

# Balancing and Settlement Code Modification Proposal 272 – supporting analysis

## Supporting analysis

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### Overview:

The electricity settlement process set out in the Balancing and Settlement Code (BSC) places incentives on suppliers to buy energy to meet their customers' demand. Today, the settlement process estimates most consumers' consumption in each half hour.

Suppliers have a licence obligation to supply larger non-domestic customers in Profile Classes 5-8 through an advanced meter that can record half-hourly consumption. BSC Modification Proposal 272 would require that these consumers are settled using their half-hourly data.

In most cases, Ofgem is responsible for deciding whether modifications to the BSC are implemented. In October 2013, we published an impact assessment on BSC Modification Proposal 272 for consultation. This document sets out how we revised our analysis to take account of responses to consultation.

## Context

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Under the Balancing and Settlement Code (BSC), suppliers are charged for any difference between the amount of electricity they purchase and the amount their customers consume in each half hour of the day. BSC Modification Proposal 272 ('P272') would require that consumers in Profile Classes 5-8 are settled using half-hourly consumption data rather than estimates of their usage.

In most circumstances, Ofgem is responsible for deciding whether modifications to the BSC are implemented. We also have a statutory duty to carry out an impact assessment concerning proposals that we consider are 'important' within the meaning of section 5A of the Utilities Act 2000. P272 meets the definition of an 'important proposal' because it would have a significant impact on suppliers and implications for consumer bills and engagement in the market. In fulfilment of our statutory duty, we published an impact assessment on P272 for consultation on 29 October 2013. This document also explained that we were minded to approve the modification.

This document sets out how we revised our analysis to take account of responses to our consultation. This work informed our decision on P272, which was published on 29 October 2014.

## Associated documents

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All documents are available at [www.ofgem.gov.uk](http://www.ofgem.gov.uk)

*Authority decision on Balancing and Settlement Code P272: Mandatory Half-Hourly Settlement for Profile Classes 5-8, October 2014*

*Authority decision on Balancing and Settlement Code P300: Introduction of new Measurement Classes to support Half Hourly DCUSA Tariff Changes (DCP179), October 2014*

*Authority decision on Distribution Connection and Use of System Agreement DCP179: Amending the CDCM Tariff Structure, October 2014*

*Advanced electricity meters: Decision letter on timely access to data for larger non-domestic consumers, May 2014*

*Electricity Balancing Significant Code Review: Final Policy Decision, May 2014*

*Direction to the Balancing and Settlement Code (BSC) Panel to consult on a revised proposed implementation date for BSC Modification Proposal 272, February 2014*

*Smart and advanced electricity meters: Two-year meter inspection obligation and consumer access to data, December 2013*

*Balancing and Settlement Code Modification Proposal 272 – draft impact assessment, October 2013*

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## Executive Summary

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The Balancing and Settlement Code (BSC) sets out rules for determining how much each electricity supplier's consumers use in each half hour of the day. Suppliers are charged for any difference between this amount and the volume of energy that they buy.

At present, most consumers are settled non-half-hourly (NHH) using estimates of their usage in each half hour. Historically, these consumers did not have meters capable of recording half-hourly (HH) consumption. However, this is changing. Suppliers have a licence obligation to supply consumers in Profile Classes 5-8 through advanced meters that can record HH consumption. BSC Modification Proposal 272 ('P272') would mandate HH settlement for these consumers. During the assessment of P272, an alternative was raised ('P272 Alternative') that was identical to the proposal but delayed implementation by one year to 1 April 2015.

In fulfilment of our statutory duty, Ofgem published an impact assessment on P272 on 29 October 2013. Nearly all respondents supported our approach to assessing the impacts of P272. However, some expressed concerns about our conclusions. The key themes raised by these respondents were that:

- the benefits of demand-side response (DSR) can be achieved without HH settlement
- our quantitative analysis overestimated the potential for load shifting among Profile Classes 5-8
- we underestimated the costs of implementing P272
- Distribution Use of System (DUoS) charging arrangements were not fit-for-purpose to allow consumers in Profile Classes 5-8 to move to HH settlement.

This document sets out how we updated our analysis to take account of respondents' views.

We remain of the view that P272 will strengthen the incentives on suppliers to encourage DSR and that only mandatory HH settlement will allow the benefits to be fully realised. Our analysis used evidence showing that there is potential for load shifting among consumers in Profile Classes 5-8. Moreover, P272 helps to address some of the factors that non-domestic consumers said can act as a barrier to DSR, such as lack of offers from suppliers.

Our impact assessment used the information gathered as part of the workgroup's assessment to estimate the costs of implementing P272. Two large suppliers provided updated information on their upfront costs in response to our impact assessment consultation. We used this information to inform our revised estimate of the upfront costs of P272. One large supplier also said that we had underestimated ongoing costs. The information gathered by the workgroup showed that suppliers would incur different ongoing costs if P272 is implemented, particularly for meter maintenance, data collection and data aggregation. We remain of the view that

competitive pressure will drive all suppliers to implement P272 as efficiently as possible, including by improving their procurement processes to obtain these services.

Respondents confirmed our view that our decision on P272 should take account of ongoing changes to DUoS charging arrangements. To allow this to happen, we directed the BSC Panel to consult on a revised proposed implementation date for P272 Alternative. Subsequently, we have approved changes to DUoS charging arrangements that address the concerns raised by respondents.

Since publication of our impact assessment, we have also assessed the potential for consumers that have contracted directly with supplier agents to incur fees if the contracts they hold are terminated or amended. We requested information from suppliers and supplier agents to inform our analysis. We found that only a small number of consumers are at risk of termination fees. Moreover, our analysis shows that termination and amendment fees are small in the context of a typical electricity bill and the overall benefits of HH settlement.

Alongside this document, we have published our decision to approve P272 Alternative. Our decision was informed by the work we did to update the analysis in our impact assessment to take account of responses to consultation.

# 1. Introduction

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1.1. Balancing and Settlement Code (BSC) Modification Proposal 272 ('P272') would change how consumption of larger non-domestic consumers is determined for the purposes of settlement. We carried out an impact assessment (IA) on this modification, and published the IA for consultation on 29 October 2013.<sup>1</sup>

1.2. This chapter provides an overview of P272 and our IA. It then explains the purpose of this document.

## **BSC Modification Proposal 272**

1.3. The electricity settlement process places incentives on suppliers to match the amount of energy they buy with the amount used by their customers in each half hour of the day (called a 'settlement period'). This process is set out in the BSC.

1.4. Historically, most consumers have not had meters capable of recording their half-hourly (HH) consumption. These consumers are assigned to one of eight Profile Classes and are settled non-half-hourly (NHH) based on estimates of their usage in each settlement period. While most consumers are settled NHH, a small number of consumers must be settled HH because their average maximum demand exceeds 100kW in defined circumstances.

1.5. From 6 April 2014, suppliers have a licence obligation to supply customers in Profile Classes 5-8 through an advanced meter. These customers are generally considered to be the largest non-domestic consumers currently settled on estimates. Advanced meters are able to record half-hourly consumption data and can be read remotely.

1.6. Smartest Energy raised P272 to require that consumers in Profile Classes 5-8 be settled using their HH consumption data from 1 April 2014 ('P272 Proposed'). The workgroup established by the BSC Panel to assess this proposal developed an alternative that was identical to P272 Proposed except that it delayed implementation by one year to 1 April 2015 ('P272 Alternative'). On 13 December 2012, the BSC Panel unanimously recommended that we reject both P272 Proposed and P272 Alternative. We received the BSC Panel's Final Modification Report (FMR) on 18 December 2012.<sup>2</sup>

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<sup>1</sup> P272 impact assessment consultation can be found at: <https://www.ofgem.gov.uk/ofgem-publications/84560/balancingsettlementcodemodificationproposal272draftia.pdf>

<sup>2</sup> The FMR can be found on Elexon's website at: <http://www.elexon.co.uk/mod-proposal/p272-mandatory-half-hourly-settlement-for-profile-classes-5-8/>

## Our impact assessment consultation

1.7. In certain circumstances, we have a statutory duty to carry out an IA concerning proposals that we think are 'important' within the meaning of section 5A of the Utilities Act 2000. If approved, P272 would be an important change to market arrangements because it would have a significant impact on suppliers, particularly the costs they incur in supplying consumers in Profile Classes 5-8. This in turn could affect consumer bills and engagement in the market.

1.8. In fulfilment of our statutory duty, on 29 October 2013 we published our IA on P272 Alternative for consultation. Wherever possible, we quantified the impacts identified. We published the model we used to quantify some of the impacts of P272 Alternative on our website.<sup>3</sup>

1.9. Our IA also explained that we were minded to approve P272 Alternative. However, we recognised that there was not a Distribution Use of System (DUoS) HH tariff designed for consumers in Profile Classes 5-8. We noted work was under way to propose a change to the Distribution Connection and Use of System Agreement (DCUSA) to create new HH tariffs for these consumers. We said we would monitor progress of this modification proposal and, in reaching a decision on P272, would take account of any further developments.

1.10. We received 22 responses to our consultation. These are listed in Annex 1 and non-confidential responses have been published on our website.<sup>4</sup> More than half of respondents emphasised the interactions between P272 and DUoS charging arrangements. This reinforced our view that our decision on P272 should take account of ongoing changes to these arrangements. To allow this to happen, we directed the BSC Panel on 6 February 2014 to consult on a revised proposed implementation date for P272 Alternative.<sup>5</sup>

1.11. On 11 September 2014, the BSC Panel unanimously agreed a revised proposed implementation date for P272 Alternative of 1 April 2016. This followed a consultation on this date issued by Elexon on behalf of the BSC Panel on 1 August 2014. The BSC Panel also approved and submitted to the Authority revised legal text for P272 Alternative. This was updated to reflect the revised proposed implementation date.

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<sup>3</sup> The model that we used to quantify some of the impacts of P272 can be found at: <https://www.ofgem.gov.uk/publications-and-updates/balancing-and-settlement-code-bsc-p272-mandatory-half-hourly-settlement-profile-classes-5-8-%E2%80%93-draft-impact-assessment-consultation>

<sup>4</sup> Non-confidential responses to our consultation can be found at: <https://www.ofgem.gov.uk/publications-and-updates/balancing-and-settlement-code-bsc-p272-mandatory-half-hourly-settlement-profile-classes-5-8-%E2%80%93-draft-impact-assessment-consultation>

<sup>5</sup> Our letter to the BSC Panel provides further information on the reasons for issuing the direction and can be found at: <https://www.ofgem.gov.uk/ofgem-publications/85912/directiontobscpanelonmodificationp272.pdf>

## **Purpose of this document**

1.12. This document explains how we have updated our analysis on the impacts of P272 to take account of responses to consultation. We considered all responses in updating our analysis. This document should be read alongside our IA.

1.13. As described above, P272 Proposed and P272 Alternative are identical except for the implementation date. Therefore, in this document, we refer to 'P272' when discussing the impacts of moving consumers from NHH to HH settlement. Occasionally we refer to P272 Alternative when we consider that solution specifically.

1.14. Our IA asked for responses to specific questions. In the chapters that follow, we have grouped respondents' views on our IA by theme. The themes are:

- our approach to assessing the impacts of P272
- how P272 can affect suppliers' ability to buy and sell energy efficiently, including by encouraging demand-side response
- how P272 can reduce the costs of managing the settlement process
- our estimate of the costs of implementing P272 for market participants and of the costs that may fall directly to consumers
- the results of our quantitative analysis
- interactions between P272 and other parts of the regulatory framework
- timing of implementation of P272.

1.15. Grouping by theme provides a more accessible way of describing respondents' views and how we considered them in our analysis. This includes those respondents that did not respond directly to the questions we asked. However, we do refer to specific questions where appropriate.

1.16. For each of the themes, this document provides: a brief overview of the analysis presented in our IA; a summary of respondents' views; our response to respondents' views including how we updated our analysis. In summarising responses, we have grouped respondents by category of stakeholder.

1.17. Alongside this document, we have published our decision to approve P272 Alternative.<sup>6</sup> This decision was informed by the work we did to update our analysis on the impacts of P272 to take account of respondents' views.

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<sup>6</sup> Our decision letter on P272 can be found at: <http://www.ofgem.gov.uk/publications-and-updates/balancing-and-settlement-code-bsc-p272-mandatory-half-hourly-settlement-profile-classes-5-8>

## 2. Approach to assessment

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2.1. Respondents to the consultation commented on our overall approach to identifying and analysing the impact of P272. Some also discussed the counterfactual against which we assessed this impact. This chapter sets out how we updated our analysis to take account of respondents' views on our overall approach and the counterfactual.

### **Overall approach**

2.2. Our IA described our approach to assessing the impact of P272. It explained that we identified how P272 can affect market participants and then considered the impact of these changes on competition and consumers. We also said we had quantified the impact wherever possible.

#### *Respondents' views*

2.3. Question one of our IA asked if respondents agreed with our approach to assessing the impact of P272.

2.4. Of those that responded to this question, nearly all supported our approach. However, all large suppliers queried our assessment of the impacts. One said that it had concerns regarding the inputs to our quantitative assessment. Two argued that we had overstated the potential benefits of demand-side response (DSR), while two stated that some costs had been underestimated. Reflecting on the results of our quantitative analysis, two large suppliers argued that there is uncertainty around the outcome while one stated that there is not a clear benefit for consumers. One large supplier also argued that the quantitative analysis is not sufficient for them to come to a view on P272.

2.5. Question two of our IA asked if there are any material impacts that we had not assessed that we should. Some respondents to this question queried our analysis of specific impacts we identified, including our estimation of the benefits of DSR and the costs of implementation. Others identified impacts that we had not considered. We consider these impacts in the relevant chapters that follow.

#### *Ofgem response*

2.6. We note the strong support for our approach to assessing the impact of P272. We consider that our approach is appropriate and helps inform our evaluation of P272 against the BSC objectives and our statutory duties. We consider the concerns raised by large suppliers in response to question one in the chapters that follow.

2.7. Wherever possible, we quantified the impacts of P272. We consider that we took a conservative approach. For example, we did not quantify the potential for

greater efficiency across the market from stronger competition. We also underestimated the value of DSR. We discuss our approach to quantifying the value of DSR in more detail in chapter three.

## **Counterfactual**

2.8. Our IA explained the counterfactual we used. One consideration was the potential for suppliers to elect to move any customer with appropriate metering equipment to half-hourly (HH) settlement. We argued that suppliers have weak incentives to do this. We also said that we did not have enough information to quantitatively model how the costs of implementing P272 would be affected by more suppliers choosing to move customers to HH settlement.

### *Respondents' views*

2.9. Our IA did not ask a specific question on our counterfactual. However, one supplier agent supported and two large suppliers challenged our view that voluntary take-up of HH settlement will remain low. In response to question one, one large supplier argued that voluntary take-up could be higher if appropriate market conditions are in place, highlighting the need for changes to the Distribution Use of System (DUoS) charging arrangements. The other large supplier suggested we model a scenario where these changes are implemented.

2.10. Two respondents queried how our counterfactual took account of the potential for some DSR benefits to be realised without mandatory HH settlement in response to question four. This question asked if respondents agreed with our approach to quantifying the value of load shifting and load reduction. One large supplier argued that the customers that move to HH settlement voluntarily would be most likely to realise DSR benefits. Another large supplier said that 95% of the benefits of DSR could be realised through the NHH arrangements.

2.11. Question 13 of our IA asked for information from suppliers on the upfront costs of voluntarily moving consumers to HH settlement. In response to this question, three large suppliers estimated the number of additional HH sites their systems could accommodate before investment in new capacity would be required.

### *Ofgem response*

2.12. While we received information from three suppliers on the upfront costs of voluntarily moving consumers to HH settlement, this was not sufficient for us to assess the impact this would have on the incremental costs and benefits of P272. However, we do not believe such an analysis is necessary. While reform of DUoS charging arrangements will remove one factor that dampens incentives for suppliers to move customers to HH settlement, the other factors we identified in our IA will remain. Respondents to consultation did not challenge the validity of these factors.

2.13. We explain how we took account of respondents' views on DSR in chapter 3.

## 3. Impact from changes to how suppliers buy and sell energy

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3.1. The settlement process drives suppliers' decisions on how much energy to buy, and is one factor in determining how they price it to consumers. In our impact assessment (IA), we considered how P272 could impact on how suppliers buy and sell energy. We argued that P272 would create stronger incentives for suppliers to encourage demand-side response (DSR) among their customers in Profile Classes 5-8. We also assessed how P272 could improve demand forecasting. In this chapter, we explain how we updated our analysis of these changes to take account of respondents' views. We also consider an additional impact identified by respondents relating to the allocation of energy between half-hourly (HH) and non-half-hourly (NHH) consumers.

### Creating the right environment for DSR

3.2. In our IA, we argued that P272 could reduce bills, strengthen security of supply and help connect low-carbon generation by giving suppliers stronger incentives to encourage DSR among their customers. We defined DSR as changes in energy use by consumers at particular times in response to a signal, such as price. Respondents to the consultation raised the following points on our analysis:

- the potential for P272 to strengthen incentives for suppliers to encourage DSR
- the potential for load shifting among consumers in Profile Classes 5-8
- the benefits that are realised from DSR
- additional analysis that could inform our assessment.

### Stronger incentives on suppliers

3.3. By mandating the use of HH consumption data in settlement, P272 will more accurately allocate the costs that suppliers incur in purchasing and transporting energy to consumers in Profile Classes 5-8. In our IA, we argued that this would create stronger incentives for them to reduce these costs by encouraging more efficient consumption among their customers, including through DSR.

#### *Respondents' views*

3.4. Question three of our IA asked if respondents agreed that P272 would drive suppliers to encourage DSR. Of those that responded, one supplier agent, one distribution network operator (DNO) and one independent supplier agreed. One

independent supplier and one large supplier said this could happen. The large supplier identified potential barriers to DSR, especially the customer preference for simple tariffs. One large supplier also agreed in principle but argued that the extent of DSR will be less than assumed in our quantitative modelling.

3.5. Four large suppliers and one DNO disagreed with our assessment. Three reasons were put forward.

3.6. First, one large supplier argued that the NHH arrangements allow suppliers to offer time-of-use tariffs (ToU) to their customers. This point was also raised by two other large suppliers in response to other questions. ToU tariffs charge different prices at different times of the day, week, month or year. One of these suppliers said that a sizeable proportion of its customers already have ToU tariffs. Given this, it concluded that 95% of the benefits of load shifting can be achieved through the NHH arrangements. It also presented analysis comparing the price signal that a consumer would receive when settled on ToU tariffs through NHH and HH settlement. Linked to this point, this respondent argued that the only benefit of HH settlement comes from the offer of dynamic ToU tariffs that will not be needed in the short to medium term. These tariffs provide for price or pricing structures to vary at short notice in response to market events, subject to contractual terms.

3.7. Second, two large suppliers said the difference in energy between the wholesale electricity price in peak and off-peak periods is not sufficient for suppliers or consumers to see value in DSR. They argued that the difference will need to increase to create the right environment for DSR. One of these respondents also argued that the introduction of the capacity market will reduce peak prices.

3.8. Third, three large suppliers commented on the willingness and ability of consumers in Profile Classes 5-8 to shift load.

#### *Ofgem response*

3.9. We remain of the view that P272 creates stronger incentives for suppliers to encourage DSR among their customers. We address the first two issues raised by respondents that disagreed with our assessment below.

#### NHH arrangements allow suppliers to offer ToU tariffs to their customers

3.10. Under the NHH settlement arrangements, load profiles are created that estimate the HH consumption of the average consumer in each Profile Class. These load profiles are used to allocate energy to each half hour period. While overall metered electricity will be accurate, the timing of when this electricity was consumed will be estimated in line with the load profile.

3.11. Using load profiles to estimate consumption for NHH consumers does not give suppliers sufficient incentives to encourage customers to shift load. This is because load profiles assume all consumers have the same consumption pattern. Therefore,

suppliers do not receive the benefits if their customers change when they use energy.

3.12. We note the statement from one large supplier that some of its customers in Profile Classes 5-8 already have ToU tariffs. We noted in our IA that it is possible for suppliers to configure load profiles to offer static ToU tariffs, which set the prices applied at different periods and when these periods fall in advance.

3.13. However, offering static ToU tariffs in this way will not realise the full benefits of DSR. Consumers on these tariffs will still have their consumption for each half hour based on estimates. As a result, suppliers remain insulated from the true value of any changes in when their customers use energy. It also affects the rewards suppliers can provide to consumers for shifting load, and hence the products they offer.

3.14. Moreover, we consider that only mandatory HH settlement for all consumers in Profile Classes 5-8 places incentives on suppliers to encourage load shifting away from periods of highest demand. At present, the incentive for suppliers, albeit limited, is to target consumers with flatter consumption profiles that use less energy at peak than is assumed by the load profile. Offering static ToU tariffs to these consumers through the NHH arrangements allows suppliers to reduce their costs without the need for any behaviour change that helps to deliver the system-wide benefits of DSR. The same applies if the consumer moved to HH settlement. At the same time, suppliers are less likely to offer static ToU tariffs to consumers using electricity at peak times. This is because the prices they offer will not be competitive with other suppliers' flat tariffs that are settled against a profile.

3.15. P272 will also open up new opportunities for DSR that are not currently available to consumers in Profile Classes 5-8. For example, HH settlement enables suppliers to offer dynamic ToU tariffs. These tariffs could allow suppliers to unlock more of the value of DSR and pass on larger cost savings to consumers. We also note that DSR is eligible to participate in the capacity mechanism provided proposed metering requirements defined by the Department of Energy and Climate Change (DECC) are met. P272 can facilitate the participation of consumers in Profile Classes 5-8 because one way of meeting these requirements is to be HH settled.

3.16. For our quantitative assessment, based on the evidence available, we assumed that between 20% and 24% of consumers in Profile Classes 5-8 take up DSR products. This is the same assumption that DECC made in its impact assessment on the roll-out of smart metering to non-domestic consumers in Profile Classes 3-4, based on international evidence. While one respondent indicated that some of its customers in Profile Classes 5-8 already have static ToU tariffs, we do not think this level of take-up is unreasonable across the market.

#### Difference between peak and off-peak period prices

3.17. We note the views of two large suppliers that the difference between wholesale prices in peak and off-peak periods is not sufficient for suppliers or

consumers to see value in DSR. Using HH data in settlement allows suppliers to realise the full benefits of load shifting by their customers, including at critical periods when supply margins are tightest. If expectations are met regarding rising demand from the electrification of heating and transport, the price difference could increase. Moreover, if the share of wind generation on the system increases in line with the government's projections, then this intermittent generation will create additional opportunities to realise value in shifting consumption away from periods when margins are tighter.

3.18. Other regulatory reform is also helping to create the right environment for DSR. Earlier this year, we concluded our Electricity Balancing Significant Code Review, our review of the cash-out prices that parties pay for being in imbalance.<sup>7</sup> We decided to make these prices more 'marginal', including by calculating them using the most expensive action the System Operator takes to balance the system. This will make cash-out prices more reflective of underlying scarcity on the system, therefore improving price signals at times of system stress. This in turn improves the incentives on suppliers to invest in DSR.

3.19. We note the view that the introduction of a capacity market could depress peak prices. DECC has acknowledged this point. However, suppliers will make payment to capacity providers based on their share of demand at peak times during winter. The intention of this is to avoid distorting the incentives on suppliers to encourage load shifting away from peak at critical periods when supply margins are tightest, while minimising forecast risks to suppliers.

### **Potential for load shifting**

3.20. In our IA, we quantified the potential for consumers in Profile Classes 5-8 to respond to price signals by moving load to off-peak periods. We drew on studies commissioned by DECC and others to inform the assumptions that underpinned our analysis.

#### *Respondents' views*

3.21. Question four of our IA asked respondents if they agreed with our approach to quantifying the value of load shifting and load reduction. Of 13 respondents that answered this question, six agreed, including two independent suppliers and two DNOs. Three of these respondents said we had been conservative in estimating the potential benefits. One respondent did not express a clear view.

3.22. Three large suppliers disagreed with our approach and three others queried aspects of our analysis. These respondents raised three concerns about our estimates of the potential for load shifting among consumers in Profile Classes 5-8. These concerns were also raised in response to other questions, particularly question three. Respondents also discussed the potential for load shifting in response to

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<sup>7</sup> Our decision document can be found here: <https://www.ofgem.gov.uk/ofgem-publications/87782/electricitybalancingsignificantcodereview-finalpolicydecision.pdf>

questions one and 15, which asked for views on our approach to assessment and the results of our quantitative analysis respectively.

3.23. First, large suppliers argued that we had overestimated the amount of discretionary load among consumers in Profile Classes 5-8. These respondents argued that these consumers have limited discretionary load due to the nature of their business. This point was also raised by one independent supplier. Another large supplier also noted its survey of small and medium enterprises found that 50% are unwilling or unable to change how and when they use energy. The same respondent, commenting on our assumption that peak runs from 16.30 to 19.00 hours, said that their analysis of national demand data showed that around one third of the time the peak occurs at lunchtime. It argued that demand is unlikely to be shifted away from this lunchtime peak.

3.24. Second, five large suppliers argued that consumers in Profile Classes 5-8 have no appetite for DSR products, especially the more sophisticated products enabled by HH settlement. One respondent said that energy costs are not material enough to motivate consumers to engage in DSR. Others said that these consumers want simple tariffs. Four large suppliers also argued that, even among their existing HH customers, there is low demand for sophisticated tariffs. Linked to this point, one large supplier argued that the option to move to HH settlement voluntarily allows suppliers to meet the needs of those customers that want more sophisticated products.

3.25. Third, large suppliers argued that consumers in Profile Classes 5-8 do not have the capability to engage with DSR products. One respondent suggested that research conducted as part of our Retail Market Review found that small and medium-sized businesses are disengaged from the market. Three large suppliers argued that consumers in Profile Classes 5-8 do not have the resources (particularly energy management teams) that are necessary to realise the benefits of DSR. One large supplier said that few consumers will be able to engage in dynamic DSR, while one independent supplier said that consumers do not understand the benefits that can be realised from HH settlement.

3.26. Reflecting on the above points, one large supplier said that there is uncertainty around the assumptions we made on load shifting. Another large supplier said that the input ranges to our model should be wider to reflect this uncertainty.

#### *Ofgem response*

3.27. In our IA, we used the best evidence available to inform our assessment of the potential for load shifting. We consider that this evidence is sufficient for us to make reasonable assumptions to inform our quantitative analysis.

3.28. Studies commissioned by DECC and others have explored the discretionary load of non-domestic consumers. The estimates we made for our quantitative assessment were based on the findings of these studies. Some respondents identified types of businesses in Profile Classes 5-8 that have less discretionary load

than we assumed. However, the studies we used take account of how different types of businesses consume energy, including businesses in the retail sector. Therefore, we consider that our estimates of discretionary load across consumers in Profile Classes 5-8 adequately capture variations in businesses' use of energy.

3.29. We note the view that consumers in Profile Classes 5-8 are unlikely to shift load away from periods of peak demand when these periods fall at lunchtime. Peak demand for non-domestic consumers occurs at around 11.00 hours on a week day. However, our quantitative modelling assessed the potential for shifting load away from overall system peak. Our analysis shows this typically runs from 16.30 to 19.00 hours. The evidence base underpinning the assumptions we used in our model mostly considered the potential discretionary load of non-domestic consumers in this period.

3.30. The potential for load shifting depends on the uptake of DSR products as well as discretionary load. Some large suppliers indicated that consumers are not interested in DSR products. Research we commissioned found that consumers have a low level of awareness of DSR at present.<sup>8</sup> However, we expect P272 will address some of the barriers identified by those surveyed. This includes the lack of price signals and absence of offers from suppliers. As described above, P272 helps create the right environment for DSR by giving suppliers stronger incentives to develop and offer products that encourage load shifting. It also allows the full value of changes in consumption to be realised. Our quantitative modelling recognised that it may take time for consumers to engage with DSR, including identifying how they can adapt their electricity consumption. We staggered the realisation of the benefits we quantified, such that these benefits are not fully realised until four years after the implementation of P272 Alternative.

3.31. We do not agree that consumers in Profile Classes 5-8 are unable to engage with their consumption. Our 2013 quantitative research with business consumers found that most reviewed key aspects of their own supply arrangements on an annual basis, including their energy costs and consumption.<sup>9</sup> Our research also found that businesses seem to be making informed switching decisions. Moreover, Ofgem has taken steps to help micro-businesses engage in the market.<sup>10</sup> This includes introducing enforceable Standards of Conduct that require suppliers to treat micro business consumers fairly and mandating contract end dates on bills.

3.32. We also note that there is an active third party intermediary (TPI) market that could help consumers in Profile Classes 5-8 engage with DSR products. TPis are organisations that engage with domestic or non-domestic consumers to assist them with their energy supply needs. TPis can offer services to help consumers make

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<sup>8</sup> The research we commissioned from Element Energy can be found here: <https://www.ofgem.gov.uk/ofgem-publications/57014/demand-side-response-non-domestic-sector.pdf>

<sup>9</sup> The research we commissioned from Element Energy can be found here: <https://www.ofgem.gov.uk/ofgem-publications/85187/non-domquantfinalforpublication181213.pdf>

<sup>10</sup> Up to 60 per cent of sites in Profile Classes 5-8 could be micro-business consumers as defined by the electricity supply licence.

better choices about how they buy and use energy. We have consulted on introducing a TPI code of practice underpinned by a licence condition on suppliers to only work with TPIs signed up to the code. We expect the code to go live by winter 2015.<sup>11</sup>

### **Benefits from DSR**

3.33. In our IA, we argued that load shifting by consumers in Profile Classes 5-8 can lower bills, strengthen security of supply and help to connect wind generation to the network. We also noted that there is evidence to suggest that DSR can indirectly lead consumers to reduce load outright at peak times (in addition to shifting consumption to off-peak periods). We modelled how this could lower bills, reduce carbon emissions and improve air quality.

#### *Respondents' views*

3.34. Two large suppliers suggested that we had not correctly identified the benefits of DSR. In its response to question four, one respondent queried the potential for load shifting to reduce carbon emissions because consumers that shift load may switch to on-site generation. The same respondent also said in response to question five that the benefits of DSR come from shifting load from peak to off-peak periods. As such, it does not think DSR's value will increase over time from other forms of load shifting, for example to coincide with output from wind farms. In response to question four, another large supplier argued that businesses will incur costs in shifting load, making the benefits of DSR largely theoretical.

3.35. Responding to the same question, another large supplier queried the evidence base underpinning our assumption on the amount of load that would be reduced outright at peak.

#### *Ofgem response*

3.36. In our IA, we explained that DSR can help to accommodate increasing amounts of low-carbon generation. In particular, wind farms are less predictable than coal or gas generation. DSR products can help to manage this variability by rewarding consumers for increasing or lowering demand depending on weather conditions. We recognise that some consumers who take up these products will have on-site generation. However, others may not. For example, they may have on-site storage that allows them to change their consumption patterns. On balance, we consider that DSR can help reduce carbon emissions by enabling greater use of low-carbon forms of generation.

3.37. We disagree that the value of DSR is limited to shifting of load from peak to off-peak periods. As described above, DSR can also help to accommodate low-carbon

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<sup>11</sup> More information on Ofgem's TPI Programme can be found here: <https://www.ofgem.gov.uk/electricity/retail-market/market-review-and-reform/third-party-intermediaries-tpi-programme>

forms of generation. This is likely to become increasingly valuable with connection of larger volumes of such generation. This will also likely create more opportunities for consumers to shift their consumption away from times of system stress.

3.38. We note the view that businesses will incur costs to shift load. We consider that businesses are likely to take steps to shift load where they identify this lowers their overall costs. Moreover, in some cases they will incur no or limited costs in shifting load.

3.39. There is evidence to suggest from trials that DSR can indirectly lead consumers to reduce load outright at peak times.<sup>12</sup> For example, if they forego consumption rather than move it to other periods. For the purposes of quantifying the costs savings this could deliver, we estimated that, of the load that could be shifted at peak, between 12% and 20% is reduced outright. This is equivalent to 0.4% of the consumption of Profile Classes 5-8 at peak.

3.40. In our IA, we noted that there is limited evidence on which to base our assumption. However, a high-level assessment of the uses of electricity by non-domestic consumers suggests our assumption is not unreasonable. For example, some studies have identified that there is potential for lighting to contribute a significant proportion of flexible load through dimming or switching off of non-essential lights.<sup>13</sup> In such cases, consumption would be foregone. Changing technology is likely to create more of such opportunities for non-domestic consumers. However, other studies assume that lighting cannot provide flexibility. Taking account of the range of views, we consider that our assumption on the proportion of flexible load that would be reduced is reasonable.

### **Additional analysis**

3.41. In our IA, we explained that we adopted a conservative approach to valuing the cost savings from DSR. For example, we only considered load shifting from peak to off-peak periods. In addition, we did not assess the potential for the value of DSR to be higher at critical periods when supply margins are tightest or if expectations of more wind power and greater demand are met.

### *Respondents' views*

3.42. Question five asked for views on how we could quantify the DSR benefits that we had not already quantified. Four respondents to this question noted the difficulty of doing so. One DNO suggested that we assess how much existing HH consumers benefit from ToU tariffs. One large supplier recommended that we research other jurisdictions.

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<sup>12</sup> See for example: Owen, G, Ward, J and Pool, M, October 2012. *GB Electricity Demand – Context and 2010 Baseline Data*; or King, C and Delurey, D, March 2005. *Twins, siblings or cousins? Analyzing the conservation effects of demand response programmes*.

<sup>13</sup> Element Energy, July 2012. *Demand-side response in the non-domestic sector*.

3.43. Two large suppliers suggested additional analysis we could undertake in their responses to question four, which asked if respondents agreed with our approach to quantifying the value of load shifting and load reduction. One large supplier also recommended undertaking further consumer research on the potential for load shifting. Another large supplier suggested that we assess the response of existing HH consumers to price signals from Distribution Use of System (DUoS) charges. Both suggestions were also made by a different large supplier in response to question one.

*Ofgem response*

3.44. We note the suggestions of further work that we could undertake. Our analysis should draw on evidence that is applicable to the types of consumers in Profile Classes 5-8. For this reason, we are not convinced that examining the response of existing HH consumers would inform our impact assessment. We also consider that there is sufficient evidence on the potential for load shifting without the need to conduct further consumer research.

3.45. We remain of the view that our quantitative modelling underestimates the value of DSR. We did not undertake analysis to explore this further. Instead, we consider that comparing our analysis with studies commissioned by DECC on the value of DSR allows us to understand its potential to reduce overall electricity costs. For example, Pöyry found that by 2030, DSR could reduce overall electricity costs by £3 billion per annum.<sup>14</sup> A basic estimate puts the contribution of consumers in Profile Classes 5-8 at around £145 million per year in 2030 (based on this contribution being proportional to estimated 2030 market volumes).

3.46. Another study undertaken by Imperial College London with NERA Economic Consulting estimated that DSR could reduce balancing costs by between £500 million and £700 million per year in 2020.<sup>15</sup> By 2030, the system benefits generated by DSR per year range from £1.5 billion to £5.2 billion depending on connection of wind generation and the electrification of demand.

3.47. Our results differ significantly from those of Pöyry and Imperial College London because of differences in methodology. Our assessment does not take account of the potential for the generation mix and consumption patterns to change over time, for example from the connection of wind farms and electrification of heating and transport. These differences in approach underline that we have been highly conservative in estimating the value of DSR in the medium and longer term. P272 is an important step in helping to create the right environment for realising the potential benefits of DSR.

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<sup>14</sup> Pöyry, November 2010. *Demand side response: Conflict between supply and network driven optimisation.*

<sup>15</sup> Imperial College London and NERA Economic Consulting, August 2012. *Understanding the balancing challenge.*

## Improved demand forecasting

3.48. In our IA, we argued that P272 could improve the efficiency of balancing and strengthen competition by enabling suppliers to improve demand forecasting for consumers in Profile Classes 5-8. Respondents commented on our approach to quantifying the value of this impact and the implications for independent suppliers.

### Approach to quantifying the value of improved forecasting

3.49. The workgroup set up by the BSC Panel to assess the impacts of P272 agreed that suppliers can better forecast HH compared to NHH volumes. This is because HH consumers pick up less of the energy that is caused by mismatches between the amount of energy allocated through settlement and the volume that was used. The mechanism used to allocate energy in this way is called Grid Supply Point Group Correction Factor (GGCSF). Drawing on the workgroup's assessment, our IA considered how more accurate demand forecasting could reduce costs by improving the efficiency of balancing.

#### *Respondents' views*

3.50. Question six of our IA asked if respondents agreed with our approach to quantifying the value of improved demand forecasting. Of 12 respondents that answered this question, six agreed including two large suppliers, one independent supplier and two DNOs.

3.51. Four large suppliers did not agree with our approach. Of these respondents, one argued that the accuracy of demand forecasting may not improve in the short to medium term. It suggested this was because DSR would make demand more unpredictable. This point was also raised by two large suppliers that agreed with our approach and two large suppliers in their responses to other questions.

3.52. One large supplier said that improvements in forecasting would not be realised unless HH data is obtained daily. Another said that forecasting could become more accurate without P272 if suppliers use HH data to estimate consumption for NHH consumers. One large supplier argued that forecasting of demand for HH consumers has been easier historically because they were not subject to GGCSF. However, they noted this was due to change such that demand forecasting for these consumers could become more difficult in the future. The same respondent and one other suggested the benefits of any improvement in forecasting would be small as consumers in Profile Classes 5-8 make up a small proportion of overall consumption.

3.53. Two large suppliers also questioned our use of the workgroup's estimate that suppliers can achieve a 40% improvement in the accuracy of demand forecasting for HH compared to NHH consumers. One of these respondents suggested that demand forecasting for Profile Classes 5-8 may not be as accurate as for existing HH consumers. It also said that suppliers could face a higher imbalance risk if P272 is implemented, which would be priced into contracts with consumers.

*Ofgem response*

3.54. We consider that P272 enables suppliers to improve the accuracy of demand forecasting, which can help to lower bills by improving the efficiency of balancing.

3.55. We note that the BSC Panel recently decided that HH sites will not be subject to GGCSF. As set out in our IA, we consider that this makes it easier to forecast demand of consumers in Profile Classes 5-8 when they move to HH settlement. We note the view that suppliers can use HH consumption data to improve demand forecasting for NHH consumers. We consider suppliers are unlikely to obtain such data unless their customers are settled HH. This is because it is more expensive to obtain HH consumption data compared to cumulative meter readings.

3.56. Three respondents suggested that DSR could make HH demand more difficult to forecast in the short to medium term. As set out above, we anticipate P272 will strengthen the incentives on suppliers to encourage DSR among their consumers. In so doing, they will need to anticipate how their customers respond to price signals when purchasing energy. We note that suppliers offer DSR products to their existing HH customers and can manage effectively the risk to forecasting accuracy from load shifting. Therefore, we have no reason to believe that they cannot do the same for consumers in Profile Classes 5-8, who pose less of a risk given they use significantly less energy per site than existing HH consumers.

3.57. Two respondents queried our use of the workgroup's estimate of the improvement that suppliers can achieve in demand forecasting. We consider that it is reasonable to use this estimate given it was agreed by the workgroup based on discussions with suppliers' forecasting experts.

**Impact on independent suppliers**

3.58. Our IA considered the impact on independent suppliers' demand forecasting if P272 is implemented. We suggested that P272 could reduce imbalance risk and hence the costs of market entry by enabling all suppliers to forecast demand more accurately. At the same time, we considered whether the need to invest in forecasting systems could deter new entrants.

*Respondents' views*

3.59. Question seven of our IA requested views on whether the costs of investing in forecasting capability for HH demand could impact disproportionately on independent suppliers or new entrants. Of nine respondents that answered this question, six argued it did not.

3.60. One large supplier suggested that inaccurate forecasting could have a more significant impact on those with smaller portfolios. Another large supplier made a similar point in response to question two, which asked if there are any additional, material impacts that we should consider. However, two independent suppliers

stated that they are capable of forecasting HH demand, while another independent supplier argued that the investment would quickly be recouped. One large supplier and one supplier agent also argued that independent suppliers and new entrants are at an advantage because they do not have legacy systems that require upgrading.

*Ofgem response*

3.61. We agree with the majority of respondents to consultation that the costs of investing in forecasting capability will not impact disproportionately on independent suppliers. We note that none of the independent suppliers that responded to our consultation expressed concerns and that many are active in the HH market at present. Moreover, we consider that the impact of GGCSF is more difficult to predict for new entrants that are less familiar with historical trends. As consumers in Profile Classes 5-8 will no longer be subject to this mechanism when they move to HH settlement, P272 can reduce imbalance risk for new entrants by enabling more accurate demand forecasting.

## **Allocation of energy to HH and NHH consumers**

3.62. As described above, GGCSF allocates any shortfall or excess energy to NHH consumers. P272 will reduce the number of NHH consumers over which this energy is spread.

*Respondents' views*

3.63. In response to question two, one large supplier argued that GGCSF may need to be reviewed if P272 is implemented. One independent supplier also argued that the impact of GGCSF on the remaining NHH consumers had not been properly considered. They argued that NHH consumers could pick up more of the energy (and hence costs) allocated through this mechanism than previously if Profile Classes 5-8 move to HH settlement.

*Ofgem response*

3.64. We do not consider that NHH consumers will be materially impacted by P272 as a result of GGCSF. Profiling is the biggest driver of the mismatch between the energy that is allocated through settlement and the amount that is consumed.<sup>16</sup> P272 would remove profiling for consumers in Profile Classes 5-8, thereby helping to reduce this mismatch and hence the energy that is allocated through GGCSF. We also note that the BSC Panel is able to change the proportion of energy that is allocated to the NHH and HH markets through GGCSF. We recommend that this is kept under review following the implementation of P272 Alternative.

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<sup>16</sup> See Elexon analysis at: [http://www.elexon.co.uk/wp-content/uploads/2013/08/PSRG27\\_02\\_Contributing-Factors-to-GSPGCFv1.0.pdf](http://www.elexon.co.uk/wp-content/uploads/2013/08/PSRG27_02_Contributing-Factors-to-GSPGCFv1.0.pdf)

## 4. Cost savings in managing the settlement process

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4.1. In our impact assessment (IA), we argued that P272 would save suppliers money in managing some aspects of the settlement process. We identified that these savings would come from lower supplier agent charges for existing HH consumers, better data quality, faster settlement and lower administration charges. This chapter explains how we updated our analysis to take account of respondents' views.

### **Lower supplier agent charges for existing HH consumers**

4.2. Suppliers contract with supplier agents for the collection and preparation of consumption data for settlement. In our IA, we argued that P272 would mean they pay less for these services for existing HH consumers.

#### *Respondents' views*

4.3. Question eight of our IA asked respondents if they agreed we had correctly identified the cost savings that suppliers could realise in managing the settlement process. Of the 11 respondents that commented on the potential for lower supplier agent charges for existing HH consumers in response to this question, three respondents, including one large supplier and one independent supplier, agreed with our assessment. One large supplier also agreed that charges for existing HH consumers could fall but argued that this would be offset by an increase in charges for consumers in Profile Classes 5-8.

4.4. Seven respondents disagreed with our assessment. One supplier agent challenged our argument that P272 could reduce charges by encouraging market entry. They argued that this may not happen because new entrants could be deterred by the expectation of lower returns. Two large suppliers argued that any cost savings would take time to emerge. Another suggested that any reduction in charges will be subject to commercial negotiations between suppliers and supplier agents, while one also argued that this would depend on the extent to which existing systems and processes can be used for consumers in Profile Classes 5-8.

4.5. In response to question eight, three large suppliers, one independent supplier and one supplier agent also commented on the costs of supplier agent services for Profile Classes 5-8. The suppliers argued that these charges would be higher if P272 is implemented, offsetting any saving for existing HH consumers.

*Ofgem response*

4.6. We consider that P272 will reduce the charges suppliers pay for collecting and preparing consumption data to settle existing HH consumers. Where the consumer pays for these services directly, we also expect the cost to fall.

4.7. P272 will more than double the size of the HH market, creating economies of scale for supplier agents. Existing HH sites and Profile Classes 5-8 will both be subject to similar requirements as defined in the BSC. This allows supplier agents to spread their fixed costs over a larger number of sites, reducing their costs per customer. We would expect these savings to be reflected in lower charges for existing HH customers, as agreed through commercial negotiations between suppliers and supplier agents.

4.8. We note the view of two large suppliers that any savings will take time to be realised. While P272 will be implemented by 1 April 2016, we recognise that savings may not immediately lead to lower charges, particularly for HH customers that have contracted directly with supplier agents. We understand that, unlike suppliers, consumers typically have fixed-term contracts with supplier agents. This may prevent them from finding better deals in the short term, for example if they need to pay fees for terminating contracts early. As such, we revised our quantitative analysis such that the realisation of lower charges for existing HH consumers is staggered for two years after the implementation of P272. This reflects our understanding of the average length of these contracts.<sup>17</sup> Our analysis concluded that lower supplier agent charges for existing HH customers save around £27.8 million (Net Present Value (NPV)) over the modelling period.

4.9. Some respondents argued that any savings in supplier agent charges for existing HH consumers would be offset by higher charges for consumers in Profile Classes 5-8. In our IA, we estimated the incremental costs of charges for consumers in Profile Classes 5-8. This is discussed further in chapter five.

**Data quality**

4.10. In our IA, we argued that using HH data reduces the likelihood of errors that reduce the quality of consumption data that is used in settlement. Moreover, when errors do arise, they are easier to detect and remedy. We quantified this benefit by estimating the reduction in the size of data-quality teams. We assumed that these teams would be reduced by between 50 and 60 employees, based on our understanding of their typical size.

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<sup>17</sup> As described in chapter five, we issued an information request on contracts that supplier agents hold directly with consumers in Profile Classes 5-8. This found that two thirds of these contracts expire by end of 2016. While our analysis on lower supplier agent charges is concerned with existing HH consumers, we consider it is not unreasonable to assume that the contracts these consumers hold with supplier agents are similar in duration to those held by consumers in Profile Classes 5-8.

*Respondents' views*

4.11. Question nine of our IA asked respondents if they agreed with our assumptions about the typical size of data-quality teams. Some respondents also commented on our analysis in their response to question eight. These reflected their responses to question nine and are not covered separately below.

4.12. Of 12 respondents that answered question nine, four agreed with our assumptions, including one large supplier and two independent suppliers. However, the large supplier argued that resources would be redistributed to other parts of the business if they were not needed to manage data quality for Profile Classes 5-8.

4.13. Seven respondents disagreed with our assumptions, as did one independent supplier that did not respond to question nine. One large supplier and one independent supplier suggested that we had overestimated the size of their data-quality teams. Four large suppliers argued that there would need to be an increase in the size of HH data quality teams. Of these respondents, two argued that this increase would offset any reduction in the size of NHH data quality teams. Respondents argued that HH data quality teams would increase in size because errors still arise in the HH market and because consumption data is more carefully scrutinised.

*Ofgem response*

4.14. While some respondents agreed with our approach to quantifying the cost savings from improved data quality, six argued we had overestimated the reduction in the overall size of data quality teams. While the size of data quality teams will vary across suppliers, we do not consider that our estimate of the cost savings from a reduction in the number of employees is unreasonable. In particular, we saw no evidence from responses to change our view that errors would be less likely if Profile Classes 5-8 were settled using HH consumption data. Nor has anything changed our view that any errors that do arise will be easier to identify and resolve.

**Faster settlement**

4.15. In our IA, we argued that P272 would lead to cost savings by giving suppliers earlier financial certainty on their imbalance charges for consumers in Profile Classes 5-8. This is because suppliers would read their meters more frequently, such that a greater proportion of energy volumes would be settled on meter readings at the first settlement run. In quantifying this benefit, we assumed, based on historical meter reading cycles, that meters for these consumers are mostly read at the end of each month.

*Respondents' views*

4.16. In response to question eight, two independent suppliers and one supplier agent agreed with our analysis. Two of these respondents noted that the benefit of

earlier financial certainty was particularly important to independent suppliers. Three large suppliers disagreed with our analysis. One of these argued that there is no material movement in imbalance charges for Profile Classes 5-8 as estimates are replaced with meter readings over time. Another argued that there are more important drivers of credit cover, such as regulated revenue. The third argued that the benefit could be achieved without P272.

4.17. Question 10 of our IA asked respondents if they agreed that meters in Profile Classes 5-8 are generally read at the end of each month. Of 15 that answered, eight agreed: two large suppliers, three independent suppliers, one supplier agent and two DNOs. One large supplier partially agreed, noting that the meter reading is not always successful.

4.18. Six respondents disagreed with our assumption. One independent supplier and one large supplier stated that meters for consumers in Profile Classes 5-8 are generally read on the first day of the month or within the first few days. Another large supplier said it tries to smooth out meter readings over the month. Two supplier agents also said meters are read more frequently than monthly. However, one noted that these readings are bundled together into a single meter register read for the month for billing and settlement purposes.

#### *Ofgem response*

4.19. We remain of the view that faster settlement can deliver cost savings by reducing financial uncertainty for suppliers. While two large suppliers questioned the materiality of the impact, this is reflected in our quantitative assessment which estimated a small cost saving over the modelling period. Moreover, we note that other respondents emphasised the particular benefits of faster settlement for independent suppliers. This supports our view that P272 can reduce the risks of entering the market, which in turn can improve efficiency from stronger competition.

4.20. We do not consider that the benefits from faster settlement will be achieved without P272. P272 will require suppliers to settle 99% of energy of consumers in Profile Classes 5-8 on metered consumption data at the second settlement run. Without this requirement, we do not consider that suppliers will read meters more frequently than today because of the higher costs they incur.

4.21. Most respondents that responded to question 10 agreed with the assumption underpinning our quantitative analysis that meters for consumers in Profile Classes 5-8 are generally read at the end of each month. Two of those that disagreed with our analysis said these meters are read at the beginning of the month. This would not materially affect our analysis because our assumption largely holds that, for these meters, days towards the middle and end of the month are generally settled on actual meter readings at the first settlement run while those nearer the start are not. Taking account of these responses, we consider that our quantitative analysis on the impact of faster settlement is robust.

### **Administration costs**

4.22. Elexon’s costs in managing the BSC are paid for by signatories. In our IA, we argued that the costs of profiling for consumers in Profile Classes 5-8 could be reduced if P272 is implemented. This is because the load profiles for these consumers would be frozen.

#### *Respondents’ views*

4.23. The four respondents that commented on lower profiling costs in response to question eight all agreed with our assessment. However, in response to question two, two large suppliers argued that administration costs could increase for other reasons. They noted that the framework for technical assurance of metering set out in the BSC includes site visits to a sample of HH sites. The costs of this framework could increase if P272 is implemented because more sites may need to be visited.

#### *Ofgem response*

4.24. Respondents to consultation confirmed our view that P272 can reduce profiling costs. However, we note the views of two large suppliers that the costs of the technical assurance framework could increase. At present, the costs of this framework are small in the context of the benefits that P272 can deliver. Moreover, industry has the tools available to make changes to this framework if appropriate.

## 5. Implementation costs

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5.1. In our impact assessment (IA), we assessed the upfront and ongoing costs that suppliers and DNOs could incur as a result of P272. We also identified costs that might fall directly to consumers. In this chapter, we explain how our assessment of these costs took account of responses to consultation.

### Costs for suppliers and DNOs

5.2. In assessing the costs incurred by suppliers and DNOs, we used information gathered as part of the workgroup’s assessment of P272. We explained that we had estimated costs for suppliers that did not provide information to the workgroup, including all independent suppliers.

#### *Respondents’ views*

5.3. Question 11 of our IA asked if respondents agreed with our approach to quantifying the costs of P272. Of 14 respondents that answered this question, eight agreed including four DNOs, two independent suppliers and one large supplier. The latter stated that our modelling should allow for the costs of managing the customer experience.

5.4. Four large suppliers did not agree with our approach. Two large suppliers that responded to the workgroup’s consultation provided revised estimates of their upfront costs. Another large supplier argued that our estimate of ongoing costs was too low based on quotes it had received from supplier agents for HH services. Two large suppliers also suggested that some costs had not been considered, including the costs of varying supply contracts and the process for transferring customers from NHH to HH settlement. One of these also argued in response to question two that upfront costs had been underestimated.

5.5. Consumer Futures (now Citizens Advice) did not respond to question 11 but did raise concerns that the higher costs of HH settlement could outweigh the benefits of demand-side response. In response to question two, two large suppliers commented on the requirement introduced by P272 to settle 99% of energy of consumers in Profile Classes 5-8 on metered consumption data at R1. They said that meeting this requirement could be challenging and potentially costly if suppliers need to upgrade communications technology.

5.6. Question 12 of our IA asked for evidence from independent suppliers on the costs they would incur if P272 is implemented. Five respondents answered this question, of which three were independent suppliers. None provided information that could inform our quantitative assessment. One supplier agent also argued that P272 could reduce backbilling, which can be significant for consumers in Profile Classes 5-8.

*Ofgem response*

5.7. We consider that the information gathered by the workgroup provides a reasonable view of the implementation costs of P272 for suppliers and DNOs. This includes costs relating to the transfer of consumers from NHH to HH settlement.

5.8. Our IA set out the methodology we used to estimate upfront and ongoing costs for suppliers and DNOs, based on the information gathered by the workgroup. We consider that this methodology is appropriate for estimating the costs of P272 for these market participants. Our methodology was informed by discussions with the large suppliers on their submissions to the workgroup.

5.9. For suppliers' upfront costs, we fully included in our model the estimates provided by the five large suppliers to the workgroup. For those that did not respond, we estimated the range of upfront costs that they could incur, based on the information provided by the large suppliers.

5.10. In updating our analysis, we did not change our methodology, but did include the revised estimates submitted by two large suppliers. Taking the actual costs of those suppliers that provided information, plus our estimate of the range of costs for suppliers that did not, we estimated that suppliers of consumers in Profile Classes 5-8 would incur costs of between £18 million and £23 million. To be clear, the lower end of this range includes in full the costs provided by those suppliers that did provide information. Using this range, our model estimates that suppliers will incur average upfront costs of around £19 million (NPV).

5.11. Our estimate of ongoing costs for suppliers was also based on the information provided by the large suppliers. This showed that ongoing costs would differ by supplier, particularly for meter maintenance, data collection and data aggregation services. Suppliers can procure these services competitively from supplier agents. We remain of the view that competitive pressure will drive suppliers to implement P272 as efficiently as possible, including by improving their procurement processes to obtain supplier agent services. For this reason, we have made no change to our approach to estimating ongoing costs for suppliers.

## **Direct costs for consumers**

5.12. Our IA did not quantify two costs that the workgroup thought might fall directly to consumers. These come from consumers qualifying for the Carbon Reduction Commitment (CRC) and contracts that they hold with supplier agents.

*Respondents' views*

5.13. In response to question two of our IA, one large supplier argued that our assessment should include the costs of the CRC. It argued that this could be a material impact.

5.14. Question 14 of our IA asked if consumers would incur costs from terminating contracts that they hold with supplier agents. We also requested information that would help us to assess these costs. Of nine respondents that answered this question, seven suggested that consumers could incur costs. Two large suppliers, one independent supplier and one supplier agent argued that termination fees would be subject to contractual terms. One large supplier argued that our IA must assess this cost and recommended that we consult consumers directly. One independent supplier estimated the fees for terminating a meter operator contract. One supplier agent suggested fees could also be incurred if contracts are amended.

*Ofgem response*

5.15. We note the comment that our IA should include the costs of the CRC. This would not provide a balanced view of the impact of P272 potentially increasing the number of businesses that are eligible for the scheme from Phase 3 onwards.<sup>18</sup> Both costs and benefits would need to be considered. DECC's IA<sup>19</sup> on the CRC shows that a business with a HH settled meter may incur costs to report its energy supplies and, if it qualifies for the scheme, to buy allowances to cover its carbon emissions. However, DECC's IA also shows that the scheme can deliver significant benefits, including through energy efficiency measures that can help to reduce bills.

5.16. Notwithstanding this, we note that DECC has recognised that sites moving to HH settlement (as part of the roll-out of advanced metering to Profile Classes 5-8) could increase the number of organisations that are eligible for the scheme. DECC plans to review the CRC fully in 2016. To inform this review, DECC is currently evaluating all aspects of the scheme, including the qualification criteria.

5.17. Respondents to our consultation did not provide sufficient information to enable us to take a view on the costs that consumers could incur directly from the contracts that they hold with supplier agents. As respondents thought that these costs could be material, in July 2014 we issued information requests to suppliers of consumers in Profile Classes 5-8 and independent supplier agents. We asked for the number of sites where consumers have contracted directly with suppliers and the expiry date of these contracts. We also requested information on the fees that would be charged if these contracts are terminated early or amended.

5.18. We received responses from 14 suppliers, responsible for supplying nearly all sites in Profile Classes 5-8. These suppliers provided information on the number of sites where customers have contracted directly with supplier agents. However, most said they were unable to comment on the length of these contracts or termination and amendment fees. Ten supplier agents also responded. Five of these provided information on length of contracts, and termination and amendment fees.

5.19. The information we received allowed us to take a view on the costs that consumers could incur from the termination or amendment of contracts they hold

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<sup>18</sup> Phase 3 of the CRC runs from 2019/20 to 2023/24.

<sup>19</sup> DECC, February 2014. *Finalising CRC simplification: treatment of renewable energy & the metallurgical and mineralogical sectors.*

with supplier agents. Some respondents to our information request also commented on the higher costs of supplier agent services for HH sites. The higher costs for all sites of these services are included in our estimate of the higher ongoing costs for suppliers of implementing P272.

5.20. Termination could occur if the consumer has contracted for services that its supplier agent is not qualified to provide in the HH market. Two supplier agents that offer data processing and data aggregation services to consumers in Profile Classes 5-8 are not currently qualified to provide these services to HH consumers. In estimating the costs to consumers in Profile Classes 5-8, we only considered contracts that will not expire before 1 April 2016. We found that only a small number of sites are at risk of termination fees. These fees may not be incurred if the supplier agent decides to qualify for HH settlement to keep its existing customers. Moreover, we estimate that termination fees are small in the context of a typical annual electricity bill for a consumer in Profile Classes 5-8. Our analysis suggests that termination fees for a site could be up to 1.3% of the weighted average annual bill for a site in Profile Class 5.

5.21. Contracts may need to be amended because the service that the supplier agent provides for settlement purposes would change if P272 is implemented. In such scenarios, a fee may be charged for amending the contract. As with termination fees, we only assessed contracts that will not expire before 1 April 2016. Contracts that expire before this date will not need to be amended and hence should not incur amendment fees. We also took the average of the fees that supplier agents said they might charge for amending contracts. We found that the total cost of amendment fees could be up to £467,000. As with termination fees, we estimate fees are small in the context of a typical annual bill. Moreover, the costs are not material in the context of the overall benefits of P272.

5.22. We also anticipate that we have overestimated the costs for consumers from amendment fees. This is because most supplier agents put forward strong reasons for not expecting to levy such fees. In the context of competition, one supplier agent argued it is in their commercial interests not to levy amendment fees to avoid damaging their relationship with the customer. Two supplier agents said that they do not charge amendment fees, while another said they could be avoided depending on the process suppliers use to move their customers from NHH to HH settlement. Two supplier agents also argued that the services provided to the energy consumer will not change, so it is the contract between the supplier agent and the supplier that may need to be amended.

## 6. Results of quantitative analysis

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6.1. As part of our impact assessment (IA), we quantified some of the impacts of P272. For those impacts that we quantified, we found that P272 is revenue neutral for consumers. In this chapter, we explore respondents' views on the results of our quantitative analysis and present our updated results.

### *Respondents' views*

6.2. Question 15 of our IA asked for comments on the results of our quantitative analysis. Of 14 respondents that answered this question, one large supplier, one supplier agent and one DNO said that the quantitative analysis was reasonable. The large supplier also noted that the analysis showed a wide span of results, which appeared to reinforce the conclusions of the BSC Panel that the benefits were uncertain. One supplier agent and one independent supplier agreed that our modelling was conservative in that the benefits are underestimated. This independent supplier also said that the benefits to competition could be significant but were difficult to quantify.

6.3. Commenting on the results of our modelling, one large supplier argued that the cost-benefit analysis does not demonstrate a clear benefit to the industry or the consumer. Another large supplier argued that the results are highly sensitive to the cost savings delivered by DSR and improved forecasting.

6.4. Some large suppliers also commented on the inputs to our quantitative analysis in response to question 15. For example, they queried our estimates of the costs of implementing P272 and the potential for DSR. These comments reflected their responses to other consultation questions and are addressed in the relevant chapters of this document.

### *Ofgem response and updated results*

6.5. We consider that our IA provides the evidence we need to take an informed decision on P272. Our quantitative assessment of some of the impacts of P272 suggests that it is broadly revenue neutral on average over the modelling period. However, we did not quantify all potential benefits. In the context of a competitive market, it is inherently difficult to quantify the innovation and full range of benefits that P272 may drive. Therefore, in our IA, we identified and assessed in qualitative terms the areas where we saw scope for wider benefits. As described in chapter three, we also undertook desk research to inform our assessment of the DSR benefits that we did not quantify.

6.6. Many respondents to the consultation commented on the inputs to our quantitative assessment of P272. The relevant chapters in this document have considered these points and explained how we updated our analysis, including our quantitative assessment where relevant. Having considered the consultation

responses as set out in the earlier chapters, we consider our approach to be a conservative and appropriate assessment. That said, we have made two changes to the assumptions used in our quantitative modelling:

- staggered the realisation of lower supplier agent charges for existing HH consumers so that full benefits will be realised in 2018
- updated the upfront costs for suppliers of implementing P272 to take account of revised submissions from two large suppliers.

6.7. The other assumptions and inputs to our model remain the same to ensure comparability between our original and updated results. The modelling period is also unchanged – 20 years – and runs from 2013 to 2032. No costs are incurred until April 2014 and no benefits are realised until April 2016.

6.8. Table 1 below presents our updated assessment of the NPV for each of the quantified impacts in the base case. Numbers represent the average of 1,000 runs of the model.

*Table 1 – Updated results of quantitative assessment of impacts*

Impact	Average £m NPV	
	Original	Updated
Shifting of load from system peak to off-peak periods	55.1	51.1
Permanent reduction in consumption at peak	10.7	10
Better forecasting of demand	9.8	9.5
Lower supplier agent charges for existing HH consumers	31.2	27.8
Reduction in size of data quality teams	17.6	14.7
Value of improved cash flow from faster settlement	1.0	0.9
Lower administration costs from 'freezing' of Profile Classes	0.4	0.3
Upfront costs for suppliers of implementing P272	-23.9	-18.7
Ongoing costs for suppliers of implementing P272	-93.3	-86.9
Upfront costs for DNOs of implementing P272	-1	-0.8
Ongoing costs for DNOs of implementing P272	-7.3	-6.8
<b>Total</b>	<b>0.4</b>	<b>1.15</b>

6.9. Table 1 does not include the costs that consumers may incur directly as a result of P272 from termination or amendment fees for the contracts that they hold with supplier agents. We considered these in chapter five. We found that the costs were not material in the context of the overall costs of P272. For this reason, we did not include them in the model. However, we did take account of these costs in reaching our decision on P272 Alternative.

## 7. Interactions with other parts of the regulatory framework

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7.1. In our impact assessment (IA), we identified interactions with two parts of the regulatory framework that lie outside the BSC: the supply licence condition relating to the roll-out of advanced meters and the arrangements governing Distribution Use of System (DUoS) charging. This chapter responds to the points raised by respondents on these interactions.

### **Interactions with the supply licence**

7.2. Standard Licence Condition (SLC) 12 of the electricity supply licence sets obligations for the roll-out of advanced meters to consumers in Profile Classes 5-8. In our IA, we considered the interactions between this licence condition and P272. We noted that the obligation on suppliers to ensure that the consumer has timely access, on request, to half-hourly (HH) data provided by an advanced meter would fall away if P272 is implemented. We highlighted our intention to consult on the impact on consumers should this occur.

### *Respondents' views*

7.3. We did not ask for views on the interactions between P272 and the supply licence. However, three large suppliers identified issues:

- One argued that SLC 7A prevents suppliers from unilaterally changing contract terms for micro-businesses. As such, suppliers will need to absorb the costs of P272 if it is implemented before contracts expire.
- One large supplier said that it was not clear whether P272 would capture sites that do not have an advanced meter installed despite taking all reasonable steps.
- Another large supplier suggested that there could be a clash between P272 and SLC 39, which requires that advanced meters are replaced with smart meters by the end of 2020. This is because smart meters do not currently meet the standards for HH settled meters prescribed by the BSC.

### *Ofgem response*

7.4. We consider each of the interactions between P272 and the supply licence below. None prevents implementation of P272.

7.5. On 14 December 2012, we consulted on the obligation suppliers have to ensure that the consumer has timely access to the HH consumption data stored on their meter.<sup>20</sup> All respondents to this consultation agreed with our initial view that, where the obligation does not apply, suppliers are likely to continue providing HH consumption data to their customers on request. We decided not to amend SLC 12 to take account of the potential for consumers in Profile Classes 5-8 to move to HH settlement, including if P272 is implemented.<sup>21</sup> However, if evidence arises that suggests consumers are not receiving timely access to their data, on request, we would take appropriate action to address the situation.

7.6. SLC 7A prevents the supplier from varying or terminating a fixed-term contract with a micro-business consumer on the grounds that the consumer no longer satisfies the definition of a micro-business consumer as set out in the supply licence. We do not consider that it creates an issue for suppliers in how they manage the contracts they have with customers when implementing P272. This is because changes to contractual terms as a result of P272 are unlikely to be related to whether a consumer meets the definition of a micro-business consumer.

7.7. The legal text for P272 states that, where the supplier is under an obligation in its supply licence to install an advanced meter under SLC 12.18, the advanced meters installed in accordance with SLC 12.18 should be settled HH. This obligation is subject to an all reasonable steps test. Where suppliers have not installed an advanced meter at a site in Profile Classes 5-8 despite taking all reasonable steps, they would not be required to settle this site HH.

7.8. The definition of advanced meter makes clear that it is a meter installed in accordance with SLC 12.18. The obligation at SLC 12.18 only attaches to meters in Profile Classes 5-8 (as per SLC 12.17). SLC 39 sets out the obligations on suppliers to roll out smart meters by end of 2020. This includes obligations to replace advanced meters with smart meters in defined circumstances. These obligations apply to sites in Profile Classes 1-4 only. Therefore, there is no interaction with P272.

### **Interactions with distribution charging**

7.9. In our IA, we recognised that there is not currently a DUoS HH tariff designed for consumers in Profile Classes 5-8. As a result, these consumers may not receive appropriate price signals through DUoS charging. We said that we would monitor progress of work to address this issue and, in reaching a decision on P272, take account of any further developments in this area.

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<sup>20</sup> Our open letter consultation can be found at: <https://www.ofgem.gov.uk/ofgem-publications/84968/twoyearinspectionopenletterfinal.pdf>

<sup>21</sup> Our decision letter can be found at: <https://www.ofgem.gov.uk/ofgem-publications/87851/timelyaccesstodatadecisionletterfinal.pdf>

*Respondents' views*

7.10. While we did not ask a specific question, more than half of respondents emphasised the links between DUoS charging and P272, including larger and independent suppliers, DNOs and Consumer Focus (now Citizens Advice). Some argued that P272 would increase DUoS charges for Profile Classes 5-8. Some also emphasised that, if P272 is approved, DUoS charges for consumers in Profile Classes 5-8 will be billed on a site-specific rather than an aggregate basis. These respondents suggested that P272 could be implemented more efficiently if market arrangements allowed for the aggregation of DUoS bills for some or all consumers in Profile Classes 5-8.

*Ofgem response*

7.11. Respondents to consultation reinforced our view that our decision on P272 should take account of ongoing changes to DUoS charging arrangements. To allow us to do so, on 6 February 2014 we directed the BSC Panel to consult on a revised proposed implementation date for P272 Alternative. Following consultation with stakeholders, the BSC Panel unanimously agreed a revised proposed implementation date for P272 Alternative of 1 April 2016.

7.12. On 15 October 2014, we approved DCUSA Change Proposal 179 ('DCP179') and BSC Modification Proposal 300 ('P300'). Together, these changes address the concerns raised by respondents. DCP179 introduces new HH DUoS tariffs, including for consumers in Profile Classes 5-8. P300 allows for the aggregation of DUoS bills for some of these consumers.

## 8. Timing of implementation

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8.1. In our impact assessment (IA), we noted the proposed timeframes for implementing P272 and asked if it could be delivered faster if approved. We later asked the BSC Panel to consult on a revised proposed implementation date for P272 Alternative to allow our decision to take account of ongoing changes to Distribution Use of System (DUoS) charging arrangements. In this chapter, we consider the views that were raised in response to our consultation and that of the BSC Panel.

### *Respondents' views*

8.2. Question 16 of our IA asked if it would be possible to implement P272 in less than 14 months. Of 16 respondents that answered this question, three agreed that this would be possible. Of these, one stated that a longer lead time would be preferable.

8.3. Nine respondents disagreed. Eight respondents, including four large suppliers and two DNOs said that the lead time cannot be shortened. Although not in response to question 16, one large supplier argued that it would not be possible to implement P272 Alternative before the proposed implementation date of 1 April 2015. One independent supplier also expressed concerns.

8.4. The main reasons put forward to explain these views were largely the same. They were that:

- changes would be required to DUoS charging arrangements
- the Change of Measurement Class (CoMC) process, which is used to transfer consumers from NHH to HH settlement, is time consuming
- time is required to make changes to systems
- time is needed to engage customers and manage changes to contracts, for example through an awareness campaign
- there is already a busy schedule of regulatory change.

8.5. Five respondents also argued that there could be benefits from delaying implementation of the modification. Some of these comments were in response to questions other than question 16. One large supplier suggested that this could avoid interrupting customer contracts, while three others said there could be potential synergies with the roll-out of smart metering including the establishment of the Data and Communications Company. One large supplier and Consumer Futures (now Citizens Advice) also argued that HH settlement of Profile Classes 5-8 should be

considered as part of the Smarter Markets Programme. Another large supplier also argued that it would be preferable to take a holistic approach to HH settlement that covers all NHH consumers because this would minimise system costs.

#### *BSC Panel consultation*

8.6. On 1 August 2014, the BSC Panel consulted on a revised proposed implementation date of 1 April 2016. Of 17 respondents to the BSC Panel's consultation, most agreed that P272 should be implemented on 1 April 2016.

8.7. However, four large suppliers and two independent suppliers disagreed. Similar to the points raised in response to our IA consultation, they argued that more time was needed to allow upgrades to systems, to avoid interruptions to customer contracts and in the context of other significant regulatory changes. One large supplier also suggested that sites in Profile Classes 5-8 with whole-current meters cannot be moved to HH settlement until P300 is implemented on 5 November 2015. They argued that the CoMC process is not robust enough to let them move these customers to HH settlement by 1 April 2016. Further details on the link between P300 and P272 are provided in chapter seven. Three respondents suggested alternative approaches to implementation, including defining an implementation date after DCP179 and P300 are in place or transitioning customers to HH settlement on expiry of their contract.

#### *Ofgem response*

8.8. One of the main reasons that respondents to our IA consultation expressed concerns around the timing of P272 was that changes to DUoS charging arrangements had not been agreed. As we note in chapter seven, we have approved DCP179 and P300, which together address these concerns.

8.9. We consider that the revised proposed implementation date for P272 gives enough time for market participants to implement the modification. The publication of our decision letter on P272 on 29 October 2014 gives a longer lead time for implementing system and process changes, plus consumer engagement, than was recommended by the workgroup.

8.10. Depending on how suppliers implement P272, some consumer supply contracts may be interrupted. In our 2013 quantitative research, most business electricity consumers said they had a fixed-term contract and the most common duration was one (27%) or two (30%) years. Two-year contracts signed recently may be interrupted. However, we would not expect one-year contracts to be interrupted. This also applies to those contracts of less than one year or of no fixed duration (5% and 10% of electricity consumers surveyed respectively). On balance, we consider that a minority of the supply contracts of consumers Profile Classes 5-8 will be at risk of interruption if P272 is implemented by 1 April 2016.

8.11. Some sites with whole-current meters in Profile Classes 5-8 will not be able to access the new HH DUoS tariffs until P300 is implemented. As such, we would not expect suppliers to move these sites to HH settlement until after 5 November 2015. However, this does not apply to sites with current-transformer meters. These sites can be moved to HH settlement after DCP179 is implemented on 1 April 2015. We also note that the industry has recently taken steps to improve the CoMC process.<sup>22</sup> At the same time, the FMR for P272 sets out measures to help the industry manage the transition of consumers from NHH to HH settlement. For example, the Performance Assurance Board will be responsible for identifying constraints based on suppliers' transition plans. We consider that, taken together, these measures mitigate concerns relating to the transfer of all sites, particularly those with whole-current meters, by 1 April 2016.

8.12. We recognise that the industry is managing significant regulatory change at present. However, only one respondent to the BSC Panel's consultation argued that this would prevent them from implementing P272 by 1 April 2016. Moreover, we consider that timely implementation of changes to industry codes (including the BSC) is essential to enable consumers to realise the benefits of advanced meters. On balance, we consider that other regulatory change is not a reason to delay implementation of P272. Given the need for timely implementation to realise benefits, we also do not consider that alternative approaches are appropriate.

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<sup>22</sup> The improvements to the CoMC process will be delivered through BSC Change Proposal 1409, which will be implemented on 25 June 2015.

## Appendix 1 – List of respondents to consultation

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This appendix lists the stakeholders that responded to our impact assessment consultation. All responses have been published on our website ([www.ofgem.gov.uk](http://www.ofgem.gov.uk)).

	Name
1	British Gas
2	Consumer Futures
3	Co-operative Energy
4	E.ON
5	EDF
6	Electralink
7	Elexon
8	Electricity North West
9	G4S
10	GDF Suez
11	Haven Power
12	National Grid Electricity Transmission
13	Northern Powergrid
14	Npower
15	Scottish Power
16	Siemens
17	Smartest Energy
18	SSE
19	TMA Data Management
20	UK Power Networks
21	Utilita
22	Western Power Distribution

## Appendix 2 – Glossary

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### A

#### Advanced meter

The electricity supply licence defines an advanced meter as one that must be capable of recording HH consumption data and of providing suppliers with remote access to this data.

### B

#### Balancing and Settlement Code (BSC)

The BSC contains the arrangements for electricity balancing and settlement in Great Britain.

#### Balancing and Settlement Code (BSC) Panel

The BSC Panel is established and constituted pursuant to and in accordance with Section B of the BSC. It is responsible for ensuring that the provisions of the BSC are given effect: fully, promptly, fairly, economically, efficiently, transparently and in such a manner as will promote effective competition in the generation, supply, sale and purchase of electricity. See also [Balancing and Settlement Code](#).

### C

#### Carbon Reduction Commitment (CRC)

The CRC is a mandatory scheme aimed at improving energy efficiency and cutting emissions in large non-intensive public and private sector organisations.

### D

#### Data Collector

As part of the [settlement process](#), the party appointed by an electricity supplier to retrieve and process meter readings to meet the requirements set out in the [Balancing and Settlement Code](#).

#### Data Aggregator

As part of the [settlement process](#), the party appointed by an electricity supplier to package up consumption data to meet the requirements set out in the [Balancing and Settlement Code](#).

### Demand-side response (DSR)

Changes in energy use by consumers at particular times in response to a signal, such as a price.

### Department of Energy and Climate Change (DECC)

Government department responsible for energy policy and climate change mitigation policy.

### Distribution Network Operator (DNO)

The companies that we licence to maintain and manage the electricity distribution networks in Great Britain.

### Distribution Connection and Use of System Agreement (DCUSA)

A multi-party contract between the [distribution network operators](#), [electricity suppliers](#) and generators that relates to the connection to and use of the distribution networks. It includes the distribution network charging methodologies.

### Dynamic time-of-use (ToU) tariff

A [time-of-use tariff](#) that provides for price or pricing structures to vary at short notice in response to market events, subject to contractual terms.

## E

### Electricity supplier

A company that we licence to sell energy to and bill customers in Great Britain.

## ELEXON

The organisation responsible for administering the [Balancing and Settlement Code](#) (BSC). The role and powers, functions and responsibilities of ELEXON are set out in Section C of the BSC.

## F

### Final modification report (FMR)

The FMR sets out the BSC Panel's recommendation on a modification proposal, together with details of its development, the analysis undertaken and the representations made by interested parties.

## G

### Grid Supply Point Group Correction Scaling Factor (GGCSF)

As part of the [settlement process](#), GGCSF is used to adjust all suppliers' volumes up or down to ensure that all energy is allocated.

## **H**

### Half-hourly (HH) settlement

As part of the settlement process, the arrangements for using actual HH consumption data to determine how much a supplier's consumers use in each [settlement period](#).

## **I**

### Imbalance charge

The charges that suppliers (and other market participants) pay for any difference between contracted and metered volumes. See also [settlement process](#).

## **M**

### Measurement Class

For the purposes of the [settlement process](#), all sites are assigned to a Measurement Class based on their type (metered or unmetered) and how they are settled ([half-hourly](#) or [non-half-hourly](#)).

### Micro-business consumer

The supply licence defines a micro-business consumer as one which has an annual consumption of not more than 100,000 kWh; or employs fewer than 10 employees (or their FTE equivalent) and their turnover or balance sheet is no greater than €2m.

## **N**

### Non-half-hourly (NHH) settlement

As part of the settlement process, the arrangements for estimating how much a suppliers' consumers use in each [settlement period](#) based on meter readings spanning longer intervals. These consumers are not settled using actual HH consumption data.

## **O**

### Ofgem

The Office of Gas and Electricity Markets (Ofgem) is responsible for protecting gas and electricity consumers in Great Britain. It does this by promoting competition, wherever appropriate, and regulating the monopoly companies that run the gas and electricity networks. Ofgem is governed by the Gas and Electricity Markets Authority.

## **P**

### [Profile Class](#)

Consumers that are not settled using actual meter readings for each [settlement period](#) are grouped into one of eight Profile Classes. For each Profile Class, a load profile is created that estimates the consumption shape of the average consumer. This load profile (or variations of it) is used to determine the consumption in each half hour for all consumers assigned to the Profile Class.

## **R**

### [Retail Market Review \(RMR\)](#)

The RMR was an Ofgem project with the aims of making the retail energy market work better at serving the interests of consumers and enabling individual consumers to get a better deal from energy suppliers.

## **S**

### [Settlement period](#)

The period over which contracted and metered volumes are reconciled. This is defined as a period of 30 minutes. See also [settlement process](#).

### [Settlement process](#)

The electricity [settlement process](#) places incentives on suppliers (and other market participants) to contract sufficiently to meet the needs of consumers. For suppliers, it operates by charging for any difference between the volume of electricity that they buy and the volume that their customers' consume.

### [Smarter Markets Programme](#)

The Smarter Markets Programme is Ofgem's way of coordinating our work to use the opportunity that smart metering presents to make retail energy markets work better for consumers.

### [Static time-of-use \(ToU\) tariff](#)

A [time-of-use tariff](#) that fixes in advance the peak and off-peak periods and the prices applied at these times.

### [Supplier agent](#)

A party appointed by a supplier to maintain a meter or to collect and prepare data for settlement. Some consumers contract directly with supplier agents. See also [Data Collector](#) and [Data Aggregator](#).



**T**

Time-of-use (ToU) tariffs

Energy tariffs that charge different prices at different times of the day, week, month or year.