficient large supplier. The results of our analysis suggest that at our chosen cap level, there will be some suppliers who despite improving efficiency to the same level as the most efficient large supplier operating within the market, would still make negative or subnormal profit. In order for these suppliers to achieve normal profit under the default tariff cap they would need to increase the price of their fixed tariffs. If competitive constraints within the market do not allow for these suppliers to increase prices of fixed tariffs without losing customers, then it is likely that these suppliers seek to cut controllable costs. This may have an impact on customer service levels or innovation (we assess these impacts in Chapter 6). Alternatively, this could lead to an increased likelihood of these suppliers exiting the market.

4.106 We note that the decision on the options for payment method differential may result in the default tariff cap having a greater impact on suppliers with a higher proportion of customers on standard credit. Our chosen option for the payment method differential reflects the current differential between the direct debit and standard credit applied by suppliers and therefore should not generate an additional impact.

4.107 However, the lower option (option 2b) for the payment method uplift allocates a greater proportion of costs to direct debit customers compared to the current differential applied. Under this scenario we would expect suppliers with a greater than average proportion of standard credit customers may not be able to sufficiently cover their operating costs under the default tariff cap. This option could therefore have a disproportionate impact on these suppliers' profitability, and potentially result in some efficient suppliers not being able to finance their operations.

Changes in energy consumption

4.108 As well as through changing prices, suppliers' revenues and profits could be impacted by changes in energy consumption in response to changes to tariff prices. Due to the complexity of the dynamics, we have not accounted for the impact of changes in energy consumption in our analysis of the impact on suppliers' revenues and profits above.

4.109 Domestic energy usage in the very short term is primarily driven by the weather, due to the majority of household energy consumption being used for

the heating of space and water. However, the price of energy is also a driver of energy consumption.

4.110 As noted in paragraph 4.11, the default tariff cap is expected to lead to a direct reduction in the price of energy for eligible customers. Through changes by suppliers to the prices of fixed tariffs, the default tariff cap could also impact the price of energy for uncapped customers. These changes will impact the level of energy consumption amongst these customers.

4.111 We have identified a negative price elasticity of demand of -0.26 and -0.1, for electricity and gas respectively. Details of the basis for these assumptions is provided as part of our assessment of the impact of the cap on energy consumption within Chapter 5. Based on these values, we would expect any reductions in price would lead to an increase in energy usage for default tariff customers. This would offset some of the revenue losses experienced by suppliers as a result of the fall in prices. Conversely, any increases in the prices of uncapped tariffs, would be expected to result in a reduction in energy consumption, contributing to lower revenues.

4.112 Assuming a price elasticity of demand of -0.26 for electricity and -0.1 for gas, we estimate that combining direct and indirect impacts on tariff prices, based on our two supplier response scenarios, the default tariff cap could impact supplier revenues by approximately -£7m up to £157m through changes in energy consumption inclusive of VAT.[93]

Table A11.9: Estimated annual revenue impact from changes to energy consumption

	Option 1	Option 2 (chosen)	Option 3
Scenario 1: Prices fall to cap	£222m	£157m	£108m
Scenario 2: Prices converge to the cap	£136m	-£7m	-£123m

Source: Ofgem analysis

Customer switching

4.113 As noted in paragraph 4.3, suppliers' revenues and profits depend on the number of customers on each tariff. Changes to switching rates will impact the

[93] This fall in consumption in scenario 2 is due to the proportional impact on fixed and default tariff prices. A given absolute increase in fixed tariff prices represents a larger proportional price increase than the same absolute reduction in default tariff process would represent in terms of proportional price decrease. The former therefore generates a larger reduction in energy consumption than the increase generated by the latter.

revenues earned by suppliers, whether they switch between tariffs with the same supplier, or to an alternative supplier.

4.114 As we set out in more detail in Chapter 5, there are two routes through which switching could be impacted by the default tariff cap:

- First, the direct impact of the price cap will be a reduced price differential between default tariffs and uncapped tariffs below the level of the cap. This differential will be further reduced if suppliers increase the prices of uncapped tariffs below the level of the cap. This could result in a reduction in switching as the savings to be gained from switching would be reduced.

- Second, the default tariff cap could provide a sense of protection for default tariff customers meaning that they believe they are no longer over-paying for their energy and, therefore, do not consider it necessary to shop around for better deals.

4.115 To the extent that the cap reduces switching, this will generate a benefit to suppliers through increased revenues as a result of more customers remaining on default tariffs rather than switching to lower priced fixed tariffs.

4.116 The two scenarios we present in terms of the market impact reflect the limits of the potential impact on switching: scenario 1 reflects a scenario in which the cap has no impact on switching and therefore no impact on the prices of fixed tariffs or the number of fixed tariff customers; while scenario 2 reflects a scenario in which all customers are on tariffs priced at the cap level. This would reflect a scenario whereby there would be low levels of switching in the market, though we might expect some customers to continue to switch for non-price factors.

4.117 The revenue impact of changes to switching rates is therefore already accounted for in these scenarios, and we therefore do not account for it separately in our analysis of the impact on suppliers.

4.118 In practice, however, it is likely that the outcome will be somewhere between these limits. This is reflected in our consideration of the impact on switching in Chapter 6.

Summary of impacts on suppliers

4.119 Whilst the direct impacts on suppliers can be estimated with some degree of certainty, the complexity of potential impacts on the retail energy market in terms of suppliers' pricing responses and customer switching, and the dynamic interaction between these two factors, means there is uncertainty regarding the indirect impact of the cap on suppliers.

4.120 We have estimated the potential range of impacts of the cap on supplier revenues based on the two potential market outcome scenarios, and within this,

estimated the impact of supplier pricing responses, changes to switching rates and consumption. However, due to its complexity, we have not attempted to model the dynamic interaction between these impacts and therefore these should only be seen as indicative estimates.

4.121 Table A11.10 below presents these estimates for the cap levels considered. At a market level, the impact on suppliers will depend on both the cap level, and the extent to which the competitive constraints on suppliers would allow them to recoup revenue losses from default tariffs through increases in fixed tariff prices without losing a significant number of customers to competitors.

4.122 At the chosen cap level (option 2), the negative direct revenue impacts are such that some suppliers will need to rely on being able to increase fixed tariff prices or achieve significant efficiency savings and/or reductions in operating costs per customer in order to achieve normal profits.

4.123 We estimate that our chosen cap level (option 2) will result in a significant reduction in supplier revenues as a direct impact of the cap. The impact of this on suppliers' profit margins will depend on the extent to which suppliers can make efficiency improvements and adjust fixed tariff prices. Assuming no efficiency improvements, the resulting market level profit margin could range from -2% and 2% depending on the extent to which suppliers increase fixed tariff prices.

4.124 Furthermore, if suppliers are able to improve efficiency to the level of the most efficient large suppliers and increase fixed tariff prices to the level of the cap, the market level profit margin would return to pre-cap levels, as reflected in scenario 2 in Table A11.10 below.

4.125 Based on a lower cap level of option 1, even with all fixed tariff prices rising to the cap level there would be a negative market level EBIT margin and with suppliers reaching the efficiency of the most efficient large supplier, five of the six largest suppliers would be operating at a sub-normal profit level.

4.126 At a higher cap level as in option 3, at a market level the EBIT margin would be below normal profit assuming no change in fixed tariff prices, whereas the market could achieve profit margins of 4% if they were able to converge prices completely. However, due to the lesser impact on switching and engagement at this higher cap level we consider that competitive constraint would prevent prices converging for many suppliers.[94]

[94] The extent to which a single supplier is able to converge prices depends on the degree to which its own customer base is engaged.

Table A11.10: Indicative annual supplier impacts for each cap level option and scenario, in 2018 prices

Cap levels	Option 1		Option 2 (chosen cap level)		Option 3	
Scenario	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**
Direct impact						
Revenue	-£1,582m	-£1,582m	-£1,174m	-£1,174m	-£838m	-£838m
Costs	£9m	£9m	£9m	£9m	£9m	£9m
EBIT	-3%	-3%	-1%	-1%	0.1%	0.1%
Indirect impact						
Default tariff revenue	-	£2m	-	£8m	-	£17m
Fixed tariff revenue	-£59m	£399m	-£22m	£842m	-£15m	1,202m
Consumption impact	£22m	£14m	£16m	-£1m	£11m	-£12m
Net						
Net revenue impact	-£1,619m	-£1,167m	-£1,180m	-£326m	-£842m	-£368m
EBIT	-4%	-2%	-2%	2%	0.1%	4%
Cost efficient EBIT	-2%	-0.2%	0.2%	3%	2%	6%

Source: Ofgem analysis

4.127 The aggregated impacts hide significant differences in the impact on revenue and profitability across suppliers. Our analysis suggests that some suppliers are impacted more negatively than others dependent on:

- the supplier's pre-cap default tariff price relative to the default cap level
- the supplier's proportion of total revenue generated from default tariffs
- the supplier's individual EBIT margin at implementation of the cap
- the supplier's cost level in comparison to the efficient cost level set within the cap

- the extent to which the supplier can achieve efficiency improvements can be achieved

- the extent to which the supplier can retain customers whilst increasing fixed tariff prices, for example through brand loyalty.

4.128 Furthermore, we note that suppliers' ability to increase fixed tariff prices will be limited by the length of time remaining of their existing fixed tariff contracts, which will have to end before tariff prices can be increased. This means that they will be less able to mitigate the negative impact of the cap, particularly in the first year of implementation.

5. Impacts on consumers

This chapter presents our analysis of the direct and indirect impact on customer bills, the impact on customer switching and the impact on energy consumption.

Direct impact on default tariff customers

5.1 In Chapter 3 we set out the context for the implementation of the default tariff cap in terms of customer tariffs and how these have changed over time.

5.2 We expect that our chosen cap level (option 2) will directly reduce bills for approximately 10.4 million customers currently on uncapped default tariffs.

5.3 This figure excludes an estimated 800,000 customers currently in receipt of the WHD, whose bills are already capped by the vulnerable customer safeguard tariff. These customers will be transferred onto the default tariff cap when it is introduced, at the direct debit level of the cap. We assume as our counterfactual that in the absence of the default tariff cap, the vulnerable customer safeguard tariff would have been in place for WHD customers only until the December 2019 but that beyond this these customers would continue to be covered by similar price protection.[95]

5.4 In our analysis we compared the cap as it would have been in 2017 with tariff prices in 2017 and assumed this differential would exist in future years, essentially assuming SVT prices would increase in line with costs. Based on this analysis, we estimate the saving will be £105. This approach to the analysis is necessary as we don't know what suppliers' prices would have been in future without the cap in place. In any given year the actual savings may be above or below this level, but we think on average going forwards this estimate is reasonable.

5.5 Based on a comparison of prices tariff prices from 2017 and the 2017 baseline cap level, we have estimated that our cap level (option 2) will reduce energy bills per dual fuel customer per year by an average of £105 (in 2018 prices) or 9%, based on typical consumption. In total, we estimate a direct customer bill saving of approximately £1,233m per annum across all default tariff customers.

5.6 For different levels of the default tariff cap we would expect different levels of savings for consumers. At a higher cap level of option 3, we expect that the average saving for dual fuel customers would be around £72, and that in total, customers would save around £880m. While under a lower cap level of option 1, significantly higher savings for default tariff customers would be generated, with the average saving for dual fuel customers around £146, and total customer savings of around £1,661m.

[95] We estimate that these customers save around £60m per annum at our proposed cap level (option 2).

Table A11.11: Estimated direct annual customer savings, in 2018 prices[96]

Cap levels	Option 1	Option 2 (chosen cap level)	Option 3
Total customer savings	£1,661m	£1,233m	£880m

Source: Ofgem analysis

5.7 Based on our estimate of the efficient benchmark of £988 in 2017 terms[97] at typical consumption, we estimate that in 2017 default tariff customers were collectively paying £1.5bn more than they would in a fully competitive market where suppliers were fully efficient and priced at efficient costs.[98] This takes into account the direct impact of the cap on default tariff customers only.

5.8 Individual consumer savings will vary based on the characteristics of these customers and their current billing arrangements. Individual savings for customers could vary depending on:

- the type of fuel they use (dual fuel, single gas or single electricity)
- the prices of their tariffs prior to protection under the default tariff cap
- the region in which the customer is located
- the payment method (direct debit or standard credit) used by the individual customers
- the individual customer's consumption rate, as the value of the total bill reduction for customers will vary with the level of a customer's consumption.

5.9 We address each of these below.

Customer savings dependent on fuel type

5.10 Suppliers have different pricing strategies for different fuel types. This means that the average savings for customers using different fuels will vary, with gas customers typically saving more as a result of the cap than electricity

[96] These figures vary from the supplier revenue impacts as the customer bill impacts include VAT at 5%.
[97] This represents average efficient costs across suppliers taking account of uncertainty.
[98] This is estimated based on the difference between average default tariff prices and our efficient cost benchmark, at TDCV, in 2017 and customer numbers for 2017 reported in 2017 prices.

customers. This is due to electricity prices typically being priced at a lower margin compared to gas.

5.11 Table A11.12 reflects the average (based on typical consumption) impact on customer bills of the reduction in default tariffs priced above the level of the cap, to the cap level. This is based on analysis of 2017 tariff prices and the 2017 baseline cap level.

Table A11.12: Estimated annual direct consumer savings by fuel type[99]

	Option 1		Option 2 (chosen cap level)		Option 3	
Fuel type	**Average default tariff customer saving**	**Total default tariff customer bill saving**	**Average default tariff customer saving**	**Total default tariff customer bill saving**	**Average default tariff customer saving**	**Total default tariff customer bill saving**
Dual Fuel	£146	£1,188m	£105	£878m	£72	£620m
Single Electricity	£72	£294m	£51	£209m	£34	£141m
Single Gas	£100	£179m	£80	£146m	£64	£119m
Total	-	£1,661m	-	£1,233m	-	£880m

Source: Ofgem analysis

Customer savings dependent on counterfactual tariff prices

5.12 Savings will also depend on the tariffs that customers would be on in the absence of the cap. Table A11.13 below illustrates the distribution of savings to customers on default tariffs based on the cap level options. This includes customers on tariffs that would have been priced below the cap level who will see no direct bill impact.

5.13 Our analysis suggests that at our chosen cap level (option 2) the majority of customers (98%) currently on default tariffs will see a bill reduction, and that among those whose bills are expected to fall, the majority will save between £65 and £174 based on typical consumption.

5.14 At a higher cap level (option 3) there is a greater number of customers who will receive relatively lower savings, whilst at our lower cap level (option 1) higher savings will be achieved.

[99] All savings calculated at TDCV.

5.15 Default tariff prices vary across the market, dependent on a number of factors such as the customers' supplier and individual tariff.

5.16 In Chapter 1 we highlighted that the largest suppliers in the market generally have more expensive default tariffs. In Table A11.13 below, we present how the expected savings of the default tariff cap will differ for customers based on their supplier type, all other things being equal.

Table A11.13: Estimated annual dual fuel direct savings (supplier type), in 2018 prices

Supplier group	Average saving per default tariff dual fuel customer based on TDCV		
	Option 1	Option 2 (chosen cap level)	Option 3
Overall market	£146	£105	£72
Six largest suppliers	£106 to £215	£65 to £174	£32 to £141

Source: Ofgem analysis

Customer savings dependent on consumption levels

5.17 The savings figures presented so far, are based on typical consumption. These are annual industry standard values for the annual gas and electricity usage of a typical domestic consumer. For individual customers, savings will vary with their level of consumption.

5.18 At zero consumption, the default tariff cap will limit the bills of customers by capping the level of the standing charge.

5.19 The default tariff cap also caps the unit cost of gas and electricity. This limits customers' bills dependent on their usage.

5.20 A lower average rate of consumption among customers compared to typical consumption would result in customers benefitting from lower savings compared to the average customer covered by the default tariff cap. High consumption customers will save the most in absolute terms, as they are using a higher amount of discounted energy.

5.21 In addition, we also note that a small number of single electricity customers could potentially experience bill increases. This is due to the different pricing levels which we have observed for electricity compared to its underlying efficient costs and suppliers tending to make lower returns on single electricity consumers. Depending on the level of consumption, these customers could

experience a bill increase if their unit rate and standing charge are changed to the cap level.

Customer savings for low income and potentially vulnerable customers

5.22 We have assessed the distributional impacts of the cap on customers that could be considered vulnerable, for example due to income, age, disability or illness. Linked to this, we have assessed the distributional impact on the nine protected characteristics under the Public Sector Equality Duty set out in section 149 of the Equality Act 2010.[100, 101]

5.23 In our May consultation we asked respondents whether they had reason to believe the default tariff cap could disproportionately impact any of the nine protected characteristics under the Equality Act 2010. We received six responses to this question. Of these, three reported no identified impact, whilst the remaining three identified the overlap between vulnerability, including those on the Priority Services Register, and the protected characteristics, for example age and disability.

5.24 The extent to which savings levels for potentiality vulnerable customers will vary is highly dependent on their individual customer profile.

5.25 As part of its energy market investigation the CMA conducted a survey to better understand the characteristics of disengaged customers in the domestic retail energy market. The results suggested that disengaged customers were more likely to be those on low incomes, those who have fewer qualifications, live in rented accommodation or who are above 65 years of age.

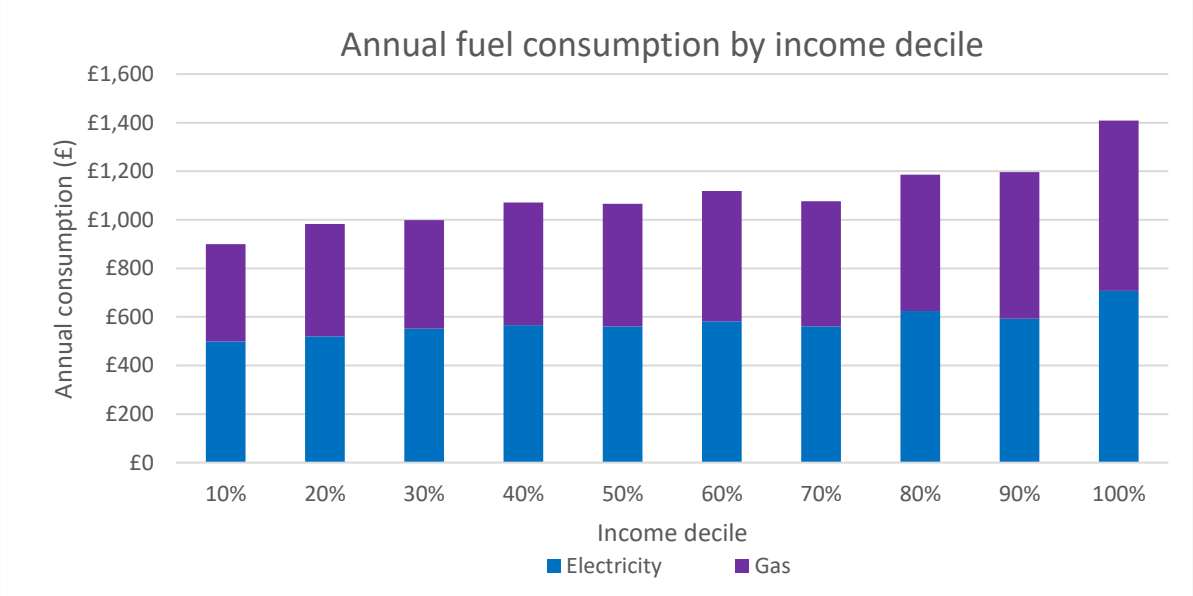
5.26 Analysis by the CMA also suggested that many of these customers were also more likely to see higher potential gains from switching, indicating they are more likely to be paying higher energy prices. Therefore, we might expect that these customers would benefit from higher levels of saving compared to the average customer, as their tariff levels could be assumed to be more expensive than the average default tariffs.[102]

5.27 However, as noted in paragraph 5.8, savings levels are also highly dependent on each consumer's level of consumption. Were these consumer groups to have, on average, lower levels of consumption than the general population, this might impact the savings available to these customers. Within our May consultation, we highlighted how the consumption profiles of certain customer groups who could be considered vulnerable, differs to that of the average population.

[100] As part of our decision making, we have had regard to the Public Sector Equality Duty set out in section 149 of the Equality Act 2010.
[101] These protected characteristics are age; disability; gender reassignment; marriage and civil partnership; pregnancy and maternity; race; religion of belief; sex; and sexual orientation.
[102] CMA (2016) Energy Market Investigation. Figure 9.2.

5.28 Figure A11.4 below shows a positive correlation between household income and energy consumption, with households within the lowest income deciles spending less on consumption. Across 2017, an average household within the UK spent approximately £1,100 annually on gas and electricity.[103] This compares to approximately £900 and £980 respectively, for the two lowest household income deciles. These averages include those customers on default tariffs and fixed term tariffs non eligible for the default tariff cap.

Figure A11.4: Household energy consumption by income decile[104]



Source: Ofgem analysis

5.29 In our publication on providing protections to vulnerable customers, we outlined how those customers with lower incomes are more likely to be on higher priced SVTs.[105] This indicates that the lower expenditure on energy by low income customers is primarily driven by lower consumption, rather than cheaper prices.

5.30 Therefore, we might expect that the absolute savings levels for lower income customers, and potentially that of other vulnerable customers, to be lower than that of the average customer in the market. However, the evidence[106] suggests that these savings will represent a higher proportion of these customers' income.

5.31 In response to our May consultation, three suppliers identified the overlap between vulnerability, including those on the Priority Services Register, and the protected characteristics and highlighted a risk to suppliers' service levels for vulnerable customers if the cap level does not allow for the higher cost of servicing these customers. To the extent that suppliers' profits are reduced as a

[103] Based on ONS Household Spend Statistics for UK financial year ending 2017. Table 6.
[104] Office for National Statistics: Table 6 Detailed household expenditure by gross income decile.
[105] Ofgem: Providing Financial Protections for Vulnerable Customers.
[106] Ofgem: Providing Financial Protections for Vulnerable Customers, page 16.

result of the cap, they may seek to cut costs through reductions in service levels, which could impact vulnerable customers. We assessed this potential impact in Chapter 6.

5.32 Other than the impacts discussed above that could vary dependent on age and disability we do not consider there would be a disproportionate impact on any of the other protected characteristics. This is because we have no evidence to suggest that any of these groups, on average, have different energy consumption, or a different propensity to be engaged in the market, compared to any other customer group.

5.33 We have also considered the impact on vulnerable customers of our proposal regarding the payment method uplift.

5.34 Standard credit customers are more likely to be classed as fuel poor[107] compared to direct debit, and therefore the potential savings for these customers would vary based on our final decision on the level of payment method uplift. A lower level of uplift would result in these consumers saving higher amounts.

5.35 However, although standard credit customers are proportionally more likely to be fuel poor than those paying by direct debit, in absolute terms there are significant numbers of fuel poor consumers who pay by direct debit. Therefore, we do not consider cross subsidisation between standard credit and direct debit customers to be justified from an equality perspective.

5.36 We have assessed the impact of the payment method uplift options on customer savings in more detail in paragraphs 5.37 to 5.40 below.

Customer savings for different payment methods

5.37 Customers paying for energy by standard credit tend to have a higher priced tariff than customers paying for energy by direct debit.[108] There are a number of potential reasons for these cost differences, such as additional working capital costs; additional bad debt costs; and other additional administrative costs, such as the administrative cost of bad debt, and use of call centres and other administrative processes. We calculate that in 2017, an efficient supplier would have incurred an additional £125 of costs per standard credit customer (including EBIT and tax).[109]

5.38 We have considered different options for the consideration of these costs in our design of the cap. Applying different levels of uplift for standard credit

[107] BEIS: Fuel Poverty Statistics, Page 56.
[108] See Appendix 8 of our statutory consultation.
[109] See Chapter 5 for discussion on the calculation of the payment method uplift.

customers will lead to different levels of savings for customers on different payment methods.

5.39 Our chosen option (option 2) reflects a payment method uplift of £83 at implementation of the default tariff cap. This payment uplift allocates some, but not all, of the additional costs of standard credit customers across payment methods. Although this payment uplift is not fully cost reflective, it does reflect the current differential applied by suppliers. Therefore, allocating costs in this way will result in an equivalent saving for standard credit and direct debit customers relative to the prices they currently pay.

5.40 The alternative option considered (option 2b) reflects a lower payment method uplift. At this level we would expect an average additional savings of £32 at typical consumption for dual fuel customers paying by standard credit compared to dual fuel direct debit customers. However, as noted above, we do not consider this would generate sufficient distributional benefits to justify the reallocation across customers based on their method of payment.

Regional variations in customer savings

5.41 The cap level will vary across Great Britain, because the costs of transporting the energy from the generation source to the customer (network charges) vary by region. The default tariff cap methodology sets the default tariff cap at different levels for customers in each of the 14 electricity network charging regions to reflect differences in network charges.

5.42 Regional variations in the level of the cap are intended to accurately reflect the differences in the costs of serving different regions. This means that the level of savings for customers in each region will not be affected by different levels of network charges.

5.43 However, we are aware of the potential for the expected savings for customers to differ within certain geographic regions, driven by the potential for customers in different regions to have atypical customer profiles. Due to a lack of granular data on the regional breakdown of different tariff structures, it has not been possible for us to estimate the region specific impacts of customer savings.

Indirect impact on customers due to suppliers' price responses

5.44 In this section we outline our assessment of how the default tariff cap could indirectly impact the customer bill in the event of suppliers changing prices in response to the cap. We have analysed this based on the two supplier price response scenarios detailed in paragraph 4.83, repeated below for ease of reference.[110]

- Scenario 1 - Prices fall to the cap: All default and non-default fixed tariffs above the cap level fall to the cap, while customers on tariffs priced below

[110] See Appendix 2 of our statutory consultation for more detail on the approach to this analysis.

the cap continue to pay the same as they would without the cap. This captures: a situation in which all suppliers price tariffs below the cap in the same way as they would without the cap; and a situation in which some suppliers increase their fixed tariff prices, but as a result lose customers on these tariffs to competitors who continue to maintain their fixed tariff prices.

- Scenario 2 - Prices converge to the cap: All tariff prices (both default and non-default fixed) converge to the cap level, including those that would otherwise be priced below the cap.

5.45 Based on our analysis relative to our chosen cap level (option 2) we estimate that in total there will be approximately 10.7 million customers on tariffs (either fixed tariffs or default tariffs) priced below the level of the cap at implementation.

5.46 The extent to which these customers will be impacted by changes to their bills is dependent on the pricing strategy implemented by suppliers as part of their response to the cap.

5.47 In scenario 2, where all prices converge to the cap, we estimate the average net increase in customer bills, or 'dis-benefit' per customer per year, for fixed tariff customers could be equal to up to £77 based on dual fuel typical consumption. This includes the potential decrease in prices of fixed tariffs priced above the cap.

5.48 We estimate the equivalent figure to be approximately £36 a year on average for the limited number of dual fuel customers on eligible default tariffs that would otherwise be priced below the cap level that may see an increase in prices in the price convergence scenario.

5.49 In total, at our chosen cap level (option 2), we estimate an indirect customer impact in isolation of between -£884m and £23m per annum for all customers. This figure reports the impact based on full adjustment of fixed tariffs. In practice fixed tariffs will take time to adjust. This is taken into account in our NPV calculation.

5.50 Table A11.14 below presents the breakdown of these potential price increases. The positive figures in the below table relate to where indirect price changes of fixed tariffs above the cap decrease to the level of the cap.

Table A11.14: Indicative annual indirect customer impact by tariff, in 2018 prices

Cap levels	Option 1		Option 2 (chosen cap level)		Option 3	
Scenario	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**
Average indirect impact on default tariff customer (TDVC)	£0	-£46	£0	-£36	£0	-£33
Total default tariff indirect impact	£0	-£2m	£0	-£8m	£0	-£18m
Average indirect impact on fixed tariff customer (TDVC)	£3	-£37	£0	-£77	£0	-£109
Total fixed tariff indirect impact	£62m	-£419m	£23m	-£884m	£16m	-£1,262m

Source: Ofgem analysis

Impact on customer service levels

5.51 Responses by suppliers to the default tariff cap may also impact customers through impacts on non-price factors. A reduction in suppliers' revenues and profitability, and additional pressures stemming from the default tariff cap to cut costs, could constrain the ability of suppliers to reinvest to fund innovation and improvements in customer experience. These factors could lead to lower levels of customer service and less innovation in customer service and/or tariff offerings.

5.52 However, licence conditions and the Standards of Conduct that are part of our regulatory regime, should mitigate that risk.[111] These standards are enforceable broad principle-based rules that apply across a range of supplier-customer activities. They highlight our fundamental expectations regarding how suppliers (and their representatives in the case of domestic suppliers) must ensure that each customer is treated fairly.

5.53 In addition, we expect other mitigations such as the customer complaint handling data collected by Citizens Advice, which is well publicised, will be used

[111] Ofgem: Supplier standards of conduct.

to ensure that customer service levels are not unduly impacted after the implementation of the default tariff cap.

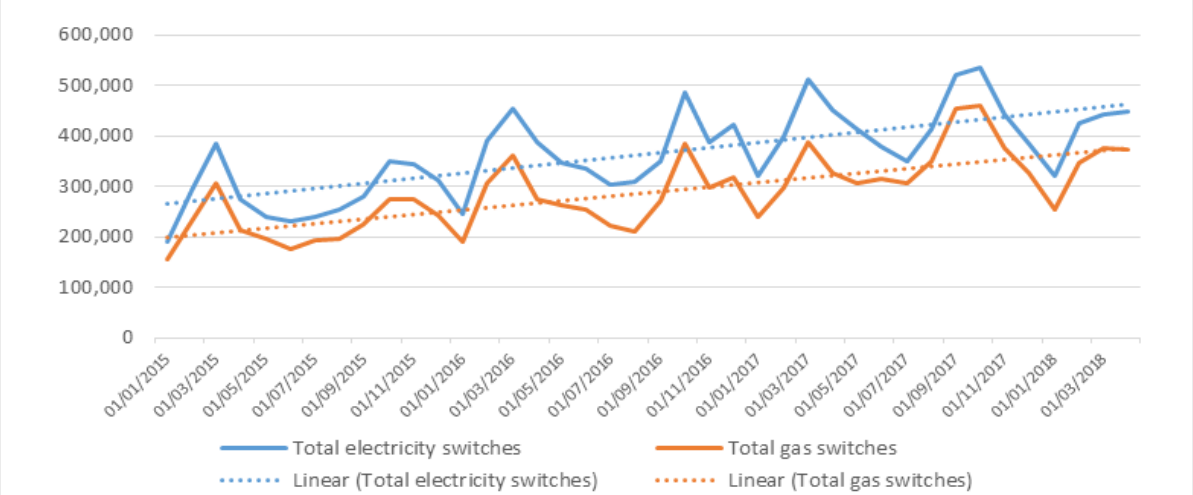
Indirect impact on customers through changes to switching

Switching in energy markets

5.54 Comparing energy tariffs and switching energy supplier or tariff regularly can help customers to get the best gas or electricity tariff for their usage levels and the best service offer. We monitor switching levels as an indicator of the level of competition within the domestic retail energy market.

5.55 The number of switches varies seasonally and also varies due to factors such as the level of marketing and important news announcements which stimulate customer engagement. However, despite fluctuations, as shown in Figure A11.5 below, there is a clear trend of increasing customer switching over recent years. In 2017 the total number of domestic gas and electricity account switches was over 9m, representing a 20% rise on 2016 levels.

Figure A11.5: Total monthly gas and electricity switches[112]



Source: Ofgem analysis

Drivers of switching

5.56 Basic economic theory suggests that rational customers respond to price signals, choosing the cheapest price for a homogenous good. In a market with a product as homogenous as energy, where only certain offerings such as customer service and brand differentiate market participants, we might expect significant numbers of customers to engage in the market, and ultimately switch to the cheapest deals.

[112] Ofgem: Retail market indicators.

5.57 However, despite significant savings being available to customers, the number of customers switching remains limited. Approximately 12 million customers are on default tariffs, and the number of customers actively engaging and switching tariffs on an annual basis makes up only a small proportion of customers. The rolling annual switching rate[113] as of June 2017 stood at approximately 17%.[114] Among the six largest suppliers, the average duration of a fixed tariff is approximately 18 months.[115] Therefore, if all customers sought the best deal once their fixed contract came to an end then approximately 66% of customers on these contracts would switch each year.

5.58 The drivers of switching are complicated and multi-faceted. Within Appendix 2 of our statutory consultation, we outline the analysis which we have undertaken to better understand how switching could be impacted by the default tariff cap. This enables us to take account of different responses from different customers resulting from our proposals.

Impact of default tariff cap on switching

5.59 In our analysis we have presented two scenarios in terms of the market impact of the cap. These reflect the limits of the potential impact on switching: scenario 1 reflects a scenario in which the cap has no impact on switching and therefore no impact on the prices of fixed tariffs or the number of fixed tariff customers; while scenario 2 reflects a scenario where all customers are on a tariff priced at the cap level. This would reflect a scenario whereby there would be low levels of switching in the market, though we might expect some customers to continue to switch for non-price factors.

5.60 In practice, however, it is likely that the outcome will be somewhere between these limits. To inform our view on where within these limits the market outcome will fall, we have analysed the potential impact of each cap level on switching rates.

5.61 We have examined the available data sources (detailed below) to assess this relationship, and quantified the potential impact on switching stemming from a change in price differentials following the default tariff cap. We provide a more detailed overview of this analysis within Appendix 2 of our statutory consultation. This analysis is based on:

- tariff and switching data provided by suppliers confidentially to us to support the default price cap analysis

[113] Rolling annual switching rates in a particular month are given by the ratio between the total number of switches and the average number of consumers in the 12 months before.
[114] Ofgem: State of the energy market 2018 page 25.
[115] Based on data from uSwitch website accessed 14 August 2018. Among the 10 cheapest fixed tariffs offered by the six largest suppliers, this average was slightly lower at around 15 months.

- switching data from our recently conducted Cheapest Market Offer Letters[116]
- our monitoring and compliance data on pricing and customer numbers for suppliers from the PPM cap
- historical data on Great Britain's price differentials and switching rates
- international case studies on price protections and switching effects in other countries
- data from our collective switching trials.[117]

5.62 In analysing the impact of the default tariff cap on switching, we have drawn on a range of sources, detailed in Appendix 2 of our statutory consultation. Our quantitative analysis is mainly based on the results of Ofgem trials and surveys, PCW data and market data.

5.63 Empirical evidence from previous interventions also provides useful insights. We have anecdotal evidence that there was a reduction in switching rates following the introduction of the PPM cap – although some cited greater changes than others. International evidence (see Appendix 11.2) also suggests that the implementation of price caps can reduce switching, with a lower cap having a greater impact.

5.64 To estimate the impact on switching from the default tariff cap we first analysed the potential impact of a default tariff cap on switching as if implemented in 2017. These estimates rely on the use of 2017 data, including the 2017 default cap level, the potential supplier response, switching levels and tariff prices for 2017.

5.65 We have first considered the impact of the direct change in default tariff prices on switching rates.

5.66 From our analysis of tariff prices, we estimate that at our chosen cap level (option 2) the default tariff cap could reduce the price differential between default tariffs and the cheapest fixed tariffs on the market from £260 to £140.[118] Our analysis estimates that this could reduce switching rates by between 10% and 40%, with a central estimate of 30%. This analysis is based on the steady

[116] Ofgem: Cheapest Market Offer Letter.
[117] Ofgem: Collective Switching Trial.
[118] Differential based on both the average price of an SVT of the six largest suppliers in December 2017, our proposed cap level, and the average value of Ofgem retail monitoring data's cheapest tariff (basket) taken from across 2017.

state and does not account for temporary shocks or fluctuations impacting the market.

5.67 Based on our projected baseline switching rate for 2019, this suggests a switching rate of around 12% in 2019. This indicates a material potential reduction in switching as a result of the default tariff cap. However, under this scenario, we might still expect approximately 8.5 million account switches in 2019, an absolute number of switches higher than what was observed in 2016 where there were around 7.8 million account switches, and significantly higher than in any of the four years prior to that, during which the number of account switches ranged from 5.3 million to 6 million.

5.68 This reduction in switching suggests that suppliers would be able to increase fixed tariff prices without losing all their customers. However, if suppliers were to increase their fixed tariff prices to the cap level, then while lower priced fixed tariffs continued to be offered by other suppliers in the market, they could lose market share by increasing their fixed tariff prices to the cap level. But the existence of switching in the market would allow some suppliers to compete under the cap and gain market share.

5.69 In comparison, at a lower cap level (option 1), we estimate that the direct impact on default tariff prices could reduce switching by between 20% and 55% with a central estimate of 45%. This suggests a more substantial impact on switching, and lower switching rates. This would allow suppliers to increase fixed tariff prices to the cap level without losing as many customers, increasing the likelihood of them doing so, and resulting in an outcome closer to our price convergence scenario (scenario 2).

5.70 At a higher cap level (option 3), we estimate that switching could reduce by between 0% and 30%, with a central estimate of 20% as a result of default tariff prices falling to the cap level. At this cap level the impact on switching is less pronounced, suggesting that there would be more pressure on suppliers to maintain lower fixed tariff prices, or else lose market share to those that do offer lower prices. Any suppliers that increased their fixed tariff prices would face a greater risk of losing customers to lower priced competitors, meaning a market outcome with more suppliers maintaining lower fixed tariff prices (scenario 1).

5.71 In practice the impact on individual suppliers will depend on the relative engagement of their own customer base and the extent of non-price factors such as brand loyalty which could prevent customers switching away.

5.72 The pricing response by suppliers could have a further impact on switching rates and customer engagement. As noted above, the impact on individual suppliers will vary. Large suppliers tend to have more disengaged customers;[119]

[119] Ofgem: Consumer engagement in the energy market. Page 40. In 2016, consumers who are with a smaller or medium sized supplier are almost five times more likely to have switched recently as those with one of the larger companies.

therefore, they are more likely to be able to increase fixed tariff prices without losing customers, while smaller suppliers with less brand recognition and generally more engaged customers, may need to maintain low prices in order to compete.

5.73 We therefore consider a potential outcome to be a situation whereby large suppliers converge prices to the cap level, whilst small suppliers maintain lower fixed tariff prices. For the reasons identified in the preceding paragraph, contracts offered by small and large suppliers are not direct substitutes, therefore for any given price differential, the impact on switching will depend on whether the switch is to a small or large supplier. We have accounted for this in our analysis based on evidence on switching between different sized suppliers.

5.74 We have analysed the potential impact on switching of this market outcome. We assume that smaller suppliers maintain their fixed tariffs at the prices they would charge in the absence of the cap, whilst large suppliers converge prices. Based on this scenario we estimate a reduction in switching of 10% to 50% at our chosen cap level.

5.75 We consider the upper end of this range to reflect a situation in which only a few small suppliers were able to compete at lower prices.[120] This corresponds to an estimated switching rate of 8.5% in 2019, substantially below the current level. In absolute terms, this corresponds to around 6 million switches per year, similar to the number of switches observed in 2015.

5.76 If we were to take the central estimate under this scenario, we might expect a fall in switching of around 40%.

5.77 Based on the evidence available to us, our analysis indicates that the impact of this outcome on switching would not vary substantially across the cap levels considered – ranging from a central estimate of a 45% reduction in switching under a higher cap level (option 3) to a 55% reduction in switching under a lower cap level (option 1). This suggests those customers switching to small suppliers are less sensitive to marginal differences in the price differential at the levels we are considering.

[120] Within Appendix 2 of our statutory consultation, we outline our methodology for estimating the potential impact on switching. This analysis is based on 2017 data and assumes a steady state environment. It therefore does not take account of temporary market fluctuations or shocks.

Impact on energy consumption

Domestic energy and gas usage

5.78 Domestic energy consumption makes up a significant proportion of UK energy demand. BEIS[121] has estimated that the domestic sector accounted for 28 per cent of total 2016 final energy consumption.

5.79 Domestic energy usage in the very short term is primarily driven by the weather, due to the majority of household energy consumption being used for the heating of space and water. However, over the longer term, a number of other factors influence demand, such as household characteristics, appliance efficiency and the price of energy itself.

The impact on energy consumption

5.80 The default tariff cap is expected to lead to a direct reduction in the price of energy for the majority of eligible customers. We assume within this impact assessment, all others things being equal, that any reductions in price could be expected to lead to an increase in energy usage for these customers.

5.81 Conversely, as outlined in paragraph 4.83, under our supplier response scenarios, some customers could see increases in bills. For these customers, this could potentially lead to a reduction in energy consumption. The overall net change in consumption will depend on:

- the number of customers impacted
- the size and direction of any price changes experienced by these customers
- their price elasticities of demand.

5.82 We have quantitatively assessed the potential impact on consumption resulting from a change in customer bills of both default and fixed term tariffs, based on estimated price elasticities of demand for energy.

The price elasticity of demand for electricity and gas

5.83 The net impact on energy consumption will depend on the price elasticity of demand for both gas and electricity. Evidence suggests that for most customers, price elasticities for energy are low, with consumption changing only slightly in

[121] BEIS: Energy Consumption Report 2018 Figures.

response to a change in bills. Price elasticities have been analysed in a range of studies which we describe below.

5.84 For gas price elasticities, while there is a degree of variation in the price elasticity estimates depending on the methodological approach applied to assess it, a range of studies compiled by University College London[122] imply that domestic demand for gas is inelastic. Estimates for domestic gas price elasticity range between -0.1 and -0.28. The study notes that in the short run,[123] 'real' elasticities are likely towards the lower end of the outlined range, due to greater consistency at these levels with results from other similar studies.

5.85 With regard to electricity, a survey of studies conducted by Espey and Espey (2004)[124] highlighted estimates for domestic electricity price elasticities of -0.35 and -0.85 in the short and long run respectively. However, we note that there are a number of studies[125] which estimate the short run price elasticity of demand for electricity as ranging from -0.20 to -0.24.

5.86 We note that there is significant variability in the price elasticity estimates for gas and electricity outlined within the studies we identified, particularly when comparing elasticities in the short run and long run. These studies highlighted the difficulty in separating price influences from other drivers of consumption. The findings are also likely to be affected by factors such as the time period considered, geography and samples used.

5.87 We have, therefore, assumed the price elasticity of demand for gas to be approximately -0.10, using the lower end short run estimates within those compiled by University College London, within the Department of Energy and Climate Change (DECC) study. The study suggested that these lower estimates are considered more accurate estimates as they are more consistent with the findings from other studies.

5.88 For electricity, we have taken an average short run elasticity from the studies, which provides the estimate of -0.26 we use within our analysis. This represents an adjustment to the assumption applied in our draft impact assessment which took the value provided by a meta-analysis from a single academic study.[126]

5.89 We have based our estimates of the potential impact on consumption and subsequently on emissions, on these short run elasticities.

[122] BEIS: Gas Price Elasticities.
[123] Short-run elasticities isolate only the behavioural changes in response to price, and not the effect of any investments that occur in response to sustained price changes.
[124] Epsey and Epsey (2004) Turning on the Lights: A Meta-Analysis of Residential Electricity Demand Elasticities.
[125] Bohi & Zimmerman (1984), Dahl (2004), Bernstein & Griffin (2005).
[126] Epsey and Epsey (2004) Turning on the Lights: A Meta-Analysis of Residential Electricity Demand Elasticities.

5.90 One response to our draft impact assessment accompanying the statutory consultation questioned whether short run elasticities were appropriate when assessing the impacts of the default tariff cap. The short run elasticities applied account for the direct consumer response to a price change. They do not include longer term factors such as changes in consumers' investment decisions (possibly from the purchasing of additional electrical consumer goods due to cheaper costs of running them).

5.91 However, we consider that short run elasticities better reflect the potential response from consumers that might be observed over the period the default tariff cap is in place. For instance, we would not expect that consumers would alter their investment decisions based only on their knowledge of the temporary default tariff cap. Therefore, in our final impact assessment we continue to use short run elasticities in our analysis.

5.92 Over the longer term we might expect a higher price elasticity of demand. However, due to the time limited nature of the default tariff cap, we consider that longer run factors (such as consumer goods investments) that would increase the level of elasticity are less likely to occur.

5.93 We note that these elasticities are for the average customer. In practice, individual customers and customer groups will have a range of elasticities driven by their own personal circumstances. For instance, vulnerable customers are likely to spend a greater proportion of their disposable income on energy,[127] and that in some cases they may ration their energy usage due to financial constraints.

Quantifying the impact on consumption

5.94 One of the primary factors which will influence the overall change in consumption is the number of customers impacted. On average at a cap level of option 2, we believe that around 10.4 million default tariff customers will see savings. As outlined in paragraph 5.8, savings for individual customers will differ based on their individual customer profiles. However, we estimate that the average dual fuel bill will be reduced by £105 and the average gas and electricity single fuel tariff will decrease by £51 and £80 respectively.

5.95 However, we might expect that up to an additional 10.7 million customers experience price increases stemming from a supplier response. However, we note that many of these consumers would not experience price increases, due to being with suppliers who are less impacted by the default tariff cap. For those customers experiencing price increases, we estimate potential price increases in the region of up to £77 for the average customer.

5.96 Based on our assumed price elasticities of demand for both gas and electricity respectively, and the expected net customer bill impacts of our chosen cap level (option 2), we have estimated the net impact of the cap on energy

[127] Ofgem: Providing Financial Protections for Vulnerable Customers, page 16.

consumption. We estimate that domestic consumption could increase by between up to 1,911 gWh or ~164 ktoe depending on the supplier response scenario applied. This reflects up to 0.41% of total domestic consumption on an annual basis. These savings are summarised in Table A11.15 below.

Table A11.15: Indicative annual change in energy consumption[128]

Cap levels	Option 1		Option 2 (chosen cap level)		Option 3	
Scenario	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**
gWh	2,660	1,657	1,911	-19	1,346	-1439
ktoe	229	142	164	-2	116	-124
% change in UK energy consumption	0.57%	0.35%	0.41%	0.00%	0.29%	-0.31%
Monetised customer bill impact[129]	£222m	£136m	£157m	-£7m	£108m	-£123m

Source: Ofgem analysis

5.97 The results reported in Table A11.15 above are based on the estimation of individual changes in both gas and electricity consumption for all customers impacted.[130] We note that over the longer term, a number of additional factors will influence the net change in consumption, principally, the supplier price response.

5.98 We do not include the impact on energy consumption on customer bills within our quantified impact on customers; while at a higher rate of energy consumption customer bills will increase, customers will gain welfare benefits as a result of the increase in consumption, such that the net welfare impact on individual customers would be small. However, there may be additional societal benefits of increased energy consumption such as health benefits of homes

[128] This fall in consumption in scenario 2 is due to the proportional impact on fixed and default tariff prices. A given absolute increase in fixed tariff prices represents a larger proportional price increase than the same absolute reduction in default tariff process would represent in terms of proportional price decrease. The former therefore generates a larger reduction in energy consumption than the increase generated by the latter.
[129] Impacts are monetised based on the post cap average price per kWh of both electricity and gas.
[130] Using both the price elasticity of demand (PED) for domestic gas and electricity usage, we have estimated the impact of the bill savings for all dual fuel, single gas and single electricity accounts seeing bill reductions by the default tariff cap, as well as the potential price increases which customers may face indirectly.

being better heated. We have not quantified these impacts, but they would contribute to the benefits of the price cap.

5.99 We consider the potential negative impacts of increased energy consumption on the environment in Chapter 7.

Summary of impacts on customers

5.100 Whilst the direct impacts on consumers can be estimated with some degree of certainty, the complexity of potential impacts on the retail energy market in terms of suppliers' pricing responses and customer switching, and the dynamic interaction between these two impacts, means there is uncertainty regarding the indirect impact of the cap on consumers.

5.101 We have attempted to estimate the potential range of impacts of the cap on consumers based on the two potential market outcome scenarios, for a range of different levels of the cap, and within this estimated the impact of supplier pricing responses, changes to switching rates and consumption. However, due to its complexity, we have not attempted to model the dynamic interaction between these impacts and therefore these should only be seen as indicative estimates. Table A11.16 below presents these estimates for the cap levels considered.

Table A11.16: Estimated annual consumer impact summary, in 2018 prices[131]

Cap levels	Option 1		Option 2 (chosen cap level)		Option 3	
Scenario	**Scenario 1: Prices fall to cap**	**Scenario 2: prices converge to the cap**	**Scenario 1: Prices fall to cap**	**Scenario 2: prices converge to the cap**	**Scenario 1: Prices fall to cap**	**Scenario 2: prices converge to the cap**
Direct impact						
Default tariff customers	£1,661m		£1,233m		£880m	
Indirect impact						
Default tariff customers	£0	-£2m	£0	-£8m	£0	-£18m
Fixed tariff customers	£62m	-£419m	£23m	-£884m	£16m	-£1,262m
Net default tariff impact	£1,661m	£1,660m	£1,233m	£1,225m	£880m	£862m
Net impact for all consumers	£1,724m	£1,240m	£1,255 m	£341m	£896m	-£400m

Source: Ofgem analysis

5.102 The default tariff cap will have substantial benefits for default tariff customers, with an estimated 98% of default tariff customers seeing bill reductions[132] and an average saving of £105 among these customers.

5.103 We recognise that, in response to the reduction in their revenues that this generates, fixed tariff customers may pay more under the cap, and some customers on default tariffs priced below the cap level may also see an increase in their bills.

5.104 This is because, whilst we consider it likely that some suppliers will continue to price below the cap level, there could be a decrease in customer switching due to the protection the cap provides and the reduced price differential between default and fixed tariffs, meaning that more customers may choose to roll on to default tariffs rather than switch to lower priced fixed tariffs.

5.105 Despite this, our analysis suggests that the net impact on customers will be positive. Furthermore, the net impact hides the additional distributional impacts of the cap that are not reflected in the monetised impacts. Vulnerable customers

[131] Positive values within the table relate to bill savings for consumers, while negative numbers relate to potential bill increases.
[132] Based on 2017 tariff data.

are more likely to be on high-priced SVTs and spend a higher proportion of their income on energy due to them being on lower incomes.[133] When considering the welfare impacts, we would put a greater weight on the social value of savings to these customers compared to those of higher income groups, who tend to be more engaged customers. The monetised net customer bill impact does not adjust for this distributional weighting and therefore underestimates the benefit to consumers.

5.106 There may also be social benefits from, particularly low income and other vulnerable customers being able to better heat their homes due to lower energy prices.

[133] Ofgem: Providing Financial Protections for Vulnerable Customers.

6. Impact on competition and innovation

This chapter presents our analysis of the impact of the default tariff cap on price and non-price competition, and innovation in the market.

6.1 The Act states that Ofgem must have regard to 'the need to set the cap at a level that enables holders of supply licences to compete effectively for domestic supply contracts.'

6.2 We have considered the potential impact of the default tariff cap on competition across a number of areas, including:

- the impact on price competition
- the impact on non-price competition
- the impact on market entry and exit

We consider each area separately in the following sections.

6.3 In addition to the impacts on competition in the market, we have considered the impact of the default tariff cap on innovation and differentiated tariff offerings, specifically the supply of renewable tariffs.

6.4 Due to the high degree of uncertainty surrounding the reaction by the market to the introduction of the default tariff cap, we have not attempted to quantify the impact of the cap on competition and innovation within the market. We have therefore analysed the potential impact qualitatively by using analysis to inform our view of the impact where appropriate.

6.5 Within our assessment of the potential impacts on competition and innovation, we have drawn upon the CMA's impact assessment guidance.[134]

Impact on price competition

6.6 The introduction of the default tariff cap will limit the maximum price that suppliers are able to charge using default tariffs.

6.7 In its energy market investigation, the CMA considered the introduction of a cap for all SVT customers as a potential remedy for the higher prices of SVTs. However, the CMA took the view that such a price cap on SVTs would run

[134] Competition & Markets Authority (2015) Competition impact assessment. Part 2: guidelines. This sets out the need for policy makers to assess proposals in terms of whether the measure will: directly or indirectly limit the number or range of suppliers; limit the ability of supplier to compete; or limit suppliers' incentives to compete vigorously.

excessive risks of undermining the competitive process and result in worse outcomes for consumers in the long-run.[135] It was considered that this risk might occur through a combination of a number of factors, including:

- reducing the incentives for suppliers to compete
- reducing the incentives of customers to engage in the market
- increasing regulatory risk.

6.8 In this section we assess how the default tariff cap may impact incentives for suppliers to compete. In relation to this we have drawn on our analysis of how the default tariff cap may impact consumer engagement within the market. This is covered in greater detail in Chapter 5 above. We have considered the impact on regulatory risk separately in Appendix 11.3.

6.9 In assessing the impact on competition of the default tariff cap, we have first considered the state of competition within the market. We then analyse the direct impact of the cap on the market, and the potential subsequent indirect impacts.

6.10 At present, there is a two-tier market whereby suppliers compete for engaged customers on the basis of non-default fixed tariffs, whilst less engaged customers are on higher priced default tariffs.[136]

6.11 We consider that default tariffs largely do not compete against other default tariffs but rather default tariffs compete against the (typically) lower priced fixed tariffs which customers could switch onto. As a result, there are potential large price dispersions across tariffs and suppliers currently available in the market. Price dispersions represent the savings that customers could achieve by switching tariffs or suppliers. Evidence suggests that customer switching has a positive relationship with price differentials, ie the higher price differentials within the market, the higher the switching rate.[137]

6.12 However, there is disengagement in the market which means that larger suppliers who tend to have stickier customers, or may attract customers on non-price factors eg brand, can typically price default tariffs higher than smaller suppliers.

6.13 Amongst fixed tariffs, we consider that there is currently price competition. However, we note that there is also a degree of non-price competition whereby larger suppliers can price higher as a result of brand recognition and/or brand

[135] CMA (2016) Energy Market Investigation.
[136] House of Commons (2018) Domestic Gas and Electricity (Tariff Cap) Bill. Explanatory notes.
[137] See Appendix 2 of our statutory consultation for details.

loyalty, or specialist suppliers can price higher for differentiated products, eg renewable tariffs.

6.14 In order to compete in the market, some suppliers offer very low priced fixed to attract new customers. In some instances, these tariffs may be priced at a loss, with the intention that suppliers will recoup this loss when customers roll off of the tariffs onto higher priced default tariffs.

6.15 By placing a cap on default tariffs, the price differential between default tariffs and fixed tariffs is immediately reduced. This creates less of an incentive for customers to switch and results in a general reduction in consumer engagement. We note that a reduction in price dispersion may not account for all of the reduction in customer switching. Indeed, switching may reduce as customers feel protected by the default tariff cap and disengage from the market. Chapter 5 sets out in more detail our assessment of the impact the default tariff cap will have on switching.

6.16 For all of the default tariff cap level options we have considered, we have estimated that customer switching will reduce based on the relative reduction in price dispersions across the market. Table A11.17 below presents the price dispersions and switching levels estimated for each cap level option.

Table A11.17: Summary of the direct impact on price dispersion and consumer switching at different cap levels

	Option 1	Option 2 (chosen cap level)	Option 3
Price dispersion within the market	£100	£140	£170
Reduction in price dispersion	£160	£120	£90
Reduction in consumer switching (%)	-45%	-30%	-20%

Source: Ofgem analysis

6.17 This reduction in switching and general consumer engagement means that following the default tariff cap, we can expect that there will be an increase in the number of default tariff customers (as previous fixed tariff customers would not switch once rolled onto a default tariff).

6.18 Simultaneously, the default tariff cap is expected to directly reduce the returns for suppliers to offer fixed tariffs, in terms of the potential future revenues from customers rolling onto default tariffs.

6.19 The impact on customer engagement and the relative returns from fixed and default tariff customers is likely to impact the dynamics of competition in the market, as well as the optimal pricing strategy for individual suppliers. There will be a trade-off for some suppliers between offering a lower priced fixed tariff at low or negative profitability in order to maintain or increase market share, and converging fixed tariff prices to the cap level, losing some customers to competitors who are able to offer lower priced fixed tariffs but increasing the margin on the retained customers.

6.20 Furthermore, as we mention in paragraph 4.86, we anticipate that the default tariff cap may discourage suppliers from offering such low priced tariffs aimed at acquiring new customers, as they would be less able to recoup any losses that result from this pricing strategy once customers roll onto default tariffs. The impact of an increase in the price of fixed tariffs is captured within our price convergence scenario analysis set out below. However, we note that the cap may have a greater impact on those suppliers which rely more heavily on low priced tariffs to acquire new customers.

6.21 In practice, we expect that an individual supplier's optimal pricing strategy will depend on the overall impact of the cap on customer engagement, the engagement of the supplier's own customer base and non-price factors which may help attract or retain customers.

6.22 As set out in paragraph 4.83, we have developed two scenarios to reflect the range of responses that suppliers may adopt in response to the default tariff cap. These two scenarios are:

- Scenario 1 - Prices fall to the cap: All default and non-default fixed tariffs above the cap level fall to the cap, while customers on tariffs priced below the cap continue to pay the same as they would without the cap. This captures: a situation in which all suppliers price tariffs below the cap in the same way as they would without the cap; and a situation in which some suppliers increase their fixed tariff prices, but as a result lose customers on these tariffs to competitors who continue to maintain their fixed tariff prices.

- Scenario 2 - Prices converge to the cap: All tariff prices (both default and non-default fixed) converge to the cap level, including those that would otherwise be priced below the cap.

6.23 At a lower cap level of option 1 we would expect that there will be more suppliers for whom the optimal pricing strategy would be price convergence, with fewer suppliers offering low price fixed tariffs.

6.24 Conversely, at a higher cap level (option 3), there would be less of a reduction in price differentials between fixed and default tariffs, and thus a lower reduction in customer switching and engagement. As a result, we would expect it is more likely a scenario where prices fall to the cap would occur. Suppliers

would, generally, maintain fixed tariff prices at a low price, as increasing prices would result in too many customers switching to a lower priced alternative.

6.25 As long as the level of the cap allows some price differential between default and fixed tariffs (and thus there is some level of customer switching within the market), we would expect there to be some level of price competition amongst fixed tariffs.

6.26 Therefore, at our chosen cap level (option 2), we anticipate that the impact will fall towards the middle of the two scenarios we have analysed.

6.27 As presented in Table A11.17 we estimate that customer switching will reduce by in the region of 30% (within a range of 10% and 40%), and therefore that there will be a level of customer engagement retained within the market which will incentivise price competition amongst suppliers. However, as noted in paragraph 6.21, we expect that suppliers will respond differently, and as a result there may be different impacts on price competition for different supplier groups.

6.28 For larger suppliers, who typically have stickier and less engaged customer bases, we expect that they will be incentivised to converge fixed tariff prices to a certain extent (but perhaps not fully). Meanwhile, based on analysis of costs and current pricing strategies, we expect that price competition amongst small suppliers will remain, as these suppliers typically have lower proportions of customers on default tariffs and a more engaged customer base and therefore a customer base which is more reactive to price changes.

6.29 Furthermore, some small and medium-sized suppliers have costs (excluding policy costs) below those allowed for in the default tariff cap. We would expect these suppliers and efficient new entrants to offer competitive tariffs, which will provide incentives for engaged customers to switch to such lower priced fixed tariffs.

6.30 We, therefore, consider that, overall, at our chosen cap level (option 2), there will remain some level of price competition within the market, albeit at a reduced level when compared to the baseline scenario.

Impact on non-price competition

6.31 The implementation of the default tariff cap, through its impact on supplier revenues and profitability, could also impact the extent to which suppliers compete on other non-price factors. We have primarily focused our consideration of non-price factors on quality of service, although we note that in some cases innovation in tariff offerings may also be relevant. We have considered the impact on innovation separately in paragraphs 6.74 to 6.92 but we note that there may be some cross-over between non-price competition and innovation.

6.32 We have drawn upon evidence from international case studies relating to the impact on non-price competition as a result of the introduction of price protections in retail energy markets. Our findings from international case studies are presented in Appendix 11.2.

6.33 Our case study evidence suggests that the default tariff cap could generate opposing drivers to non-price competition within the market.

6.34 As we have set out in Chapter 5, we expect to see customers becoming less engaged in the market and a reduction in customer switching following the introduction of the cap. As a result, this may mean that suppliers face weaker incentives not only to compete on price but also non-price factors.

6.35 In Chapter 4 we consider the potential for suppliers to achieve cost savings through efficiency improvements. As we also note, at our chosen level of the cap, a number of suppliers will need to reduce operating costs in order to achieve normal profits, even with convergence of fixed tariff prices.

6.36 Making such reductions through genuine efficiencies may be challenging due to the scale of efficiencies required. As a result, there is a risk that suppliers cut other controllable costs, for example costs associated with serving customers. Depending upon the extent to which suppliers cut costs, there could be an adverse impact on the level of service quality. This is a concern that was voiced by consumer groups in the responses to our May consultation, as well as in several of the responses to our statutory consultation.

6.37 However, it is our view there will be a limit to the extent to which suppliers are able to reduce their level of customer service as a way to reduce costs. While we recognise that suppliers may look to reduce spending on customer service as a way to cut controllable costs, we would still expect them to provide a minimum standard of acceptable service to customers. We would not expect a reduction in service below that of the minimum standard. The Electricity and Gas (Standards of Performance) legislation[138] will ensure that, at a minimum, this expected standard of service is provided to consumers. In addition, the Electricity and Gas Supply Standard Licence Conditions provide for a guaranteed provision of service to consumers.

6.38 We expect other mitigations, such as the well-publicised customer complaint handling data collected by Citizens Advice, will also be used to ensure that customer service levels are not unduly impacted after the implementation of the default tariff cap.

6.39 There could however be some impact on the quality of customer service offered by suppliers that currently offer higher levels of customer service. This may occur if this higher customer service is associated with higher operating costs,

[138] The Electricity and Gas (Standards of Performance) (Suppliers) Regulations 2015 http://www.legislation.gov.uk/uksi/2015/1544/pdfs/uksi_20151544_en.pdf.

which could not be recouped under the cap. However, there is no clear evidence that we are aware of that this is the case. In fact, higher levels of customer service could generate efficiencies, for example due to lower numbers of complaints and from timely resolution of issues, preventing them from escalating.

6.40 This view is supported by the findings of the CMA's energy market investigation. The CMA considered that there was no significant risk that a price cap on all SVTs would reduce the quality of service received by customers.[139] It noted that in response to the CMA's Second Supplemental Remedies Notice, suppliers stated that the Standards of Conduct (which suppliers are obliged to deliver) mitigate against the risk of significant reductions in the quality of service. Furthermore, suppliers also noted that the pressure of competition and the incentive to maintain or increase market share would mitigate against falling customer service quality.[140]

6.41 It is also possible that, as a result of a reduction in price competition under the price cap, competition may become more focused on quality as a way for suppliers to differentiate themselves. This occurred in the Illinois domestic retail energy market (see Appendix 11.2), where switching has been maintained, despite competitive tariffs being relatively more expensive than regulated tariffs.

6.42 In addition, we expect that suppliers with higher cost business models will still be able to offer fixed (non-default) tariffs with additional features/qualities, such as higher levels of customer service, at a higher price. There will therefore remain the possibility for different business models that compete on non-price points, eg customer service, to be viable under the default tariff cap.

6.43 Overall, any reduction in non-price competition as a result of the introduction of the default tariff cap, all else being equal, would be a negative outcome for consumers. For example, reduced customer service could lower customer satisfaction and increase the cost of time spent contacting a supplier.

6.44 The extent to which non-price competition is impacted could depend on the cap level set and the balance between the drivers of non-price competition: the cost of non-price competition and the degree of engagement by customers on non-price factors. A higher cap (option 3) would allow for higher spending on customer service than in option 2, but would maintain greater price competition which may make non-price competition less important. In contrast, a tighter cap level (option 1) would put greater pressure on costs associated with non-price competition and to the extent that consumer engagement is reduced for all factors (price and non-price) this could reduce incentives for suppliers to compete on non-price factors as well as on price. However, to the extent that

[139] CMA (2016) Energy Market Investigation.
[140] CMA (2016) Energy Market Investigation.

reduced price competition stimulates increased non-price competition, this could increase the incentive for suppliers to compete on non-price factors.

6.45 One response to our draft impact assessment highlighted that our policy proposal to transition those customers in receipt of the vulnerable customer safeguard tariff, to the direct debit level of the default tariff cap, will impact on the choice available to these customers. This response proposed that there would be a reduction in competition for these customers, as they would be placed on a level of the cap below their underlying costs to serve.

6.46 We note, however, that many of these consumers have seen little benefit from competition in the market already, to such an extent that the vulnerable customer safeguard tariff was introduced for their protection. We therefore do not consider that these consumers would subsequently suffer from a decrease in their consumer choice, due to the implementation of underlying protections.

6.47 In addition, the supply licence makes clear suppliers' obligations to treat their customers fairly and in particular to devote special attention to those in vulnerable circumstances who may need additional help or services to get good outcomes from the energy market. We would therefore not expect any specific targeted mistreatment of these customers resulting in a reduction in their choice in the market.

Impact on market entry and exit

6.48 Within our State of the energy market 2017 report[141] we stated that we consider easy market entry and exit to be one of the features of a competitive energy market.

6.49 The domestic retail energy market has historically been concentrated to a significant extent to six large suppliers. However, more recently the six largest suppliers have seen their market share being eroded by smaller suppliers and new entrants. As of June 2018, the six largest suppliers accounted for approximately three-quarters of domestic retail supply (75% and 76% in gas and electricity respectively),[142] with the remaining fifth of the market being covered by medium and smaller suppliers.

6.50 The cap could encourage suppliers to innovate more rapidly to remain competitive, and encourage the entry of firms with innovative new business models. But it could also reduce incentives to enter the market because of reduced opportunities to earn super-normal profits.

6.51 As we have mentioned in the preceding sections, the default tariff cap will reduce the profitability of suppliers, and reduce price and non-price competition

[141] Ofgem: State of the energy market 2017.
[142] Ofgem: State of the energy market 2018.

within the market. To the extent that particular firms experience these two impacts, it may result in firms exiting the market.

6.52 We have assessed the potential impact on market entry and exit of our chosen cap level as well as a lower and higher cap level (option 1 and option 3 respectively).

Impact on market entry

6.53 Over recent years the GB domestic retail energy market has attracted a considerable number of new entrants. For example between June 2017 and June 2018, the total number of licensed domestic energy suppliers increased by 13 to 73.[143]

6.54 We are currently undertaking a review of the supplier licence regime to ensure that appropriate protections are in place against poor customer service and financial instability. Depending on the outcome of this review, it could impact on market entry. This work is currently underway and given the overlap with the default tariff cap, any impact on market entry for either programme of work should be attributed appropriately. This review should also be accounted for within the baseline against which the default tariff cap is assessed.

6.55 Our analysis suggests that following introduction of the default tariff cap new entrants with no unique selling point may be discouraged from entering the market. Through discussion with market participants, we understand that there would likely be a reduction in market entry from 'plain vanilla' suppliers – ie those suppliers with no unique selling points eg renewable energy. There has already been a decline in plain vanilla suppliers entering the market, as it has been perceived that the market opportunity for these suppliers has already been exhausted by such suppliers which are already active in the market. This trend has been occurring independently of the default tariff cap, but we expect that it may be further exacerbated by it.

6.56 We have recognised the potential for a cap to negatively impact the ability for new entrants focused on technology-led tariff options to enter the market. For instance, for innovative business models that are dependent on flexible pricing eg time of use tariffs, or other multi-rate tariffs, there could be instances where prices rise above the maximum allowed under the cap level and would not be allowed as a default tariff under the default tariff cap. However, we have sought to mitigate against this as part of our design of the cap. In an effort not to discourage new innovations coming forward in the market, we will look to make an allowance for time of use and other multi-rate tariffs or other restricted meter tariffs. This is an area which will continue to be monitored under our future retail market work.

6.57 Furthermore, there are some suppliers who enter the retail energy market as part of a wider energy strategy. For such suppliers, the potential impact of the

[143] Ofgem: State of the energy market 2018.

default tariff cap on profitability may not be a concern for a limited period of time. Therefore, it is possible that we continue to see such firms enter the market, to the extent that their wider strategy is not affected by limited or negative profit in the retail energy market.

6.58 However, the impact may be greater if the potential entrants anticipate that the cap will be in place for five years until the end of 2023 or if potential entrants have the perception that price regulation will be more common in the future (beyond 2023). This reflects stakeholder views, raised through consultation responses and workshops, that the main factor that may discourage market entry is uncertainty, though the default tariff cap is only one driver of uncertainty in the market.

6.59 The impact on market entry will depend on the cap level, through its influence on switching. If customers remain engaged, reflecting a scenario where prices fall to the cap but fixed tariffs do not increase substantially, which is more likely at a higher cap level (option 3), there may remain an incentive for potential entrants who can differentiate themselves and operate efficiently to enter the market. Where there is a more substantial impact on consumer switching, reflecting a scenario whereby prices converge to the cap, which is more likely at a lower cap level (option 1), we would consider there to be lower incentives to enter as new entrants are unable to attract customers.

Impact on market exit

6.60 Within the cap level, we have built in the allowance for an efficient level of cost. The default tariff cap should therefore allow suppliers which operate efficiently, and which face composition of costs in line with those used to set the default tariff cap, to achieve normal profit.

6.61 However, there are some suppliers that are operating inefficiently, or that are operating efficiently but which face higher efficient costs compared to those used to set the cap.[144] For these suppliers the implementation of the default tariff cap may result in these suppliers not being able to make normal profit. Furthermore, some suppliers may struggle to reduce their costs to an efficient level.

6.62 Our analysis of the impact of a default tariff cap set at our chosen level (option 2) on supplier prices, costs, revenues and profitability (Chapter 4) suggests that there are suppliers that may experience sustained losses if they were not to react to the introduction of the default tariff cap, ie by increasing the prices of fixed tariffs or reducing costs.

[144] For instance, the cost of servicing varies across customers. On average, consumers that pay by standard credit are more costly to service than those that pay by direct debit. Similarly, consumers who manage their account purely online are cheaper to service than those that request paper billing and/or are more likely to require telephone support.

6.63 Among the six largest suppliers, at all our cap level options, the number of suppliers operating at subnormal profits increases in comparison to our baseline if suppliers do not react to the cap.

6.64 However, the scale of losses should also be considered when assessing the risk of market exit. Across all our cap level options, the EBIT margins of the largest suppliers' would be expected to decrease if they do not respond to the cap. At a lower cap level (option 1) the scale of losses would be greater, suggesting a greater likelihood of market exit compared to a higher cap level. At a higher cap level profit levels are expected to be more sustainable in the short term, for example until the cap is lifted or greater efficiencies can be achieved.

6.65 We have also considered the potential impact of the cap on market exit, under scenario 2 where prices converge. In this scenario, we would expect to see a similar number of firms making subnormal profits, with four of the six largest suppliers operating at subnormal profit levels at our chosen cap level. However, the scale of losses is less, meaning that there is a lower, though still material, risk of exit.

6.66 However, it should be noted that our analysis has only assessed the potential impact of the default tariff cap on suppliers' GB domestic retail supply businesses. Many of the energy suppliers are vertically-integrated and/or part of a larger corporate business. For such businesses, the risk of exit may be limited as they could, at least in the short-term, cross-subsidise between business entities. Furthermore, the likelihood of market exit will in part be driven by suppliers' expectations of how long the cap will be in place for.[145] If suppliers expect the cap to be in place for two years only, then market exit is less likely. However, if they expect that the cap will be in place until 2023, or that some form of market wide price protection will be in place over the longer term, then market exit will be more likely.

6.67 In the event that market exit does occur, there may be four channels through which market exit occurs. These are:

- a supplier sells the domestic energy supply business to another company outside of the domestic energy supply market
- a supplier merges with or is acquired by another energy supplier

[145] We reviewed market analyst reports as a source for evidence as to market sentiment regarding the length and duration of the cap but found little discussion on these points beyond the factual information provided by Ofgem.

- Supplier of Last Resort (SoLR) – a process whereby the customer base of firms exiting the market would be allocated to other suppliers operating in the market

- special administration – a similar process to SoLR but only relevant for larger suppliers.

6.68 In the first instance of market exit, whereby a supplier sells its domestic energy supply business we consider would have a limited impact on the market and consumers. The selling of an energy supply business to another company not currently operating within the domestic energy market should not have a significant impact on market dynamics and thus competition between firms. Furthermore, it is likely to have a limited impact on customers as they would not transition between firms and should largely have their contracts upheld.

6.69 In contrast, the other methods of exit are more disruptive. In all cases, the customers of the firm exiting would be reallocated to another supplier. This would result in a transition and change of supplier for relevant customers, which could result in confusion or concerns for those customers affected. There may also be costs to the market for this allocation eg in communicating the change of supplier. At a market level, this would impact the dynamics of the market and would increase the market share of the suppliers involved.

6.70 However, market exit is a usual feature of competitive markets and there are mechanisms in place to manage exit, in particular to manage the smooth transition of customers to a new supplier in order to minimise disruption should it occur.

6.71 In the event that all or some of the firms we have identified as at risk exited the market, this could lead to an increase in market concentration. The extent to which this occurs would depend on which supplier(s) customers are reallocated to. In the event that any increase in market concentration reduces competition in the market, this could result in negative outcomes for consumers either through reduced choice and/or increased prices.

6.72 All other things being equal, any exit from the market would reduce the number of suppliers operating within the market, and increase concentration of the market.

6.73 Due to high levels of uncertainty we have not modelled the potential impact of reallocating customers.

Impact on innovation

6.74 Innovation in the energy sector relates to both improved product and service quality and enhanced process effectiveness.[146]

6.75 Evidence from international case studies[147] suggests conflicting potential impacts on innovation. In Australia, the regions without price controls in place experience greater levels of innovation when compared against those regions with price controls. Conversely, evidence from Illinois highlights the importance of non-price factors in customer decisions to switch which suggests there remains an incentive for suppliers to continue to invest in innovation to improve customer experience.

6.76 Furthermore, the Cornwall Insight report on technological change and innovation under the default tariff cap[148] found that innovation under the PPM safeguard tariff has increased as suppliers are looking to compete on other factors besides price. For example, many small suppliers have increased the availability of online account management for PPM customers and have increased the rate of smart meter rollout for these customers. However, we note that the PPM safeguard tariff covers a far smaller proportion of customers in the market and therefore the impact on suppliers' revenues is much smaller.

6.77 We have considered the impact of the default tariff cap on innovation from two perspectives: existing suppliers and potential new entrants.

6.78 Similar to customer service impacts, due to reduced revenue and profit levels, the default tariff cap could result in existing energy suppliers reducing investment in innovation.

6.79 Innovation requires investment which can only be recouped in the longer term. Responses to our May consultation suggested that the extent to which innovation investment is impacted by the default tariff cap depends on how long suppliers anticipate the cap to be in place. If suppliers expect that the cap will be in place until the end of 2023, then there would likely be a greater impact on innovation as suppliers' expectation of revenues and profit would be lower in the longer term.

6.80 Innovation may also be brought forward by new entrants looking to disrupt the market, for example through new business models or new tariff types and structures. In paragraphs 6.56 to 6.57, we have considered the potential impact

[146] BIS (2014) Innovation Plan.
[147] See Appendix 11.2 for greater detail of the international case studies we have considered.
[148] Cornwall Insight (2018) Which? Technological change and innovation in the GB energy market – how might it be impacted by the default tariff price cap?

on market entry for these types of firms and conclude that we do not consider this would be significantly impacted by the default tariff cap.

6.81 Furthermore, we note that many of the innovative technologies that are in development and could cause significant changes in the energy market in the future are dependent on smart meters to be effective. For example, time of use tariffs and Next Generation Intermediaries (NGIs).[149] Those innovations which do not rely on smart meters may still benefit from a wide rollout of smart meters. It is generally thought that smart meters are the first step in improving customer engagement in the energy market and facilitating behaviour change.[150]

6.82 If the default tariff cap results in a slower rollout of smart meters, then there would likely be a knock-on effect on the introduction and take-up of the technologies enabled through smart meters. As a result, the benefits of these technologies would be experienced later in comparison to the baseline scenario of there not being a default tariff cap in place. We have provided for conservative smart metering costs within the design of the default tariff cap. Therefore, we do not consider there will be an impact on smart meter rollout as a result of the default tariff cap. However, we recognise the high level of uncertainty associated with smart metering costs and have therefore committed to review these in 2019. We have set out our consideration of smart meter rollout in greater detail in Appendix 7 – Smart metering costs.

6.83 Smart meters provide a number of benefits for consumers, including the provision of real-time information on cost and usage, encouraging consumers to reduce demand and save on their energy bills. Further, smart meters will allow for faster switching and result in more engaged and active energy consumers.[151] If there was a slower rollout of smart meters due to the default tariff cap, consumers would not experience the benefits of smart meters as quickly.

6.84 As with competition on non-price factors, it is expected that the impact on innovation will depend on the level at which the default tariff cap is set. For a lower cap level (option 1) our analysis suggests that suppliers would experience a greater reduction in profit levels. As a result, we anticipate that suppliers are more likely to seek to cut costs where possible, including investment in innovation.

6.85 For a higher cap (option 3), our analysis suggests that there would be less of an impact on supplier profit levels. While it may be the case that some suppliers who are operating at negative or below normal profit levels may seek to reduce

[149] NGIs are switching services which can automatically switch suppliers on the behalf of customers, as well as app based switching services.
[150] Cornwall Insight (2018) Which? Technological change and innovation in the GB energy market – how might it be impacted by the default tariff price cap?
[151] Department for Business, Energy & Industrial Strategy: Smart meter roll-out cost-benefit analysis.

controllable costs, we would expect that at a higher cap level, investment in innovation is less impacted.

6.86 Overall, we consider the cap could encourage suppliers to innovate more rapidly to remain competitive, and encourage the entry of firms with innovative new business models. But it could also reduce incentives to enter the market because of reduced opportunities to earn super-normal profits.

6.87 We do not consider the cap will have a significant impact on innovation. We anticipate that innovation will be facilitated through a number of ongoing programmes, such as the rollout of smart meters, half-hourly settlement, faster and more reliable switching, and our future supply market arrangements. Further, the default tariff cap is a temporary measure and is not expected to have a significant impact on long term investments such as in innovation.

Impact on the supply of renewable tariffs

6.88 It is possible that a default tariff cap impacts the supply of renewable default tariffs. Where suppliers face higher costs in the supply of renewable tariffs, the implementation of the default tariff cap could restrict the supply of these tariffs. This would be the case if suppliers are not able to recoup these higher costs within the cap limit due to the efficient costs for renewable tariff providers being higher than the efficient costs used to set the level of the cap.

6.89 We recognise that by potentially restricting the provision of renewable tariffs, this would result in a negative environmental benefit and for customers, who may seek out renewable tariffs.

6.90 The Act allows us to exempt default tariffs, where chosen by domestic customers that appear to support the renewable production of gas or generation of electricity and we have therefore proposed a derogation for renewable tariffs. We explain this in more detail in Appendix 10 – Exemptions.

6.91 As a result, we consider that there will be a limited impact on the supply of renewable tariffs under the default tariff cap.

6.92 We have, however, identified a potential unintended consequence of the default tariff cap in relation to renewable tariffs. We cover unintended consequences in Chapter 8 of this document.

7. Wider impacts

This chapter presents our analysis of the wider impacts of the default tariff cap on other stakeholders and on the environment.

7.1 In this section we have set out our assessment of the impacts the default tariff cap could have on other stakeholder groups and the environment.

7.2 The wider impacts we have considered are split into the following categories:

- impact on the wholesale energy market
- impact on third party switching services
- impact on public sector bodies
- impact on the environment
- impact on security of supply
- impact on employees.

7.3 It should be noted that these impacts are not standalone, and should be considered in the wider context of the supplier and consumer impacts we have identified in Chapters 4 and 5 above. Within our assessment we have considered the dynamics between stakeholder groups and wider impacts, and how the impact on one group may flow through to another.

Impact on the wholesale energy market

7.4 Wholesale costs make up the most significant proportion of a customer's bill, accounting for approximately 37% of a dual fuel bill.[152] As a result, wholesale costs account for the most significant proportion of our estimation of the efficient benchmark and overall cap level. Therefore, any change in the price of wholesale energy, the cost of purchasing wholesale energy, or the market dynamics within the wholesale market could have a significant impact on the retail energy market.

7.5 We have considered how the default tariff cap could impact the wholesale market through the following channels:

- impact on supplier hedging strategies and wholesale market liquidity

[152] Ofgem: Understand your gas and electricity bills.

- impact on the cost of purchasing wholesale energy
- impact on price volatility.

7.6 We consider each impact separately in the following paragraphs. Unlike other impacts, we have not considered the potential impact of different cap levels on the wholesale energy market. The potential impact is dependent on how the cap is designed and how wholesale costs have been accounted for within the cap rather than the level the cap is set at.

Impact on supplier hedging strategies and wholesale market liquidity

7.7 The design of the default tariff cap will likely change the way in which suppliers hedge energy prices. At present, the majority of energy suppliers hedge energy prices by purchasing energy in advance. Suppliers will forecast the amount of energy they require in advance and purchase it accordingly.

7.8 Historically, the larger suppliers have tended to hedge SVT customers for more than 12 or 24 months in advance, whilst smaller suppliers have typically adopted shorter hedging strategies.[153] Further, there will be some suppliers active in the market who will not hedge their wholesale energy but rather buy the energy they require from the market on a daily basis.

7.9 Within the design of the price cap, we have adopted a 6-2-12 semi-annual hedge, ie we will update the wholesale index every six months based on assessment of forward contract costs over a given 12 months with two months between when the forward contracts are observed and the cap is implemented. This is in line with the approach taken by the CMA for the PPM safeguard tariff.

7.10 As a result, we expect that suppliers will, in general, adopt the hedging profile of the cap. This will reduce the risk of exposure of suppliers to costs outside of the default tariff cap. For the larger suppliers, this may involve moving towards a shorter hedging period.

7.11 If the majority of suppliers hedge in accordance with the cap, this may result in later-dated products becoming less popular amongst suppliers and therefore not traded as they are at present. This could have a knock-on impact in terms of reducing wholesale market liquidity. However, we do not consider this likely to occur. We expect that suppliers may only alter their hedging strategy for their default customers. We do not expect there to be an impact on how suppliers purchase energy for their fixed tariff customers and therefore expect that this will maintain demand for longer hedging products and limit the impact on market liquidity.

7.12 The cap may have a more material impact on suppliers who currently take a different approach to hedging, eg by having shorter hedge periods or renewable

[153] This is based on discussions with suppliers and responses to our May consultation.

energy suppliers. In the instance that these suppliers seek to mimic the default tariff cap but adopt a longer hedging strategy they may face higher wholesale costs (eg higher transaction costs). At present small suppliers tend to adopt shorter hedging strategies so this may disproportionately impact them.

7.13 Further, some small suppliers may have challenges following our 6-2-12 approach. Accessing the assessed products may be more challenging given the relatively low number of customers they may have on default tariffs (and low consumption volumes), compared to the standard size these products are traded in. In general, we consider the likelihood of this to be relatively low, and would only impact a small proportion of the market if it did materialise.

7.14 In response to our May consultation, some suppliers raised concerns that the method for setting wholesale costs under the cap would mean that suppliers will be purchasing energy in one tariff cap period for the next cap period without the knowledge of what level the future period price cap will be (ie basis risk). This was addressed in Appendix 4 of our statutory consultation. The responses suggested that this could result in suppliers under- or over- recovering costs depending on the cap level. We have included additional contingency to allow for risk and uncertainty related to wholesale markets. Furthermore, we note that at present suppliers are purchasing energy in advance, without full knowledge of the future price. We therefore consider this is not unlike the current baseline scenario.

Impact on the cost of purchasing wholesale energy

7.15 There are additional costs associated with the purchase of energy beyond the cost of the energy purchased itself. These include the cost of shaping, imbalance and transaction costs.

7.16 Based on analysis we have undertaken; we understand these costs to be material. As a result, these costs have been factored into the wholesale allowance in the default tariff cap.

7.17 Therefore, we do not anticipate that there will be any additional impact on suppliers as a result of these costs under the default tariff cap. Nor do we anticipate that the default tariff cap will increase these costs.

7.18 We note that in the instance that there is a price shock eg as a result of an extreme weather event, there may be a sudden increase in wholesale energy prices and costs. Under the price cap, suppliers will be unable to increase retail prices to account for the sudden increase in wholesale prices. This may result in suppliers unable to recoup wholesale costs within the default tariff prices. However, we note that historically suppliers do not typically increase prices as an immediate response to a wholesale price shock.

7.19 However, we have mitigated against this risk in the design of the cap. As explained in paragraph 7.14 above, there is a specific contingency allowance for

wholesale costs, which will help to mitigate against suppliers being unable to fully recoup wholesale costs under the default tariff cap.

7.20 In addition, we have opted to update wholesale costs on a six-monthly basis. This is a relatively short update period and will result in more frequent price updates than is typical at present. As a result of these two factors, we believe the risk of price shocks impacting suppliers has been mitigated under the design of the cap.

7.21 Furthermore, we have also included a provision within the licence conditions to allow us to, subject to consultation, make more urgent changes to the models used to update the wholesale component of the cap (along with policy, networks and smart metering components). In line with our general preference for updates to be as mechanistic as possible so as to avoid unnecessary uncertainty – we would only use these powers to make changes to the models where either:

a) there were significant and unanticipated changes in factors determining suppliers' costs in these areas, which were expected to cause the allowance included for these costs within the cap to materially depart from the efficient level, looking across the market as a whole

b) there were minor changes that could be made to the models to improve transparency and avoid error (eg formulae error).

7.22 We note that there may be some impact on suppliers' hedging strategies as the market transitions into the price cap. It is likely that suppliers that have adopted longer hedges will have already purchased some of their energy for delivery in the first cap period, whereas other suppliers will purchase energy nearer the point of delivery. Over the past year, wholesale energy costs have been increasing substantially. If suppliers have hedged differently to our approach for assessing wholesale costs for the first cap period, there may be a difference between allowed costs and those that they have incurred. This will likely be to the benefit of suppliers who had taken long hedges if they had purchased the energy when prices were lower. However, suppliers who buy energy closer to the time of delivery may face higher costs.

Impact on price volatility

7.23 There is the potential for wholesale prices to change considerably between default tariff cap periods. As we state in paragraph 7.4 above, wholesale costs are the single largest cost area of an overall customer bill. Large movements in wholesale costs from one cap period to another could result in greater price volatility in consumers' final bills between cap periods. However, our proposed approach for assessing wholesale costs does provide some smoothing and protection for customers from seasonal prices.

7.24 As a result, we do not consider that there will be a material negative impact from price volatility.

Impact on third party switching services

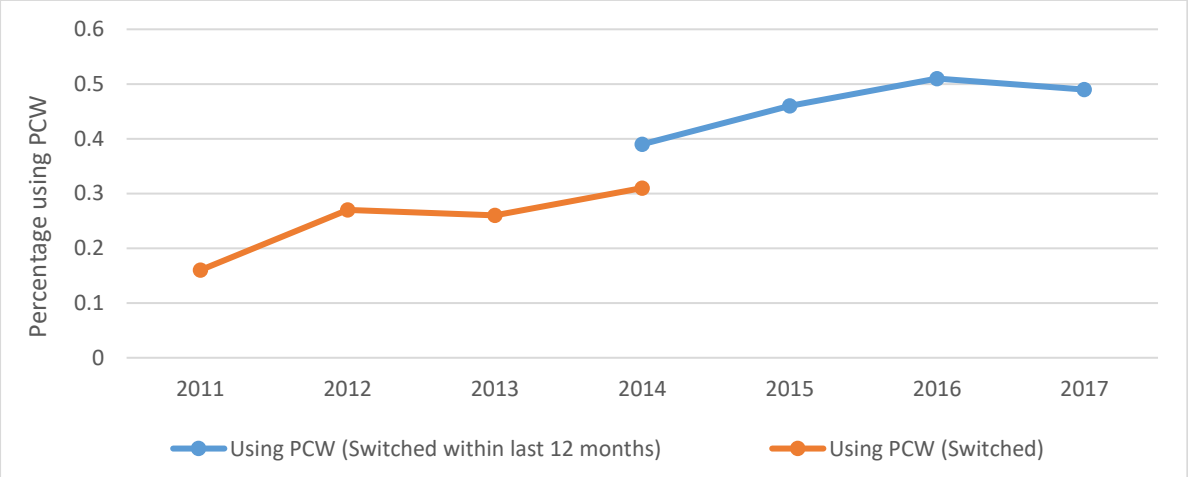
Third party switching organisations

7.25 Third party switching organisations are intermediaries that provide an interface for consumers to compare, buy and sell energy supply tariffs. PCWs bridge the gap between buyers (consumers) and sellers (suppliers) of energy, allowing consumers to compare personalised quotes from multiple suppliers at the same time, and ultimately switch their tariff.

7.26 PCWs are increasingly important in providing domestic customers with a means of engaging with the energy sector. The use of PCWs as a facilitator of switching has increased dramatically over recent years. We have tracked the use of these tools as part of our ongoing customer engagement surveys. The proportion of customers using these tools to complete a switching process and switch energy supplier has risen from approximately 27% of all domestic switches in 2010, to approximately 50% in 2017.[154]

7.27 In addition, customers also use PCWs as a means of comparing information prior to independently engaging in a switch themselves. The CMA energy market survey[155] highlighted that 62% of respondents who switched energy supplier in the last three years used a PCW to find out information to help facilitate their switch. This is a significant proportion of the approximately 9m total switches which took place in 2017.

Figure A11.6: Prevalence of use of price comparison tools[156]



Source: Ofgem analysis

[154] Ofgem: Based on consumer survey analysis from 2014 and 2017 Consumer engagement in the energy market report. Data from 2010 to 2014 based on all those who have ever switched, data from 2014 to 2017 based on all those switched within last 12 months.
[155] CMA: Energy Market Investigation, Price Comparison Websites.
[156] Ofgem: Based on consumer survey analysis.

7.28 PCWs and similar intermediaries earn revenue through commission, paid by energy suppliers, for each switch generated on the back of an initial comparison through their platform. This commission varies by firm and platform, but is most commonly a one off fee in the region of £15 to £35 in 2015 prices.[157]

Impact of the default tariff cap

7.29 The implementation of the default tariff cap could reduce the savings available to customers from switching tariff and/or suppliers given that customers will already be benefitting, on average, from lower default tariffs. As a result of this, as explained in Chapter 5 above, the levels of customer switching are expected to decline after the implementation of the default tariff cap.

7.30 As outlined in Chapter 5, we have provided an indicative range of the potential impact on switching resulting from our proposals, based on a meta-analysis we have conducted covering a number of analytical studies of drivers of switching.

7.31 We estimate that the introduction of the default tariff cap at our chosen cap level (option 2) could lead to a potential decrease in switching of 30%-50%. As outlined in Chapter 5, we estimate that approximately 3.6 million to 6.1 million fewer electricity and gas accounts may switch in the first year of the default tariff cap being in place.

7.32 Assuming that approximately 50%[158] of all switches are facilitated by the use of a PCW, this could lead to a reduction of approximately 1.8 million to 3.05 million PCW account referrals on an annual basis.

7.33 We also note however, that we expect a lower proportional impact on those customers switching towards smaller suppliers, as we would still expect many of these suppliers to offer competitively priced tariffs after the implementation of the default tariff cap. We might expect that those customers who typically switch to smaller suppliers would be more likely to use a PCW, and subsequently, this could reduce the potential impacts on third party organisations.

7.34 This would equate to approximately £25.3m to £42.2m of lost commission for PCWs, using a central estimate of £25 per switch for a dual fuel customer, and £15 for a single fuel customer. Table A11.18 below shows the impacts across different tariff types. As many of these third party switching organisations are diversified across a range of sectors outside of energy, this will reduce the effects of these revenue impacts, as they will have revenue streams from outside of energy supply.

[157] CMA: Energy Market Investigation, Price Comparison Websites.
[158] Based on the proportion of all switchers using a PCW to facilitate a switch, as taken from Ofgem consumer survey analysis.

Table A11.18: Monetised impact on third party switching (option two)

Fuel Type	Estimated decrease in use of third party switchers	Monetised impact
Dual Fuel Customers	670,000 to 1,110,000	-£17.7m to -£29.5m
Electricity	280,000 to 460,000	-£4.4m to -£7.3m
Gas	200,000 to 340,000	-£3.2m to -£5.4m

Source: Ofgem analysis

7.35 As we note in paragraph 7.28, third party switching organisations and other intermediaries earn commission from suppliers for switching customers – meaning that a loss of revenues for third party switching services represents a reduction in costs for suppliers (and therefore a gain). As a result, this loss in revenue should be interpreted as a transfer between suppliers and third party switching services. In the assessment of the overall net impact of the default tariff cap, this impact would net off to equal zero. However, our analysis of the impact on suppliers does not capture the impact on supplier costs. We have therefore not included the loss to third party switching services within our overall assessment of the net benefit of the default tariff cap, nor in the net wider impact.

Impact at different cap levels on third party switching organisations

7.36 The impact of the default tariff cap on third party switching organisations will also depend on the initial level of the cap. At our lower cap level (option 1), we might expect the potential reductions in switching to be more significant, while at our higher level (option 3), we expect it to be less. Table A11.19 below shows how these different potential impacts on switching would impact the revenues of third party switching organisations at different levels of the cap.

Table A11.19: Monetised annual impact on third party switching

	Option 1	Option 2 (chosen)	Option 3
Monetised impact	£38m to £47m	£25m to £42m	£17m to £38m

Source: Ofgem analysis

Impact on public sector bodies

7.37 We have considered the impact of the default tariff cap on public sector bodies through two main channels: the impact on government VAT receipts from

domestic energy customers; and the cost to public sector bodies of implementing and administering the default tariff cap.

7.38 We note that there may be a further impact on government arising from a reduction in corporation tax receipts as a result of the default tariff cap reducing the profitability of energy suppliers. However, due to the high degree of uncertainty on the overall impact on supplier profit levels we have not quantified this impact.

Impact on government VAT receipts

7.39 Domestic energy consumer bills are subject to a VAT rate of 5%.[159] Our estimated supplier revenue impacts presented in Chapter 4 are reported exclusive of VAT whereas the consumer bill impacts reported in Chapter 5 are inclusive of VAT.

7.40 As stated in Chapter 4, the default tariff cap is estimated to lead to an average dual fuel bill reduction of £105 for default tariff customers in 2017 terms. The reduction in the unit price of energy will lead to a reduction in the VAT which customers pay on their energy bills.

7.41 Based on the direct savings by 10.4 million default tariff customers, we estimate that for our chosen cap level (option 2) VAT receipts associated with these customers' bills would be reduced by £59m per annum.

7.42 For a lower cap level (option 1), we estimate that the direct impact on VAT receipts would be approximately £79m per annum. Meanwhile, at a higher cap level (option 3) we estimate there would be a lower direct impact on VAT receipts, with VAT receipts reducing by £42m per annum.

7.43 However, we would also expect the indirect impacts set out below to result in changes in the VAT paid by domestic energy customers:

- Changes in the prices of uncapped tariffs: As noted above in Chapter 4, we expect that in response to the introduction of the default tariff cap, some energy suppliers will increase the prices of fixed tariffs. A proportion of this increased price per unit of energy will result in an increase in the VAT which customers pay on fixed tariffs.

- We have analysed the impact on VAT receipts from changes in the prices of uncapped tariffs based on our two supplier pricing scenarios: where prices fall to the cap; and where prices converge to the cap level. These two scenarios are set out in more detail in Chapter 4.

- Changes in the energy consumption of some customers: We have analysed in Chapter 5 above the potential impact the default tariff cap could have on the consumption levels of domestic customers. We expect that as a result of

[159] Gov.uk: Guidance: VAT rates on different goods and services.

the average reduction in the unit prices of default tariffs, customers on these tariffs will increase their consumption levels by 1.34%.

- We would also expect that due to an increase in the prices of some uncapped tariffs, that uncapped tariff customers may reduce their energy consumption in response to the increase in prices.

7.44 We are implicitly assuming in this analysis that all energy bill savings are saved by consumers or spent on more energy. However, if consumers spend the savings on other goods, VAT receipts would be likely to increase overall due to the lower rate of VAT of 5% levied on energy.

7.45 We have quantified the potential indirect impact on VAT receipts through the changes in the energy consumption and scenarios of fixed tariff prices in our analysis.

7.46 Table A11.20 below sets out the direct and indirect impact on VAT receipts for each of our cap level options and for our two supplier response scenarios.

Table A11.20: Summary of the direct and indirect annual impacts on VAT receipts for each cap level and scenario, in 2018 prices

		Option 1	Option 2 (chosen cap level)	Option 3
Direct impact on VAT receipts		-£79m	-£59m	-£42m
Indirect impact on VAT receipts (net impact)	**Scenario 1: Prices fall to the cap**	-£82m	-£60m	-£43m
	Scenario 2: Prices converge to the cap	-£59m	-£16m	£19m

Source: Ofgem analysis

7.47 In our estimation of the indirect impact on VAT receipts we have assumed that the entire amount of bill savings some consumers experience is spent on energy through increased consumption. However, we note that there is uncertainty in relation to how consumers will spend the money they save as a result of the default tariff cap. It is possible that consumers spend this money elsewhere, and do not consume more energy or spend the entire amount of savings on it. As a result, we may have over- or under-estimated the net impact of the default tariff cap on VAT receipts.

Direct administration costs to public sector bodies

7.48 As outlined within our May consultation, there will be direct costs to public sector bodies stemming from the implementation of the default tariff cap. The majority of these costs will be borne by Ofgem, in the development, implementation and compliance monitoring of the default tariff cap.

7.49 We have included below our estimates of these direct costs to Ofgem. The costs have been split in to two areas:

- Firstly, the total costs involved in the design and implementation of the default tariff cap. These costs include all direct staff and consultancy costs incurred during the design and implementation phase, up to and including December 2018. We estimate these costs at approximately £3m.
- Secondly, on a recurring basis, we expect ongoing costs related to monitoring, maintenance and any follow up work required after cap implementation. We estimate these costs at approximately £1m annually on a recurring basis.

Table A11.21: Annual costs of administration to Ofgem[160]

Year	2018/19	2019/20	2020/21	2021/22	2022/23
Cost	£4m	£1m	£1m	£1m	£1m

Source: Ofgem analysis

7.50 In addition to the direct costs to Ofgem of implementing and monitoring the cap, there could potentially be some administration costs for government departments whose operations interact with the default tariff cap, for example for BEIS through its work with energy suppliers and smart metering.

7.51 We have not estimated these costs as they are not expected to be substantial, and any costs are expected to be ad hoc in nature and therefore would be difficult to accurately predict ex ante.

Environmental impacts

7.52 Within this impact assessment we estimate the impact of the default tariff cap on greenhouse gas emissions through potential changes in energy consumption. We have also qualitatively assessed the impact on renewable energy generation. Our analysis of the environmental impact is limited to these impacts, which are considered to be the primary drivers of the environmental impacts of the cap.

7.53 We have not completed a full environmental impact assessment of the implementation of the cap as the policy does not have an environmental objective and therefore conducting a full environmental impact assessment is considered to be disproportionate.

7.54 As outlined above in Chapter 5, the default tariff cap is expected to lead to a reduction in bills for a number of customers, and potentially could lead to changes in total domestic energy consumption and, therefore, the levels of emissions.

[160] Ofgem: Based on consumer survey analysis.

Impact on emissions

7.55 We have estimated the impact on total greenhouse gas emissions. In total, we estimate that approximately[161] -0.01 to 0.43 million tonnes of CO2 equivalent (MtCO2eM) would be expelled as a result of a change in consumption, based on our chosen cap level of option 2. This is the equivalent of between -0.01% to 0.40% of total UK domestic emissions.[162]

7.56 These emissions are valued at approximately £0.28m to £16.6m, based on the traded and non-traded prices of carbon.[163] In line with the consumption estimates in Chapter 5, we also expect the potential impact on the levels of emissions will vary alongside different levels of the cap.

7.57 In Table A11.22 below we present the expected impacts on emissions based on both our indicative lower and upper bound levels of the cap. Positive values denote an increase in emissions and valuations.

Table A11.22: Estimated scale and value of increase in emissions

	Option 1		Option 2 (chosen option)		Option 3	
	Scenario 1: Prices fall to the cap	Scenario 2: Prices converge to the cap	Scenario 1: Prices fall to the cap	Scenario 2: Prices converge to the cap	Scenario 1: Prices fall to the cap	Scenario 2: Prices converge to the cap
MtCO2e	0.61	0.38	0.43	-0.01	0.30	-0.32
Emission Value (£)	£22m	£14m	£17m	£0.28m	£12m	-£13m

Source: Ofgem analysis

Impact on security of supply

7.58 As we have assessed in Chapter 5, we consider that the falling prices of default tariffs following the introduction of the cap will result in an increase in energy consumption for capped customers. Therefore, there will be an increase in the demand for energy as a result of the default tariff cap.

[161] BEIS: Valuation of Energy Use and Greenhouse Gas.
[162] Total UK emissions of (MtCO2e) equal to 106.7 across 2016.
BEIS: Emission estimates 2016, Table 3.
[163] BEIS: IAG spreadsheet toolkit for valuing changes in greenhouse gas emissions.

7.59 In response to our statutory consultation, a concern was raised by a respondent that there could be a subsequent impact of this on security of supply in the GB energy market.

7.60 GB's gas and electricity markets have delivered security of supply to date, and are expected to continue to do so.

7.61 A key factor in the security of supply of electricity is the Capacity Market (CM). The CM is designed to ensure the delivery of electricity supply or reduction in demand in periods of system stress. Capacity providers must commit to delivering electricity in times of system stress and face penalties if they fail to do so. National Grid (the System Operator) forecasts peak demand and uses modelling to estimate the amount of capacity to procure to meet the Government's reliability standard under a range of scenarios. The Government then decides on the amount of capacity to be procured through the CM auction process.[164]

7.62 2017/18 was the first year with the full operation of the CM. Over the year, there were no CM warnings or periods in which demand was not met, indicating that the CM was successful in its first year of full operation. We expect the CM to continue to work effectively, helping to mitigate against any risks to electricity security of supply.[165]

7.63 Furthermore, the CM is a long-term mechanism that involves securing supply years in advance of delivery. Capacity payments are determined through two competitive auctions: T-4 and T-1 auctions. The T-4 Auction secures supply four years before the delivery period, whilst the T-1 Auction is used to 'top-up' the target capacity for the delivery year.[166] This means agreements to secure electricity capacity in the initial price cap period (up to 2020) has mainly been secured through the 2017/18 T-4 Auction. Any increase in consumption that has not been secured in the T-4 Auction should be secured in the T-1 Auction (to be held a year ahead of delivery). Capacity for any subsequent years (up to 2023) has also either been mainly secured, or will be before then.[167]

7.64 Similarly, the GB gas market is a healthy, functional market. Over the past year, the market has functioned well with no supply outages caused by security of supply, despite weather shocks that have been experienced.[168] There is a positive gas outlook for the future with National Grid reporting it expects gas supply to be sufficient and secure in all of its supply scenarios.[169]

7.65 We also consider there to be a limited risk of an increase in energy consumption affecting security of supply over the potential period of the cap. In Chapter 5,

[164] Ofgem: State of the energy market 2018.
[165] National Grid: Winter Outlook 2018/19.
[166] Ofgem: Annual Report on the Operation of the Capacity Market in 2017/18.
[167] BEIS, Ofgem (2017) Statutory Security of Supply Report 2017.
[168] Ofgem: State of the energy market 2018.
[169] National Grid: Winter Outlook 2018/19.

we estimated the potential increase in consumption would be relatively small – less than 0.5% of total consumption in all scenarios. Furthermore, there is existing spare capacity in the supply of gas and electricity. The demand for both gas and electricity has also been decreasing over recent years and is expected to continue to fall in the future.[170] Finally, in its role as the System Operator, National Grid takes forecast changes into account when assessing security of supply.

Impact on employees

7.66 One respondent to our statutory consultation raised a concern that the introduction of the default tariff cap will have an indirect impact on the employees of energy suppliers. This impact could take the form of less favourable terms of employment, for example putting downward pressure on pay, other benefits or working conditions, or generating job losses.

7.67 As set out in Chapter 4, the default tariff cap will directly reduce the revenues and profit levels of some energy suppliers. As a result, we expect that some suppliers will look to recoup any losses by cutting controllable costs where possible, potentially including employee costs.

7.68 We consider that the likely knock-on effect of this on employees' terms of employment is limited. Suppliers will be limited by existing employment contract terms. Furthermore, suppliers should be incentivised to offer employees competitive pay, benefits and standards of working conditions. If not maintained, suppliers could struggle to recruit and retain staff, and this would not be sustainable. At the lower bound, there is a legal limit to the terms offered. For example, suppliers will not be able reduce an employee's pay below minimum wage and may be restricted by existing contract terms. Similarly, there are laws in place in the UK to ensure that employees work in a safe environment.[171]

7.69 Efficiencies made by suppliers in response to the cap could also lead to job losses, resulting in higher productivity. However, whilst this could result in a negative impact on employment in the energy sector, we would expect that at the economy level, consumers would spend a proportion of the savings made on energy elsewhere in the economy. As a result of this, jobs may be created in other sectors of the economy, resulting in a smaller net employment impact.

7.70 We also note the possibility of there being job losses in the energy market as a result of market exit. As we set out in Chapter 6, following the implementation of the default tariff cap, some suppliers may be unable to make normal profits even in the event that they increase fixed tariffs prices and/or make efficiency improvements. This could lead to some firms exiting the market, likely resulting in their employees losing their jobs. However, the supply of energy to the customers of any exiting suppliers would be taken over by suppliers remaining

[170] National Grid: Winter Outlook 2018/19.
[171] Health and Safety at Work etc. Act 1974.

in the market. As a result, these suppliers may need to increase their employment levels to reflect their higher customer base. For this reason, the overall net employment impact from supplier exit would likely be constrained.

7.71 Due to the uncertainties relating to both the potential scale of job losses and jobs which could be created elsewhere in the economy, we have not estimated the net employment impact of the cap.

8. Risks and uncertainties

This chapter presents our consideration of the main risks and uncertainties surrounding the impacts of the implementation of the default tariff cap.

8.1 The default tariff cap is likely to lead to complex market dynamics that are difficult to predict. To reflect these dynamics, we have undertaken modelling of potential second order impacts of the default tariff cap on suppliers' pricing behaviour of both capped and uncapped tariffs; as well as analysis of customer behaviour, specifically the impact on switching rates and energy consumption.

8.2 Whilst this analysis is based on the evidence available to us, there is uncertainty regarding how the market will respond in practice.

8.3 We reflect the uncertainty associated with how suppliers adjust their prices in response to the price cap within our main analysis. This uncertainty is reflected in the range of estimated indirect impacts generated from our two supplier pricing response scenarios which reflect what we consider to be the limits of the potential outcomes.

8.4 However, there are additional risks of the default tariff cap and uncertainties as to precisely how the cap will impact different stakeholders.

Impact on switching rates

8.5 There is uncertainty regarding the impact of the cap on switching rates. The need to maintain incentives for customers to switch is a matter to which we must have regard in designing the cap.

8.6 Our analysis of the impact on switching is based on a number of data sources (see Chapter 5) that provide a range of estimates of the impact on switching based on the size of suppliers under consideration and the price differential between suppliers. Our main analysis is based on central estimates of the impact on switching.

8.7 Within this sensitivity analysis we consider the extent to which our analysis of the impacts of the cap level options would vary based on the higher and lower estimates of the impact on switching from the evidence and data sources we considered.

Table A11.23: Estimated reduction in switching - sensitivity analysis[172]

Cap Level	Option 1		Option 2 (chosen cap level)		Option 3	
Scenario	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**
Low	20%	20%	10%	10%	0%	0%
Medium	45%	45%	30%	40%	20%	30%
High	55%	55%	40%	50%	30%	45%

Source: Ofgem analysis

8.8 If the switching impact was at the higher end of the range suggested by the studies we have considered,[173] then there would be a greater risk, at any given cap level, that prices converge (scenario 2) due to the relationship between customer engagement and price convergence explained in Chapter 5. This would lead to higher average bills for fixed tariff customers and lower overall customer engagement, but would also reduce the risk of market exit by suppliers as they would be more able to increase fixed tariff prices without losing customers as a result of them switching to cheaper tariffs. The relative impacts depending on the supplier price response scenario are presented in Table A11.24.

8.9 Conversely, at the lower end of the range of the potential decrease in switching rates, at any given cap level, there would be a lower likelihood of price convergence and a greater likelihood that suppliers maintain their fixed tariff prices. For our chosen cap level (option 2) a lower estimate of the reduction in switching of 10% reflects a relatively small impact on customer engagement and switching, and that there would be little scope for suppliers to increase fixed tariffs with customers switching away to cheaper tariffs. This would mean fixed tariff customers are better off.

8.10 However, for those suppliers that may rely on increasing fixed tariffs prices in order to achieve a normal rate of return, a higher rate of switching would limit their ability to do so without losing customers. At our chosen cap level, five of the six largest suppliers would not be able to achieve normal profit if they were not able to increase fixed tariff prices, unless they improved their efficiency beyond the efficiency level of the most efficient large supplier.

8.11 Therefore, if it was assumed that suppliers could not increase fixed tariff prices due to the cap having a greater impact on switching rates, a higher cap level might be chosen.

[172] Impacts rounded to the nearest five percent.
[173] See Appendix 2 of our statutory consultation for more details.

Table A11.24: Estimated net impact on suppliers for each cap level option and scenario

Cap levels	Option 1		Option 2 (chosen cap level)		Option 3	
Scenario	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**	**Scenario 1: Prices fall to cap**	**Scenario 2: Prices converge**
Net supplier revenue impact	-£1,619m	-£1,167m	-£1,180m	-£326m	-£842m	£368m
Supplier EBIT	-4%	-2%	-2%	2%	0.1%	4%

Source: Ofgem analysis

Timescale for the cap

8.12 The impact of the cap will depend on the length of time it is place for. In our analysis we report the impact of the cap on an annual basis. In our quantitative analysis we assume these impacts will be maintained at the same level annually regardless of the timescale of the cap. However, the overall NPV of the cap will vary based on the timescale for the cap. The NPV of the cap over different time periods are set out below.

Table A11.25: Monetised impact (in NPV terms) of the default tariff cap on stakeholders (£m)

Cap Level	Option 1		Option 2 (chosen cap level)		Option 3	
Scenario	**January 2019 – December 2020**	**January 2019 – December 2023**	**January 2019 – December 2020**	**January 2019 – December 2023**	**January 2019 – December 2020**	**January 2019 – December 2023**
All customers (Scenario 1)	£3,133	£6,889	£2,297	£5,018	£1,638	£3,580
All customers (Scenario 2)	£2,544	£4,934	£1,178	£1,301	£45	-£1,718
Suppliers (Scenario 1)	-£2,984	-£6,561	-£2,187	-£4,779	-£1,560	-£3,410
Suppliers (Scenario 2)	-£2,423	-£4,699	-£1,122	-£1,239	-£43	£1,636
Wider impacts (Scenario 1)	-£3,135	-£6,897	-£2,305	-£5,039	-£1,653	-£3,611
Wider impacts (Scenario 2)	-£2,555	-£4,967	-£1,203	-£1,373	-£77	£1,652

Source: Ofgem analysis

8.13 We do not consider that a different assumption regarding the length of time the cap will be in place for will materially influence the decision on the chosen option based on the NPV it generates. This is because the relative scale of the impacts across the options would remain the same.

8.14 However, there are some qualitative considerations that we need to take into account.

8.15 Expectations regarding the length of time the cap will be in place for could impact suppliers' decisions relating to market entry and exit, and innovation in the market. If there is an expectation that the cap will be in place for a longer period than the two years assumed in our main analysis, this could decrease the likelihood of market entry, increase the likelihood of market exit and reduce investment in innovation.

8.16 We have considered these elements qualitatively within our analysis and within our decision on the chosen option.

Impact on customer service

8.17 As noted in our analysis, a reduction in suppliers' revenues and profitability, and additional pressures stemming from the default tariff cap to cut costs, could constrain the ability of suppliers to reinvest to fund innovation and improvements in customer experience. These factors could lead to lower levels of customer service and less innovation in customer service and/or tariff offerings.[174] In addition, respondents to our consultation identified that more frequent price changes may also have a negative impact on customers' experience and could increase the likelihood of disengagement by customers.

8.18 In relation to customer service levels, licence conditions and the Standards of Conduct that are part of our regulatory regime, should mitigate that risk. These standards are enforceable broad principle-based rules that apply across a range of supplier-customer activities. They highlight our fundamental expectations regarding how suppliers (and their representatives in the case of domestic suppliers) must ensure that each customer is treated fairly.

8.19 In addition, we expect other mitigations such as the customer complaint handling data collected by the Ombudsman and Citizens Advice, which is well publicised, will be used to ensure that customer service levels are not unduly impacted after the implementation of the default tariff cap.

[174] Ofgem: Decision on WHD Safeguard Tariff. Page 11.

Impact on customer bills

8.20 We are conscious of the potential incentive effects of the default tariff cap on suppliers' tariff offerings. For instance, prior to implementation, suppliers might look to transition customers off capped default tariffs and place them onto active choice fixed price deals that would be higher than their future potential capped tariffs, in order to mitigate the impacts of the cap. However, we note that the Standards of Conduct that are part of our regulatory regime should mitigate that risk.

8.21 As we highlight in Chapter 4, there is also a material risk that customers on tariffs below the cap level may see prices increase. This includes both fixed tariff customers and default tariff customers.

8.22 As we note in Chapter 6, whilst we expect that some suppliers will increase fixed tariffs in response to the cap, some suppliers will continue to offer lower fixed tariffs. Fixed tariff customers are engaged customers, therefore in response to higher prices on some tariffs, they are able to decide whether to switch supplier to a lower priced tariff, or make an informed decision to stay with their current supplier, either on fixed tariff or default tariff due to non-price factors.

8.23 Among default tariff customers, single fuel electricity customers are most likely to be on tariffs priced below the cap level due to the historic tendency for these electricity tariffs to have lower margins applied than gas tariffs. Therefore, the reason that these customers may see bill increases is that they are currently not over-paying for their energy.

Impact on competition

8.24 As we explain in Chapter 6 at our chosen cap level there is a risk that some inefficient suppliers may not be able to achieve normal profits if either competitive constraints prevent them from increasing fixed tariff prices to offset lost revenue from default tariffs or they are unable to sufficiently reduce operating costs. In the instance of sustained losses, there is a risk that these suppliers may exit the market. In the event of exit by suppliers covering a large proportion of the market, this could potentially lead to a substantial increase in market share by a single large supplier and a reduction in market concentration.

8.25 At the other end of the market, there is a risk that the price cap may increase the incentive for small suppliers to stay small. There are a number of thresholds created by obligations for suppliers over a certain size, for example suppliers with over 50,000 customers being required to contribute to policy costs. To the extent that the cap limits the revenues suppliers can achieve from additional customers, it may create an increased incentive for suppliers to remain small. However, given the cap is temporary, we do not expect that it will have a significant impact on suppliers' growth ambitions.

Impact on renewable tariffs

8.26 In accordance with the Act, the derogation for renewable tariffs we have decided on is set at a tariff level rather than a supplier level and that a derogation can only apply to non-default tariffs that customers have actively chosen to be on. As a result, a supplier will still need to offer a default tariff which will be included within the default tariff cap. In the case where suppliers face higher costs in supplying renewable energy, it is possible that this default tariff will not be financially viable as a fully renewable tariff. Therefore, the default tariff cap may force renewable energy suppliers to offer a non-renewable default tariff.

8.27 We note that should any sufficiently negative unintended consequences arise from the implementation of the default tariff cap, Ofgem retains the flexibility to adjust the headroom allowance applied to efficient costs. Such adjustments aim to enable Ofgem to respond to any material problems highlighted by annual assessments of the cap.

9. Conclusion: Cap level decision

This chapter presents our overall conclusions regarding the impacts of the default tariff cap and how has informed our decision on the design of the cap.

9.1 We recognise that the decision regarding the level and design of the default tariff cap involves trade-offs. A low cap would provide greater savings for consumers and create strong incentives for inefficient suppliers to reduce their costs. However, the lower the cap level, the greater the risk of a reduction in switching, and the less able suppliers would be to finance their activities.

9.2 In coming to our decision regarding the cap level, we have considered our analysis of the impacts of each cap level option, and the extent to which these meet the objectives of the Act, whilst giving regard to the matters set out in the Act.

9.3 The chosen design of the cap means that when it comes into force, it will cap prices at around £1,137 for typical single rate dual fuel customers paying by direct debit, and £1,221 for those paying by standard credit. This will generate savings for customers based on their tariff prices when the cap is implemented.

9.4 At our chosen level, the cap will provide a substantial degree of protection to existing default tariff customers – ensuring default tariffs more closely reflect their underlying costs of supplying energy. Based on our analysis,[175] we estimate that 98% of default tariff customers would have paid less under this default tariff cap level if implemented in 2017.

9.5 We recognise that customers who would be on fixed tariffs in the absence of the cap may face higher bills as a result of the cap. However, this reflects the distributional impacts of the cap. Customers on default tariffs are more likely to be vulnerable and on lower incomes. When considering the welfare impacts, we would put a greater weight on the social value of savings to these customers compared to those of higher income groups, who tend to be more engaged customers. The monetised net customer bill impact does not adjust for this distributional weighting and therefore underestimates the benefit to consumers.

9.6 Through its impact on supplier revenues, we expect the cap will create strong incentives to reduce inefficiency, which would benefit consumers in the long run. In its energy market investigation, the CMA concluded that the largest suppliers were inefficient, with higher costs than they would expect if competition was more effective.[176] At the level at which it has been set, the cap is expected to reduce market revenue by approximately 5%. For five of the six largest suppliers this would result in sub-normal profits without some reduction in operating costs. As we note in Chapter 4, for some suppliers, achieving the scale of efficiencies required may be challenging. Nonetheless, we expect

[175] Based on 2017 tariff prices.
[176] CMA (2016) Energy Market Investigation.

suppliers to make efforts to improve efficiencies in order to achieve a sustainable profit margin.

9.7 As we recognise in Chapter 5, the cap may have a negative impact on consumer engagement and switching. However, at the level at which the cap has been set, we expect some small- and medium-sized suppliers to continue offering cheaper contracts for customers to switch to, thereby maintaining competition for the most engaged customers.

9.8 With regard to financeability, the cap has been set above the efficient benchmark, with an allowance for uncertainty in costs. In setting the cap level, regard has been given to the need for efficient suppliers to finance the cost of default tariffs, and the cap has been set at a level at which we expect that suppliers with a range of different customer bases can cover an efficient level of costs. We acknowledge that it is possible that some suppliers with particularly high cost customer bases may not be able to finance their activities, even if operating efficiently. However, setting the cap to reflect efficient costs of suppliers with particularly high cost customer bases would necessarily allow all other SVT customers to be overcharged, resulting in significantly less protection for customers on default tariffs.

9.9 At a lower cap level of option 1, default tariff customers would achieve greater savings. However, this would likely have a greater reduction on switching and would increase the likelihood of price convergence across the market, which would mean little price competition among suppliers. Furthermore, by reducing the allowance above the efficient benchmark, there would be a greater risk that efficient suppliers would not be able to finance their activity.

9.10 At a higher cap level of option 3, there would be less of a negative impact on consumer engagement and switching. However, default tariff customers would receive less protection in the short run and there would be less of an incentive for suppliers to improve efficiency, resulting in less benefit to future default tariff customers in the long run.

9.11 More in depth discussion of our decision in relation to the design of the cap can be found in the decision overview document.

Appendix 11.1: Summary of responses to our statutory consultation

Overview of the consultation responses

We received responses to our statutory consultation from 43 respondents. We identified responses from 12 of these with comments directly relating to the impact assessment.

In this section we have summarised and commented on the key points arising from the consultation responses directly relating to the impact assessment. These have been grouped by theme below. Other points raised through the consultation that may indirectly relate to the impact assessment are considered within the relevant appendix.

Methodology, assumptions and evidence

Assessing supplier impacts

Summary of responses:

One respondent raised a concern that the impact assessment only considered the impact of the default tariff cap on the six largest suppliers at an individual supplier level, and had not considered the impact the default tariff cap could have on other suppliers.

Our position:

The estimated market level impact, and accompanying qualitative analysis, reflects the impact on all suppliers across the market. Although we do not report the impacts at the individual supplier level for all suppliers, the analysis of the impact of the cap is based on financial data from a combination of large, medium and small suppliers. Where we considered relevant, we report findings for the six largest suppliers, as these suppliers make up approximately 75% of the retail energy market[177] and therefore cover the majority of consumers in the market. As a result, we have maintained our approach to our analysis.

Price elasticity of demand

Summary of responses:

One respondent did not agree with the assumed short run price elasticity of demand we have used within our impact assessment. This response proposed that the longer

[177] Ofgem: State of the energy market 2018.

run price elasticities of demand we had identified better reflected the potential consumer response.

Our position:

The short run elasticities applied in our analysis account for the direct consumer response to a price change. They do not include longer term factors such as changes in consumers' investment decisions (possibly from the purchasing of additional electrical consumer goods due to cheaper costs of running them).

We consider that short run elasticities better reflect the potential response from consumers that might be observed over the period the default tariff cap is in place. For instance, we would not expect that consumers would alter their investment decisions based on the temporary default tariff cap, which could be removed in 2020.

We have therefore maintained our approach of using short run elasticities in our analysis. We have added further detail to justify our assumption in Chapter 5.

However, on revisiting our approach, we have updated our assumption of the price elasticity of demand for electricity to use the average of a number of different short run elasticities of demand from a number of studies, rather than the value provided by a meta-analysis from a single academic study.[178] We consider that drawing on more studies to arrive at our average is a more robust approach.

Consideration of the counterfactual

Summary of responses:

One respondent disagreed with including the vulnerable customer safeguard tariff within the counterfactual for the duration of the default tariff cap as it is due to be withdrawn at the end of 2019.

Our position:

We acknowledge that the vulnerable customer safeguard tariff is due to be withdrawn in December 2019. However, Ofgem has committed to extending protection for vulnerable customers beyond this period. On this basis we assume that some form of price protection would be in place for these customers in the absence of the default tariff cap.

We do not know the level at which such any alternative cap for vulnerable customers would be set. Therefore, we have used the default tariff cap level as a proxy for the

[178] Epsey and Epsey (2004) Turning on the Lights: A Meta-Analysis of Residential Electricity Demand Elasticities.

protection that vulnerable customers on the safeguard tariff would receive in the counterfactual.

On this basis, we consider it appropriate to maintain this assumption in our final impact assessment. We note, however, that relative to a counterfactual in which there is no alternative cap in place for vulnerable customers beyond 2020, this approach underestimates the consumer benefit of the default tariff cap by £70m over the period from January 2019 to December 2020.

Use of market analyst reports

Summary of responses:

One respondent stated that within the impact assessment, Ofgem should consider the views set out in market analyst reports regarding the length, duration and impact of the cap.

Our position:

We have reviewed a number of analyst reports[179] by leading investment banks released across the course of the default tariff cap consultation up until the present period. These reports have primarily focussed on the impacts of the default tariff cap on the equity valuations of those publicly traded suppliers.

Generally, we have seen limited discussion considering the potential length and duration of the proposals, outside of a factual consideration of the proposed approach to consider annual extensions of the default tariff cap for periods beyond 2021.

On the impacts of the default tariff cap, analyst opinions have generally assumed that the potential impacts of the default tariff cap have now been fully considered, and are currently priced into the equity valuations of those traded suppliers at the time of this decision document. One of the most recent of these reports commented on the transparency of the methodology allowing clear expectations of potential changes in the level of the cap over time.

We have reflected the findings from our review of market analyst report within our analysis of the impact on equity valuations in Chapter 4.

[179] As of October 2018, sourced through Thompson One research portal.

Consideration of efficient costs

Summary of responses:

One supplier was concerned that the draft impact assessment did not assess efficient costs or assess the impact of the efficient cost allowance being wrong.

Our position:

Efficient costs have been estimated based on the best available data and with consideration to responses from suppliers throughout the consultation process. Furthermore, Appendix 2 – Cap level analysis and headroom explains the allowances that have been made within the cap level for variation in efficient costs and uncertainty.

In addition, specifically in relation to the non-pass-through element of smart metering costs, which have a greater degree of uncertainty associated with them, we have taken a different approach to that applied for other operating costs. First, we have used an average efficiency approach rather than using lower quartile costs, and second, we have set the cost allowance in advance only for the first two periods of the cap (running up to end September 2019). We have committed to review the level of non-pass-through costs in 2019 such that the SMNCC is set appropriately for later periods.

For these reasons, in the impact assessment we consider the efficient costs for the average supplier are accurately estimated. However, we acknowledge in our impact assessment that there is variation in efficient costs across suppliers, and those with higher efficient costs may be more negatively impacted by the cap than those with lower costs.

Implementation

Administration costs

Summary of responses:

A number of suppliers commented on our proposal to have a different unit rate and standing charge for the standard credit level of the default tariff cap. Most suppliers highlighted that this was a step away from the current industry practice of applying the entire difference on the standing charge and labelling it a direct debit discount. Two large suppliers raised concerns that a movement towards a variable element to the payment method differential would require system changes and come with an operational cost.

Some suppliers mentioned there may be operational and implementation difficulties associated with implementing a different tariff for SMETS2 PPM customers. Two large suppliers reported that at present, supplier systems are unable to distinguish between

SMETS1 and SMETS2 meters and would therefore be unable to easily administer the correct cap to customers as it would require changes to the IT and billing systems.

In addition, two large suppliers thought that the proposals to align the cap level of the vulnerable customer safeguard tariff (received by WHD customers) to the cap level of default tariff customers who pay by direct debit (irrespective of their payment type) would have operational consequences.

Our position:

Whilst a number of suppliers identified that there may be operational consequences of implementation of the default tariff cap, we received little detail as to what changes would be required and did not receive any additional evidence relating to the cost of the required changes to IT and billing systems that suppliers identified. However, we acknowledge that our estimates of the impact on administration costs may underestimate the one-off costs for some suppliers.

Across the issues identified, three large suppliers identified that there would be operational costs associated with implementation of the requirements. However, due to the lack of additional data in relation to these costs, we have been unable to quantify these additional costs in our analysis.

We have, however, considered these points qualitatively within Chapter 4, and have acknowledged that some suppliers may need to invest in their IT systems in order to transition to business as usual under the cap.

Costs of supplying existing WHD customers

Summary of responses:

Some suppliers were concerned that suppliers will not be able to recover the efficiently incurred costs associated with WHD customers if they are only able to charge the cap level set for default tariff customers who pay by direct debit, irrespective of their payment type. They also suggested that this is not provided for within the calculation of the cost allowance on which the cap is based, or mentioned in the impact assessment.

Our position:

We recognise that there will be some additional costs incurred by suppliers from moving standard credit customers from the WHD safeguard tariff onto the direct debit level of the default tariff cap. We have taken this cost into consideration in the round and alongside all other uncertainties when setting out headroom allowance, which we consider to be appropriate. We therefore do not expect this policy decision to, on average, have an additional impact that should be considered within the impact assessment.

However, suppliers with a higher than average proportion of WHD customers may be more negatively impacted by this. We consider this within our assessment of the impact of the cap resulting from variation in efficient costs across suppliers in Chapter 4.

Reviewing the cap

Summary of responses:

One respondent suggested that Ofgem should assess the impacts of the cap annually, review the cap methodology in light of the findings and remove the cap if the review identifies that the costs outweigh the benefits, regardless of whether conditions for effective competition are considered to be in place.

Our position:

In accordance with the Act, in 2020, we will review whether the conditions are in place for effective competition, and publish a report, including a recommendation on whether the cap should be extended or not. The Secretary of State would then decide whether to extend the cap. If the cap is extended, we would carry out a further review in 2021 and, if it is further extended, a further review in 2022. If the cap is extended after each of our reviews, it will cease to have effect at the end of 2023. The scope of the review, and the basis for the removal of the cap by the Secretary of State, is set by the Act.

Impact on consumers

Vulnerable customer choice

Summary of responses:

One large supplier raised concerns that the default tariff cap will discourage suppliers from offering tariffs to customer groups that are more costly to serve, eg customers eligible for WHD paying by standard credit. As a result, the respondent indicated that the choice of tariffs available to these customers could be limited, leading to consumer detriment.

Our position:

We note in Section 6, that many of these consumers have seen little benefit from competition in the market already. In addition, the supply licence makes clear suppliers' obligations to treat their customers fairly and in doing so we would not expect any additional detriment at the expense of this customer group.

Customer service

Summary of responses:

One large supplier stated that the impact assessment should analyse the impact of the default tariff cap on customer service in greater detail, including a quantification of the risk to customer service levels.

Our position:

No respondents provided additional detail as to the extent to which they consider that customer service could decrease, or provided us with information that would allow us to quantify this impact.

We recognise in our impact assessment that the cap has been set at a level that will require some suppliers to achieve cost savings in order to remain profitable following the implementation of the default tariff cap. We would expect such suppliers to attempt to improve efficiency in order to achieve these savings. We recognise the possibility that suppliers may also cut controllable costs, such as customer service costs.

However, given that suppliers must still meet their customer service obligations, we would not expect a reduction in service below that of the minimum standard.

We recognise that there could be an impact on the quality of service offered by suppliers offering higher levels of customer service. However, to the extent that improved customer service could actually generate efficiencies, for example due to fewer complaints, investment in customer service may actually increase as suppliers implement efficiencies. Furthermore, a reduction price competition may increase the incentive for suppliers to competition on non-price factors such as service quality.

Despite potential impacts in this area, we do not have sufficient information, either provided by suppliers, or available from other sources, to quantify any potential impact on quality of service. We therefore consider that it would not be proportionate to seek to quantify this impact, and have therefore maintained our qualitative approach to assessment of this.

Customer confusion

Summary of responses:

A number of suppliers argued that the interaction of the default tariff cap and the PPM safeguard tariff would cause confusion for customers. In addition, two suppliers and one consumer group argued that adding a variable element to the payment method differential would cause customer confusion and could discourage the take up of SMETS2 meters.

Our position:

We acknowledge the arguments made by suppliers with respects to customer confusion resulting from the proposal to move PPM customers on SMETS2 meters onto the default tariff cap. Our policy response to reduce such potential confusion is detailed in Appendix 8 – Payment method uplift. Our decision will allow suppliers to align the treatment of SMETS2 PPM customers with those on the PPM safeguard tariff and therefore relieve concerns regarding customer confusion and impacts on the smart rollout. Given our policy response, we do not consider that there are impacts remaining that should be included in the impact assessment.

With regard to the variable element of the payment method differential, we do not consider that our approach will increase customer confusion. Suppliers already have to explain how their tariffs, with variable and standing charges, link to bills. Many suppliers and PCWs are already structured to help customers understand this relationship.

The instance where a customer needs to compare a direct debit tariff with its standard credit equivalent is the relatively narrow case of customers switching between payment methods. In these cases, though we acknowledge that communicating the default tariff cap will have to be a carefully planned process, we do not consider that changing the structure of the differential will lead to significant customer confusion if communicated effectively.

We therefore do not include this impact within our impact assessment.

Impact on competition and innovation

Acquisition tariffs

Summary of responses:

One large supplier highlighted that the default tariff cap will mean that suppliers will be unable to offer low priced acquisition tariffs in order to attract new customers, and therefore impact competition.

Our position:

Our impact assessment captures the potential impact of the implementation of the default tariff cap on fixed tariffs priced below the cap level and identifies that suppliers may need to increase low priced fixed tariffs in order to offset the revenue losses from the cap. The acquisition tariffs referred to by the respondent form a subset of fixed tariffs available only to new customers, and are therefore included within our quantitative scenario analysis of the impact.

While the analysis of the impact on suppliers, customers and competition already factors in this impact, we note that this could particularly affect suppliers with a

business model that relies on attracting new customers with cheap fixed tariffs. We have updated the impact assessment to reflect this in Chapter 6.

Smart metering

Summary of responses:

A large supplier has stated that the impact assessment should cover the potential negative impacts of any delay in the rollout of smart meters as a result of the default tariff cap.

Our position:

Within Appendix 7 – Smart metering costs we detail the changes that have been made to our methodology for estimating the smart metering net cost change (SMNCC) based on information and evidence provided by respondents. As we state in Appendix 7, we have made three key decisions that give regard to the need for an efficient supplier to have sufficient resources to continue as planned with their rollout. Specifically, these are:

1. use of an average costs efficiency approach for smart costs, compared to a lower quartile minus £5 applied to other operating costs

2. using a high roll out profile, which exceeds the supplier produced rollout profiles in electricity of all six of the largest suppliers for electricity and five of the largest six suppliers in gas

3. 'pass-through' of smart industry body charges based on a fully obligated supplier.

Furthermore, given there is some uncertainty on future smart metering costs and rollout profile, a review will be undertaken in 2019 to set the SMNCC for October 2019 and future default tariff cap periods. This review aims to ensure the allowance for the SMNCC within the cap level continues to be based on the latest information and data. We may also choose to conduct further reviews post 2019.

On this basis we do not anticipate that the implementation of the cap should have any impact on the smart meter rollout.

If suppliers failed to meet their smart metering supply licence obligations, leading to a reduction in smart meter rollout, this could have a negative impact on customers. We have included details of the impact on customers in Chapter 6 of our final impact

assessment drawing on evidence from the BEIS Smart meter roll out cost benefit analysis.[180]

Time of use tariffs

Summary of responses:

One small supplier respondent raised concerns that the default tariff cap would discourage suppliers from offering innovative tariffs or different tariff structures, including time of use tariffs.

Our position:

We identified this potential impact within our draft impact assessment. The potential impact on innovative tariff offerings and different tariff structures, including time of use tariffs, is assessed in Chapter 6 of this document.

Wider impacts and unintended consequences

Security of supply

Summary of responses:

One respondent raised concerns that the default tariff cap will reduce security of supply in the GB energy market as a result of increased consumption of energy.

Our position:

We set out in the impact assessment that we would expect energy consumption to increase for some of those consumers covered by the default tariff cap.

However, we do not consider this to pose a risk to security of supply within the GB energy market. The electricity capacity market is in place to mitigate against any risk to the security of supply of electricity. In addition to this there is spare capacity in the supply market of both gas and electricity due to a downward trend in energy consumption, which is expected to continue.[181] Furthermore, the forward supply outlook for gas and electricity notes that there is a minimal risk to the supply.[182] Due to the combination of spare capacity within the market and the positive forward supply outlook, we do not consider there to be a risk to the security of supply as a result of

[180] BEIS (2016) Smart meter rollout (GB): cost benefit analysis.
[181] National Grid: Winter Outlook 2018/19.
[182] National Grid: Winter Outlook 2018/19.

increased consumption from the default tariff cap. We provide detail of our assessment in Chapter 7.

Impact on supplier workforce

Summary of responses:

One respondent raised concerns that the default tariff cap will have an impact on those employed in the energy sector. The respondent suggested that due to the default tariff cap, energy suppliers may cut controllable costs such as pay, pension contributions and in general it may lead to decreasing workplace conditions.

Our position:

We acknowledge that the default tariff cap may result in some suppliers adopting cost cutting measures and reducing controllable costs where possible. This cost cutting could negatively impact employees' terms of employment, and could result in some job losses. In addition, supplier exit from the market as a result of the default tariff cap would also result in job losses from suppliers that exit, though we would expect this, to some degree, to be offset by jobs created within suppliers that take on the customers of these suppliers. We consider this in our analysis of wider impacts in Chapter 7.

Impact of changes to share prices

Summary of responses:

One supplier identified that any reduction in suppliers' share prices could indirectly impact public shareholders, including pension funds that hold shares in the market. The respondent also considered that this may reduce investment in the energy sector, which could have a subsequent impact on innovation.

Our position:

We agree that these may be potential impacts of the cap and have therefore included a qualitative assessment of these impacts in Chapter 4 as part of our analysis of the impact of the default tariff cap on equity valuations. However, as we detail in our analysis, we do not consider these impacts to be material due to the small proportion of the overall equity market that publicly listed energy companies make up. We consider potential effects of the cap on innovation in Chapter 6.

Appendix 11.2: International evidence

In order to better understand the potential impacts of the default tariff cap, we have reviewed the impacts of price caps in other international energy markets.

We have considered international case study evidence from the following markets:

- Australia
- Northern Ireland
- Illinois, United States
- Spain
- California, United States

We provide a summary of the price protections in each country and the evidence relating to the associated impacts on suppliers and consumers on the following page.

We have not considered all instances where price protections have been put in place in countries. We have excluded five countries[183] from our case study analysis where it was deemed that the case studies would provide limited insight given that the price protections were not sufficiently similar to the protections being implemented in the GB domestic retail energy market.

It should be noted that none of the case studies we have reviewed are an exact parallel to the default tariff cap being implemented, nor will the market structure and forces be exactly the same as the GB retail energy market. Therefore, the impacts identified in the international case studies should be considered alongside the context in which they have occurred.

[183] The countries we have excluded from our analysis are: France, Denmark, Germany, the Netherlands and New Zealand.

Case study and context	Supplier impacts and responses	Customer impacts and responses	Key findings for the default tariff cap
Australia Australia's approach to retail energy regulation varies by region, with price controls in three of Australia's regions.	Deregulated regions were able to price freely, with resulting price differentials greater than those in regulated regions. Regions with tighter regulated prices had less price differential than those with looser regulated prices. Competition also benefitted product differentiation.	Fully deregulated regions experienced higher switching rates than those with price caps. Regions with default tariffs set at higher prices had greater price differentials and switching than those with default tariffs set at lower prices.	Switching rates and innovation are likely to be negatively affected by the imposition of a tariff cap due to its effect on price differentials. A tighter cap has a larger impact on switching and on product differentiation/innovation (eg distributed energy optimisation) than one with more headroom.
Northern Ireland The Utility Regulator sets the standard prices for Northern Ireland's electricity and gas incumbents, with other suppliers able to price freely, aiming to beat the regulated prices. Regulated prices are calculated to a regulated margin of 2.2%.	Suppliers have steadily entered the market. Fixed pricing is up to c.20% beneath the regulated price. Most suppliers offer a cheap fixed price and a standard tariff broadly aligned to the regulated cap.	Switching within the electricity market has shown a marked increase (to 16% by 2016) in recent years following a Government marketing push, with a corresponding drop in the incumbents' market share. Consumer trust remains high.	Regulated incumbent's SVTs coexists with price competition beneath the cap and switching. This appears to work as the regulated price is set sufficiently high for fixed price tariffs to be 20% lower. Suppliers are also able to manage customers on both fixed and standard tariffs (potentially enabling some cross-subsidy to attract new customers). Moreover, trust is high and Government has actively marketed switching.
Illinois The domestic retail electricity market is characterised by a regulated retail price from regional vertically-integrated suppliers. Since 1997, new entrants and small suppliers have been able to offer a non-regulated price, competing against the regulated 'price to beat'.	Alternative suppliers entered the market, peaking at 93 today, supported by wide price differentials. Whilst large-scale community aggregation schemes gave them initial success, market share of competitive suppliers has fallen since 2014, from 69% to 35%.	Decreases in the regulated price eroded benefits of using competitive suppliers. In 2012 competitive prices were 20% below the regulated price. By 2014 the competitive price was over 20% more expensive than the regulated price. Switching has remained high, as people switch back to incumbents.	The period of 2008-2014 show how competition and price caps can co-exist for the benefit of customers. More recently, where customers have chosen tariffs more expensive than the regulated rate, it shows the importance of non-price factors, (ie offerings and service quality) in promoting competition.
Spain After the liberalisation of Spain's energy market in 2003, tariff caps which had been set below cost in Spain led to a severe tariff deficit. This problem was eventually recognised in the 2008-09 reforms, where prices were then set high enough (above cost) to encourage competition.	Below cost pricing for the regulated tariff charged by incumbents deterred new entry. Significant market entry occurred after the 2008/09 reforms to make prices more cost-reflective.	During the time of the tariff deficit, switching rates lagged those of other EU markets. In line with increased market entry and rising regulated prices, between 2009 and 2012 switching rates steadily rose from 5.2% to 12.1%.	Negative margins due to regulated prices were the key factor behind the lack of market entry and switching. Reversal of this position initiated improved switching rates and market entry.
California (1996-2004) The Californian energy market in the late 1990s can be characterised by a volatile, short-term wholesale market, inflexible generation capacity, coupled with long-term fixed retail prices for incumbent retailers.	When these regulated retail prices eventually fell below the cost of energy, there was a major impact on security of supply and the financial integrity of suppliers. Some incumbent suppliers went bankrupt.	Following the introduction of deregulation, only 2% of domestic customers switched to competitive suppliers in the late 1990s. The low price of the regulated tariff compared to the high wholesale costs meant that efficient new entrants could not compete with incumbents effectively.	This example demonstrates the importance of ensuring that policy, and the policy-revision process, can withstand and mitigate external market shocks. One avenue for this is headroom to build in financial resilience to sudden shocks or unforeseen circumstances.

Appendix 11.3: Suppliers' cost of capital

This appendix explains the potential impact of the default tariff cap on a suppliers' cost of capital, resulting from both regulatory risk and also the direct financial impact on suppliers.

Impact of regulatory risk on the cost of capital

We have considered the possibility that the introduction of the default cap could lead to increased regulatory risks for suppliers. This relates to risks associated with changes in laws and regulations, such as the introduction of a default tariff cap that could impact the costs of financing for suppliers.

Regulatory risk can have an impact on financing costs for impacted firms. An increased regulatory risk could potentially impact the returns required from investors of the impacted firm, increasing its underlying cost of capital.

The extent to which regulatory risk leads to a material unintended increase in a supplier's cost of capital, is dependent on a complex economic and financial relationship between the structure of the regulatory intervention and its impact on the return demanded by investors of any impacted supplier.

We have analysed the potential impact of the default tariff cap on the cost of capital from a theoretical perspective. Wright, Mason and Miles,[184] on behalf of the UK Economic Regulators, have studied the relationships between regulatory intervention, in the form of price caps, and impacts on the cost of capital of regulated firms.

One of the key messages from their analysis, and which was also repeated by the CMA,[185] is that the impact of regulatory risk on the cost of capital only arises when the regulator's actions introduce systematic (non-diversifiable) risk. Therefore, only when regulatory intervention introduces a relationship where the returns of the regulated firm co-vary with the returns on a market portfolio, does there exist a situation where intervention would increase the cost of capital of a firm.

In the context of a default tariff cap, we believe there are a limited number of potential situations where regulatory risk could impact the cost of capital. For example, under an extreme positive demand shock to the macro-economic environment, increases in the underlying wholesale costs of energy could lead supplier returns in the short term to co-vary with the market. In this scenario suppliers could experience increases in their shorter term costs of wholesale energy procurement, which could not be immediately recouped due to the price cap being fixed until the next update period. This could lead to a risk of cost under-recovery.

[184] Wright, Mason and Miles: A Study into Certain Aspects of the Cost of Capital for Regulated Utilities in the U.K.
[185] CMA (2016) Energy Market Investigation – Analysis of the cost of capital, paragraph 66.

We have not looked to quantitatively estimate these potential impacts due to the uncertainties involved. The impact of these potential relationships on the underlying cost of capital will be dependent on their likelihood and the potential scale which these impacts could have on the expected returns of suppliers within the market. We note, however, that there are a number of mitigating factors within the default tariff cap design, such as elements of cost pass through, which could limit potential risks.

Wright, Mason and Miles have modelled[186] how the inclusion of elements of cost pass through mitigate the impacts of cost uncertainty as a driver of regulatory risk. They have shown these factors to mitigate potential impacts on the costs of capital in these relationships.

Although such relationships could potentially arise, as outlined within Appendix 3 – Updating the cap methodology, the default tariff cap will in effect contain a number of elements which will be updated over time, and will look to pass through changes in the underlying costs. For instance, operational costs will primarily be indexed against inflation, while the wholesale cost allowance will be updated based on changes in the prices of forward contracts on the wholesale market. These mechanisms will serve to limit the risks of cost under-recovery over the longer term.

In addition, Wright, Mason and Miles have shown that a number of other factors of design, which we believe are applicable to the default tariff cap, have been shown to mitigate the potential for regulatory risk. These include:

- the limited discretion of the regulator to update the cap level
- the 6-month frequency of cap updates, reducing the likelihood of significant cost risk arising from shocks
- a transparent methodology, clear timeline and process for review, which will increase understanding regarding the revised level of the cap at each review point.

Overall, we consider that regulatory risk stemming from the default tariff cap is unlikely to lead to a material increase in the underlying cost of capital faced by a supplier. The design of the cap itself, primarily its transparency and flexible approach to cost pass through, will serve to limit the materiality of these impacts.

[186] CMA (2016) Energy Market Investigation – Analysis of the cost of capital, paragraph 66.

Impact on financial ratings of suppliers

We have also considered the potential impact of the default tariff cap on the credit ratings of certain suppliers, specifically those who are rated by credit ratings agencies.

Some public traded suppliers, particularly those larger organisations, receive credit ratings to assess the creditworthiness of their instruments issued on the financial markets.

Taking a recent credit opinion for one of these suppliers, we looked to pinpoint how the impact of the default tariff cap, could lead to a subsequent change in the supplier's credit rating.

First, we looked to estimate the potential impact of the default tariff cap on the revenues of a specific suppliers. Based on this revenue impact, we looked to analyse how different financial ratios (such as Cash Flow-to-Debt and Retained Cash Flow-to-Debt), could change. Secondly, we analysed how any changes in these ratios could come to impact the credit ratings of this organisation.

We have concluded that for those larger organisations, who are often diversified across a number of business models outside of domestic retail energy supply, we do not believe that the default tariff cap will negatively impact their credit rating. These organisations are primarily rated at group level, and therefore, any revenue are unlikely to be significant enough to negatively influence overall ratings.

However, we do consider that for smaller suppliers it is possible that the default tariff cap could impact credit ratings. Where these suppliers are not diversified away from domestic supply, or are already very close to the edge of a specific rating cut off, there is potential for a negative ratings impact, resulting from changes in their revenue.

Appendix 11.4: Summary of impacts

Below we have summarised the impacts of the default tariff cap. These are presented as both the expected impact across the first year of the default tariff cap, in 2018 prices, without scaling for the transition of fixed tariff customers. In addition, we have outlined the potential impact up to 2020, on a NPV basis.

Table A11.26: Impact across first year of default tariff cap (in 2018 terms) for Scenario 1 – Prices fall to the cap

Impacts (£m)	Option 1	Option 2	Option 3
Consumer impacts			
Direct consumer gain (inc. VAT)	£1,661	£1,233	£880
Indirect consumer gain (inc. VAT)	£62	£23	£16
Supplier impacts			
Direct revenue impact (ex. VAT)	£1,582	£1,174	£838
Indirect revenue impact (ex. VAT)	-£59	-£22	-£15
Admin costs	-£9	-£9	-£9
Net gain from reduced third party switching commission	£38	£25	£17
Net gain from consumption (ex. VAT)	£22	£16	£11
Wider impacts			
Government administration costs	-£4	-£4	-£4
Direct VAT receipts	-£79	-£59	-£42
Net VAT receipts	-£82	-£60	-£43
Net emission impact	-£22	-£17	-£12
Third party switching revenue	-£38	-£25	-£17
Total impacts			
Total consumer impact	£1,724	£1,255	£896
Total supplier impact	-£1,590	-£1,163	-£834
Total wider impact	-£146	-£106	-£76
Total net impact	-£13	-£14	-£14

Source: Ofgem analysis

Table A11.27: Impact across first year of default tariff cap (in 2018 terms) for Scenario 2 – Prices converge to the cap

Impacts (£m)	Option 1	Option 2	Option 3
Consumer impacts			
Direct consumer gain (inc. VAT)	£1,661	£1,233	£880
Indirect consumer gain (inc. VAT)	-£421	-£92	-£1,279
Supplier impacts			
Direct revenue impact (ex. VAT)	£1,582	£1,174	£838
Indirect revenue impact (ex. VAT)	£401	£849	£1,219
Admin costs	-£9	-£9	-£9
Net gain from reduced third party switching commission	£47	£42	£38
Net gain from consumption (ex. VAT)	£14	-£1	-£12
Wider impacts			
Government administration costs	-£4	-£4	-£4
Direct VAT receipts	-£79	-£59	-£42
Net VAT receipts	-£59	-£16	£19
Net emission impact	-£14	£0	£13
Third party switching revenue	-£47	-£42	-£38
Total impacts			
Total consumer impact	£1,240	£341	-£400
Total supplier impact	-£1,130	-£292	£398
Total wider impact	-£124	-£63	-£10
Total net impact	-£13	-£14	-£13

Source: Ofgem analysis

Table A11.28: Impact up to 2020 of default tariff cap (NPV in 2018 prices) for Scenario 1 – Prices fall to the cap

Impacts (£m)	Option 1	Option 2	Option 3
Consumer impacts			
Direct consumer gain (inc. VAT)	£3,057	£2,269	£1,619
Indirect consumer gain (inc. VAT)	£76	£28	£20
Supplier impacts			
Direct revenue impact (ex. VAT)	£2,912	£2,161	£1,542
Indirect revenue impact (ex. VAT)	-£72	-£26	-£19
Admin costs	-£16	-£16	-£16
Net gain from reduced third party switching commission	£77	£52	£34
Net gain from consumption (ex. VAT)	£41	£29	£20
Wider impacts			
Government administration costs	-£5	-£5	-£5
Direct VAT receipts	-£146	-£108	-£77
Net VAT receipts	-£130	-£96	-£69
Net emission impact	-£41	-£31	-£23
Third party switching revenue	-£77	-£52	-£34
Total impacts			
Total consumer impact	£3,133	£2,297	£1,638
Total supplier impact	-£2,882	-£2,123	-£1,522
Total wider impact	-£253	-£183	-£130
Total net impact	-£1	-£9	-£14

Source: Ofgem analysis

Table A11.29: Impact up to 2020 of default tariff cap (NPV in 2018 prices) for Scenario 2 – Prices converge to the cap

Impacts (£m)	Option 1	Option 2	Option 3
Consumer impacts			
Direct consumer gain (inc. VAT)	£3,057	£2,269	£1,619
Indirect consumer gain (inc. VAT)	-£513	-£1,091	-£1,573
Supplier impacts			
Direct revenue impact (ex. VAT)	£2,912	£2,161	£1,542
Indirect revenue impact (ex. VAT)	£489	£1,039	£1,498
Admin costs	-£16	-£16	-£16
Net gain from reduced third party switching commission	£95	£86	£77
Net gain from consumption (ex. VAT)	£24	-£3	-£25
Wider impacts			
Government administration costs	-£5	-£5	-£5
Direct VAT receipts	-£146	-£108	-£77
Net VAT receipts	-£110	-£57	-£14
Net emission impact	-£25	-£0	£27
Third party switching revenue	-£95	-£86	-£77
Total impacts			
Total consumer impact	£2,544	£1,178	£45
Total supplier impact	-£2,320	-£1,055	-£7
Total wider impact	-£234	-£148	-£69
Total net impact	-£10	-£26	-£31

Source: Ofgem analysis

Appendix 11.5: Direct costs and benefits to business calculations

The direct cost to business estimate includes the direct revenue impact of the cap and the administrative costs. In total, we have calculated these costs as an NPV of approximately £2,365m across the first two years of the default tariff cap up until December 2020. These costs relate to option 2.

Revenue impacts reflect the vast majority of these costs. Reduction in revenues from the reduction in default tariff prices to the cap level will directly lead to impacts of around £1,233m across 2019 and £1,154m across 2020.

Administrative costs relate to the cost to suppliers of updating prices in line with cap updates. These costs are estimated at around £8.8m across 2019 and £8.4m across 2020. These impacts are summarised in the table below.

Table A11.30: EANDCB Calculator summary nominal

Cost	2019	2020
Revenue impact on suppliers	£1,233m	£1,154m
Increased administration costs for suppliers	£8.8m	£8.4m
Total	£1,242m	£1,162m

Source: Ofgem analysis

This generates an Estimated Annual Net Cost to Business (EANDCB) of £995m adjusted to 2014 prices.