Appendix 9.8: Analysis of indirect costs by payment method

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Overview of appendix

1. This appendix presents an analysis of the costs to suppliers associated with supplying customers on different payment methods (direct debit (DD), standard credit (SC) and prepayment meter (PPM)).

2. The results of this analysis informed our assessment of:

   (a) the detriment to customers arising from certain of the AECs we have identified in the domestic retail markets; and

   (b) the prepayment uplift ('cost to serve allowance') that we have concluded should be included in a price cap applying to prepayment customers.

3. Our analysis has focused on the costs associated with serving DD, SC and PPM customers non-smart or 'dumb' meters. We note that the roll out of smart meters is expected to reduce the overall costs of serving customers across all payment methods, with relatively larger reductions in relation to prepayment customers.[1] Therefore, we expect that the differences in cost to serve between DD and PPM customers that we identify in this Appendix to be substantially eliminated as a result of the roll out of smart meters.

4. This appendix is ordered in three sections:

   (a) Section 1 provides a review of Ofgem's analysis of the cost to serve.

   (b) Section 2 sets out our analysis of DD-PPM cost-to-serve differential.

   (c) Section 3 sets out our analysis of DD-SC cost-to-serve differential.

[1] Smart Meters Implementation Programme Annual Report 2015, pages 13-14.

Summary of findings

5. Our analysis has sought to identify the difference in costs associated with serving PPM and SC customers, compared with DD customers for an efficient energy retailer in GB. We have focussed on indirect costs rather than direct costs (eg wholesale costs and network costs) as we have not seen evidence to suggest that there is a systematic difference in direct costs between payment types.

6. In Section 1 we identify that the work Ofgem carried out in its review did not seek to understand the level of costs reported and the differentials these implied. We also noted the wide range of results at an individual supplier level for both the differential costs of SC and PPM. The average cost differentials of the Six Large Energy Firms were said to be £80 for SC customers and £80 for PPM customers.[2]

7. In Section 2 we consider evidence from a variety of sources to reach a conclusion on a reasonable differential in the costs to serve PPM and DD customers. Using the accounting information provided by the energy suppliers, we identify the cost differentials of the most efficient suppliers, which were between £22 and £26 for electricity and between £34 and £54 for gas. However, we observed that some of the information submitted by suppliers was not particularly robust. Therefore, we also made our own estimate of a reasonable differential in indirect costs between DD and PPM customers, which gave a range of £50 to £81 per dual fuel customer per year (£19-£33 for electricity and £31-£48 for gas). Taking both these sources of evidence into account, we have concluded that a reasonable cost differential for an efficient supplier is £63 per dual fuel customer (£24 electricity; £39 gas).

8. In Section 3 we apply a similar approach to that taken in Section 2 to reach our conclusion on what a reasonable differential cost between SC and DD customers might be. In the case of the SC customers we have identified bad debt costs and working capital requirements as the major differential costs compared with DD customers but again found that the information supplied to us produced a wide range of results. The energy suppliers' accounting information indicated a differential for the most efficient firms' of between £101 and £109. We made our own estimate of the differential costs, based on a more granular assessment of the main cost categories that differed across SC and DD customers. This gave a range of between £84 and £150. We have

[2] Ofgem open letter (20 May 2014), Price differences between payment methods.

concluded that a figure of around £100 (£47 electricity; £53 gas) is a reasonable estimate of the SC-DD cost differential.

Section 1: Review of Ofgem's analysis of indirect costs by payment type

9. Ofgem has carried out several exercises over the past few years to understand the cost differentials that exist between payment types. We describe below the major analysis on understanding price differentials over the past few years.

10. In 2008 Ofgem launched the Energy Supply Probe. This was an investigation into the electricity and gas supply markets for households and small businesses. It found that although the markets were working well in important respects there were a range of features in the markets that weakened competition. The result was that the markets were not working in the best interests of consumers.

11. Ofgem identified that the average tariff differential between PPM and DD customers of Six Large Energy Firms had increased from around £80 at the beginning of 2005 to around £125 at the beginning of 2008. Over the same period, the average differential between SC and DD increased from around £40 to £80. By September 2008, the average differential between PPM and DD of the Six Large Energy Firms had fallen to £118. The average differential between SC and DD remained at just under £80.[3]

12. Ofgem also found that evidence from company submissions suggested that average PPM consumption was 8% below average in electricity and 20% below average in gas. Ofgem estimated that for a typical PPM customer, therefore, the price differential actually paid was around £86.

13. In recognition of this differential, one of the outcomes of the probe was the introduction of Standard Licence Condition (SLC) 27.2A into both the electricity and gas supply licences. Under this condition (introduced in 2009), any difference in prices between payment methods should be cost reflective. We understand that suppliers have a degree of latitude over how they allocate costs between payment methods[4]. The majority of suppliers, including all of the Six Large Energy Firms, charge higher prices to customers that do not pay by DD.

[3] Ofgem (6 October 2008), Energy Supply Probe - Initial Findings Report, paragraph 7.47.
[4] Ofgem Open Letter.

14. Following further concerns that the retail energy markets were not working effectively for consumers (both domestic and commercial) Ofgem launched the Retail Market Review in late 2010.

15. The review recognised that while there had been some improvements since the 2008 Energy Supply Probe, many of the barriers to effective consumer engagement remained. These barriers included the complexity of tariff options, the poor quality of information provided to consumers and low levels of trust in energy suppliers. One of Ofgem's proposed changes was to reduce the number of tariffs available. [✂]

16. Ofgem also identified that suppliers had dramatically decreased the premium charged to PPM customers compared with that charged to their SC customers. As a result, PPM customers were paying, on average, £20 less than SC customers for their gas and electricity.[5]

17. In early 2014 Ofgem issued an information request to gather information from suppliers on the prices they charged domestic consumers for different payment methods. This request asked suppliers to describe their approach to setting price differences between payment methods and to explain why they considered this ensured any differences were cost-reflective. Ofgem also asked for suppliers' total annual costs for 2012 for the cost categories that differed by payment method. This was to enable Ofgem to check suppliers' compliance with SLC 27.2A.

18. The information request was voluntary. Ofgem received responses from 13 suppliers, including all of the Six Large Energy Firms, of which nine provided data on how their total annual costs for 2012 differed by payment method.

19. In May 2014 Ofgem issued a letter providing its conclusions from the review of the data supplied.[6] Ofgem found no evidence to suggest that costs were being unjustifiably added to the bills of typical PPM and SC customers. It said that the differential paid by gas PPM customers was typically below what would be justified in cost terms.

20. Overall, since Ofgem introduced SLC 27.2A to address unjustified price discrimination in 2009, the difference in price for a PPM customer compared with one paying by DD is said to have fallen significantly from £140 to around £80 per year. Average price differences for SC customers were also said to be around £80 per year at that time compared with those paying by DD. Looking ahead Ofgem said it would expect to see price differences fall with

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[5] Ofgem (21 March 2011), The Retail Market Review – Findings and initial proposals, paragraph 2.28.
[6] Ofgem Open Letter

the roll-out of smart meters, for example because the meter can operate in both smart and prepayment mode, removing the need to install and maintain a specialised prepayment meter.[7]

21. Ofgem concluded from its review of costs that:[8]

(a) Suppliers' costs for providing different payment methods vary.

(b) The costs of supplying PPM customers are generally higher than for DD customers. This is in part due to:

(i) the need to install a PPM at the customer's premises, which is more expensive to buy and maintain than a credit meter;

(ii) PPM relying on a bespoke payment infrastructure; and

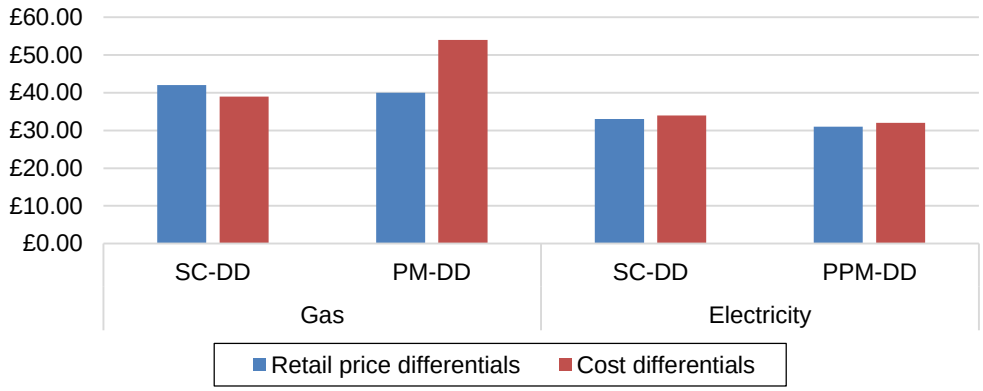
(iii) issues specific to PPM customers, such as problems in topping up the meter, which mean they are more likely to call their supplier resulting in higher costs to serve.

(c) The costs of supplying SC customers are also higher than for DD customers. The data submitted by suppliers indicates that this is primarily driven by bad debt costs, including debt management costs and recovery of debts, provision for bad debts and bad debt write-offs where appropriate.

22. We understand from Ofgem that the comparison it carried out compared the tariff differentials to the reported cost differentials rather than assessing the validity of data on cost differentials received. Figure 1 summarises its findings.

[7] Ofgem Open Letter, p1.
[8] Ofgem Open Letter, p4.

Figure 1: Weighted average cost and price differences between payment methods in 2012



Source: Ofgem letter (20 May 2014).

23. We have reviewed the data supplied to Ofgem on a company-by-company basis. We converted the total costs reported into a cost per customer to aid comparison between suppliers.

24. We summarise our findings in Table 1 below.

Table 1: Calculated cost per customer from data supplied to Ofgem

£ per customer

	Electricity			*Gas*		
Supplier	*DD*	*SC*	*PPM*	*DD*	*SC*	*PPM*
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.
*2013 data.
[✂]

25. Table 2 shows the differential in costs of PPM to the cost of the DD payment method.

Table 2: Differential in PPM and SC costs relative to DD costs

£ per customer

	Electricity		*Gas*		*Total*	
Supplier	*SC*	*PPM*	*SC*	*PPM*	*SC*	*PPM*
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA.
*[✂]

26. From these results we observed that:

(a) There was a wide range in the level of total PPM additional costs over DD which varied from £46 to £132. Removing the effect of all PPM bad debt (on the basis this is not appropriately attributable to PPM customers) reduced the figures to between £34 and £127.

(b) The average differential to DD for the Six Large Energy Firms were £84 for PPM and £88 for SC.

(c) For the Six Large Energy Firms the total differential range for SC compared to DD was £57 to £149 per customer.

(d) SSE and E.ON had a much greater difference ([✂] and [✂] – almost [✂]) in costs between gas and electricity PPM.

(e) The SSE data suggests that SC customers cost [✂] as DD customers with PPM customers costing more than [✂].

(f) Centrica and EDF Energy figures show that on a total level PPM customers cost [✂] than SC customers (although Centrica gas customers cost [✂] using PPM than SC).

(g) The costs reported by Co-operative Energy were [✂] compared with the Six Large Energy Firms' reported costs.

27. We observed that the cost information gathered did not take into account any working capital implications.

28. Ofgem commented that suppliers have some latitude in how they allocate costs[9] and we accept that this will give rise to some differences in cost levels. We have, however, explored some of the issues identified.

29. Ofgem has issued an updated view of PPM tariff differentials and this shows the tariff differential between DD and PPM customers (for the cheapest tariff offered by any of the Six Large Energy Firms) to be at about £255[10] (December 2014 data). Ofgem states that the average differential between the Six Large Energy Firms' SVTs for customers paying via SC and PPM, and those paying via DD, has remained broadly stable over the past year, at around £75.

[9] Ofgem (May 2014), Price differences between payment methods, p6. Ofgem Open Letter
[10] Ofgem Retail Energy Markets report 2015. Figure 6.2.

Section 2: Analysis of DD-PPM indirect costs differential

Introduction

30. The indirect costs of serving prepayment customers differ from those of serving direct debit customers. From our correspondence with suppliers and from their data submissions it is clear that the major indirect costs of PPM customers are in the cost of metering and in the cost of collecting payment. While suppliers reported large amounts of bad debt costs relating to PPM customers, we note that these customers pay for their energy in advance.[11]

31. The cost of the prepayment meter itself is greater than for a credit meter since it requires additional functionality. Gas PPMs are more expensive than electricity PPMs since they also require an additional shut down mechanism for safety reasons.

32. The cost of collecting payment consists of the costs of the PPM infrastructure provider (PPMIP) and the costs of the actual collection of cash via the National Service infrastructure Providers (NSPs). The PPMIP is a management information provider and generally acts as a conduit for data, processing it for suppliers and also providing services such as card key[12] replacement. The NSPs (Paypoint, Post Office and Payzone) provide the infrastructure that deals with the payment.

33. In order to understand the cost differences arising from different payment methods we asked suppliers to provide us with their understanding of the cost of dealing with DD customers, PPM customers and of those who pay by SC. Suppliers were asked to allocate the cost of bad debt to the payment category under which it arose (debt is frequently transferred to PPM to be recovered but we do not consider this a cost of PPM customers). We note that while most PPMs are installed due to debt, only 7% of electricity PPM customers and 10% of gas PPM customers are currently in debt to their energy supplier.[13]

34. Suppliers commented that their systems were not set up to collect cost data according to these subsets of costs and that any submission would be subject to some estimation on the allocations made. While we accept that some of the data might not be immediately available we would expect suppliers to

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[11] See paragraph 33 for how we sought to address this point.
[12] The card key is used by PPM customers to add credit to their meters. The customer takes the key into a shop and pays for credit to be added. The terminal reads the card and obtains the host details, supplier and tariff information. If the tariff rate has changed the key will be updated. The customer takes their key (with updated credit) and inserts it into the PPM. This adds the credit to the PPM and updates any tariff data.
[13] Ofgem (23 June 2015), Prepayment review: understanding supplier charging practices and barriers to switching, p5.

understand the difference in the cost to serve each group since this information is an important input for setting the tariffs for each group and for ensuring compliance with Standard Licence Condition (SLC) 27.2A which requires that any difference in prices between payment methods should be cost reflective.

35. In response to our consultation on our second supplemental notice of possible remedies one respondent said it was interested in understanding the basis for attributing a higher cost-to-serve to PPM customers. The respondent said that such customers should, in principle, be lower maintenance (no meter readings required, no quarterly bills, no cash-flow delay, negligible bad debt risk etc). It also observed that the savings associated with PPM customers should, to some extent at least, offset (unspecified) infrastructure costs attributable to PPMs, which should nevertheless diminish over time.[14]

36. In light of the variation in the level of accounting costs we saw across the suppliers when expressed on a per customer basis, we also estimated, from a bottom-up approach, the value of costs that we believed might vary between the two payment types.

Approach adopted to this analysis as set out in the PDR

37. In the PDR we set out our analysis of the suppliers' cost submissions for 2014 expressed on a per customer basis. We had asked the suppliers' to analyse their indirect costs across customer payment types in a particular way for certain cost categories and where it was evident that they had not done so, we made adjustments to their cost information as explained below.

38. Separately we set out the outcome of our "bottom-up" analysis where we had looked at each cost item which we thought might contribute to the differential in detail. For each item, we estimated a range of costs, using a combination of third party information on prices and accounting costs based on the Six Large Energy Firms' cost submissions.

39. We then used both sets of analysis to inform our provisional conclusion about the possible range for the differential and our "spot estimate" (£54 per dual fuel customer per year) to use in the provisional detriment calculations and to calibrate the proposed PPM price cap.

[14] BGL response to second supplemental notice of possible remedies, paragraph 3.4.

Comments on the analysis set out in the PDR

40. We received substantive comments on our analysis of the DD-PPM differential from all of the Six Large Energy Firms and from Utilita and Economy Energy, two prepayment specialists. These parties made a number of submissions on how we had analysed their accounting costs, how we had undertaken our bottom up analysis and how we had weighted up this evidence in drawing our provisional conclusion. Most of these parties submitted that our spot estimate of the cost differential of £54 per dual fuel customer per year was too low. We have set out their detailed comments in Annex A to this Appendix. For ease of reference and comparison, in this appendix, we have grouped their comments by each theme and discuss them in the relevant sub-sections below.

Accounting costs approach to estimating the DD-PPM cost differential

Suppliers' cost submissions to the CMA as set out in the PDR

41. We received cost submissions from ten suppliers together with responses to specific questions that we raised. We asked suppliers to allocate the costs relating to debt to the payment segment in which the debt originated. Where this had not happened we asked suppliers to resubmit their data.

42. Table 3 summarises the cost to serve as resubmitted to us.

Table 3: Suppliers submitted 2014 cost-to-serve data

£ per customer

	Electricity			*Gas*		
Supplier	*DD*	*SC*	*PPM*	*DD*	*SC*	*PPM*
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.

43. As Table 3 shows, costs to serve gas customers are generally higher than those for electricity customers. This is due, primarily, to the greater need for safety precautions with gas,[15] which have an impact on the cost of metering,

[15] E.ON told us for example that an engineer was required to check a customer's other gas supplied household products, to ensure that they all started safely following a meter exchange event.

but also reflects a slightly higher cost of bad debt for gas customers (which reflects the different profile for customer gas consumption and price).

44. From this data the differential cost between those customers using PPMs compared with those paying by DD was as shown in Table 4.

Table 4: Summary differential costs (PPM to DD)

£ per customer

Supplier	*Electricity differential*	*Gas differential*	*Total differential*
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.
[✂]

45. Taken at face value, these figures imply an average cost differential between DD and PPM customers of approximately £90 for the Six Large Energy Firms. The differential shown for Centrica is [✂] than the [✂] which it has recently advised us is the price differential between DD and PPM.[16]

46. We note that the indirect cost differential for PPM customers reported by the Mid-tier Suppliers was lower[17] than that suggested by the Six Large Energy Firms.

47. We observe that PPM customers reflect a relatively small part of many of the Mid-tier Suppliers' customer bases (on average less than 3% of total customers ranging from 0.1 to 6.6%).[18] In addition:

(a) We noted that Ovo Energy only entered the PPM segments in 2014 and has focussed on smart prepayment meters.

(b) We calculated from the Co-operative Energy submission that its PPM customer base had increased by almost [✂] in two years which we

[16] Centrica response to supplemental PPM remedies, p4.
[17] After adjusting Ovo Energy customer numbers to year-end position to reflect the abnormal growth in the year.
[18] We note that while Utilita is not included within our definition of Mid-tier Suppliers, it focuses on the prepayment segment and therefore has a large number of such customers. However, as set out in paragraph 3, our analysis seeks to understand the differences in the costs to serve direct debit and 'dumb' prepayment customers. As Utilita's business model is heavily focussed on a smart prepayment proposition, we have not included it in our comparator set.

considered may impact cost items, making the results at a cost per customer level volatile.

(c) First Utility reported fewer than [✂] PPM customers[19], which again would have an impact on any comparisons (any small variation in allocation of costs over a small customer base would have a disproportionate impact on cost per customer). They represent about [✂]% of First Utility's total customer base. [20]

(d) The data set supplied by Utility Warehouse appeared more comparable, with [✂] of Utility Warehouse customers having PPMs compared with an average of around 16% across the sector as a whole. We noted that Utility Warehouse had recently been [✂]. However, we considered that Utility Warehouse's cost differentials for metering and payment could reasonably be compared with those of the Six Large Energy Firms.

48. On this basis, we concluded that we should include Utility Warehouse in our set of comparators but exclude the other Mid-tier Suppliers in coming to a view on the cost differential between DD and PPM customers.

Commentary on the suppliers' cost submissions as set out in the PDR

49. We recognise that the provision of this data was not a simple exercise for any supplier, however we had concerns with the quality of some of the returns. We raised queries with suppliers where the data appeared to be inconsistent or where we did not understand the allocation basis.

50. Some of the replies we received from suppliers appeared to show a lack of understanding of what had been submitted and, by inference, of the indirect costs for the different payment types.

51. SSE commented that some of the analysis of overheads between payment methods was based on [✂]. As a result some of the CMA's detailed questioning was difficult to answer definitively.

52. RWE said that it amended its 'cost to' allocation rules to determine cost allocations across payment types, in recognition of the fact that the CMA required a more accurate view of specific cost lines than was provided by RWE's internal cost allocation methodology. This meant that for some cost

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[19] As at 2014, the date of our comparison.

[20] Centrica also noted that [✂] costs were not comparable to the other suppliers because [✂] had not attributed metering, sales and marketing, central overhead and other costs on a differential basis between DD and PP (and SC). The only costs which had been differentially attributed were costs to serve and bad debt. All other suppliers had made a better effort to attribute their costs differentially. (CRA's response to PDR on behalf of Centrica, footnote 57, page 40.

items there were inconsistencies between the actual cost charged and the ‘cost to’ allocation methodology. RWE said that although the latter was not always perfect it provided a broadly robust breakdown of the total cost base.

53. [✂]

54. RWE told us that PPM customers accounted for [✂] of call centre costs although they formed only about [✂] of the customer base. It said that customer numbers did not give a fair representation of total customer contacts by payment type and therefore time spent on dealing with different payment types. RWE commented that PPM calls were more complicated and took longer than calls from other customer types and provided a table showing a weighting of costs to PPM of [✂] times those of DD customers. We asked RWE to clarify the period of the data, and RWE confirmed that the cost allocation methodology was based on 2009 data and was used specifically for the purpose of the CMA’s information request. RWE said that this was because [✂]. RWE told us that at the time of putting the methodology together it was reflective of the customer base. We observed that the results of the RWE methodology were very different to the submissions of the other the Six Large Energy Firms where call centre costs relating to PPM customers were mostly lower than those for DD customers. EDF Energy commented ahead of publication of the PDR that relative [✂].

55. [✂] also told us that the PPM customers took a higher proportion of billing costs because the ‘billing journey’ needed more technical support. [✂] allocated [✂]% of billing costs to PPM customers despite these forming [✂]% of the customer base. We noted that none of the other Six Large Energy Firms apportioned large amounts of billing costs to PPM customers and on average (excluding [✂]) the cost per customer was £1.35 for electricity and £1.47 for gas. The comparable [✂] values were £10.72 for electricity and £11.18 for gas.

56. We asked [✂] about its reported cost of collection for PPM customers compared with other payment types [✂]. We would expect costs for PPM customers to be lower in this category (the main PPM collection costs were specifically detailed in another category) and the [✂] explanation did not explain why the reported differential as between DD and SC and PPM respectively should exist. As a result of our restatements, where we moved the internal cost of bad debt out of reported collection costs (see next section) the differential reduced but was still higher than we would have expected.

57. Scottish Power told us that although the cost allocation between payment methods was correct at a total ‘cost to serve’ level, the ‘costs to meter’ were not reported separately in its IT system and that the individual analysis

supplied was less robust at an individual line basis than at a total 'costs to meter' level. The costs at a total level were split on a composite allocation rate formally agreed by responsible business managers. The overall result was a higher PPM differential than reported by other suppliers. When asked about the (higher) differential, Scottish Power said that in its opinion the approach used to produce the information was reasonable and that the costs were as efficient as possible and observed that applying a simple allocation by customer numbers would lead to a different proportional allocation that might not be reflective of the differing cost of PPM customers. We do not dispute this but consider that it does not explain why the Scottish Power meter differential costs, which are said to be robust at a total level, are relatively high.

58. EDF Energy drew our attention to the charges published by National Grid Metering Limited (NGM) for installing, maintaining and renting gas meters.[21] The quoted charge for these activities is a rental for credit meters of £15.12 per customer and a rate of £37.84 for PPMs, giving a differential of £22.72. Where suppliers had reported costs in excess of these figures we asked suppliers to comment. Centrica suggested that this was not a fair comparison since the NGM quoted rates only allowed for a certain level of maintenance above which further charges were incurred.[22] We note that the transactional charges referred to appear to apply equally to credit meters and PPMs and so would not cause a differential between DD and PPM customers. SSE told us that Ofgem had imposed a cross subsidy from credit meters to PPMs for NGM charges and suggested this was the cause of any cost difference. We note that there is a small subsidy of £1.25[23] per meter but this does not explain the much larger differences reported by suppliers.

Restatements reflected in the analysis set out in the PDR

59. Recognising the limitations in the data and following clarifications from suppliers, we adjusted various submissions as follows:

    (a) SSE advised us that it had included the internal cost of bad debt within the cost to serve rather than bad debt category. We adjusted the values identified by SSE to aid our comparison across suppliers.

    (b) SSE also indicated that £[✂] relating to the costs of gas PPMIP in 2014 had been included in its metering accounts entry. We moved this to cost

[21] National Grid Metering Charges from 1 April 2014
[22] Centrica also highlighted that National Grid only made up around one-third of British Gas's total rental costs and that the remainder were subject to different contractual terms, commercial rates, and rental periods.
[23] National Grid Metering Charges from 1 April 2014, p18, paragraph 3.5.

to serve to enable our assessments for this, and for metering, to be consistent.

(c) RWE told us that in its revised data submission it had included [✂] of transformation costs that it had previously considered to be out of the scope of the data requested. RWE said that the transformation scheme was an extensive outsourcing programme. Although we consider that the one-off nature of the costs of this scheme are not fully representative of 'business as usual' and should therefore be excluded, we note that the inclusion or exclusion of these costs substantially changes the overall RWE differential (but neither are consistent with the 2013 data). RWE told us that both 2012 and 2014 were not considered 'business as usual' and therefore, as we had only collected three years' data, we were unable to compare the 2014 results to cost trends over time. We did not restate for this difference but took it into account when interpreting RWE's figures.

(d) Centrica clarified to us that the cost for PPM payment services[24] and the cost of PPM data management had been incorrectly allocated between electricity and gas. We adjusted the data as advised by Centrica (this affected the electricity/gas split but not the total costs reported).

(e) Centrica advised us that its 2014 numbers for electricity PPMs contained an adjustment [✂] following resolution of a dispute from previous years. We amended this to reflect a more consistent cost per customer.

(f) Scottish Power told us that although the cost allocation between payment methods was correct at a total 'cost to serve' level, the detailed allocation of the costs of PPM payment services, PPM data management and other that it provided initially were more approximate. We restated the numbers based on the revised numbers advised by Scottish Power.

(g) E.ON told us that it had included the gross cost of PPMIP activity (it provide a PPMIP service to some other suppliers for which it received income). Although E.ON then suggested that the income was included, we were unable to identify this. We therefore deducted the income[25] from the PPMIP reported costs to get a net position reflecting the actual cost of E.ON PPM customers.

(h) E.ON also told us that it had included £[✂] of gas PPMIP costs under direct costs. We adjusted the figures to include this amount within indirect costs.

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[24] The cost of third parties (eg the Post Office) collecting payments from PPM customers.
[25] As a proxy for the actual costs of supplying this service.

60. We removed any remaining cost of bad debt from the PPM customers of the Six Large Energy Firms and reallocated this on a pro rata basis to the existing DD and SC bad debt costs. While small debts can arise, for example on change of occupiers, we concluded that most of the bad debt costs shown as being attributed to PPM customers arose in other payment segments, and were rightly a cost of that segment. This conclusion was based on the fact that PPM customers pay in advance and cannot incur energy-related debt (except in certain limited circumstances and then for small amounts).

61. EDF Energy identified electricity PPM fraud as a factor that we should consider. We note that this refers to an issue that was prevalent some years ago.[26] The most recent estimate of the scale of this problem we found was Ofgem quoting £2.2 million[27] in 2012, and acknowledging that the energy industry had a commitment to address the problem. Since that time there has been little further publicity on this issue, suggesting that it is no longer a major issue. The £2.2 million quoted equates to less than 55 pence per PPM electricity customer per year. We note that there is also fraud that relates to SC meters but we do not have an estimate of this or the consequent differential in cost to PPM customers. We understand that suppliers have treated fraud as part of the direct cost of supply and therefore the impacts are not included in our assessment of indirect costs. Since there are not reliable figures to estimate the current impact (which may be much less than 55 pence per electricity PPM customer if the problem is no longer an issue), or the differential in costs, we consider this approach to be appropriate.

Comments made by parties on our adjustments to their cost submissions, our response and impact on our analysis

62. Parties' comments on our adjustments to the cost submissions were limited to three particular issues as follows.

Incorrect adjustment relating to income netted off against payment services costs

63. EON told us we had incorrectly double counted its income in relation to payment services by £4 million and requested that we adjust the relevant line item, so that the its total costs remained as originally submitted (see paragraph 59(g)). As a result, we have amended EON's costs so that its income in relation to payment services is now not double counted.

[26] Top-up Safe website.
[27] Ofgem open letter (11 April 2012), Electricity top-up PPM fraud.

Treatment of bad debt

64. RWE submitted that it was inappropriate for us to exclude any debt ran up by its customers whilst they had been supplied on a credit basis from the assessment of costs of providing a customer on a PP basis. RWE stated that the installation of a prepayment meter was a legitimate and reasonable step for a supplier to take. However it did not guarantee that the money would be ultimately recovered from these customers, resulting in the write off of the outstanding debt. RWE also submitted that the cost of holding the outstanding debt (which in its case averaged at £[✂] for each prepayment customer as at February 2016) should be included in our assessment of the differential.

65. RWE's submission and comments made by other parties in relation to our bottom up analysis (see paragraphs 117 to 118) highlighted that there are two 'types' of bad debt and working capital that we need to consider. The first is that which could be traced back to the time when the PP customer had been supplied under DD (or SC) payment terms, and the second is that arising during a customer's time as a PP customer.

66. In relation to the first 'type' of bad debt, while we accept that installing a PP meter might be the right response to a customer getting into payment difficulties, it remains the case that any bad debt and/or additional working capital incurred on the outstanding debt (at the time that a PPM was installed) would have been caused by a DD (or SC) customer, not a PP customer.[28] In relation to the second 'type' of bad debt, as discussed in paragraph 118, we note that the opportunity for a prepayment customer to incur bad debts while on a PPM is limited. Therefore, we have not revised our adjustments to RWE's submission in relation to bad debt.

Treatment of separately identified central overhead costs

67. Utilita submitted that while some suppliers had identified central overheads as a separate cost items, others had not. It suggested, therefore, that these costs should be included in the estimate of the differential.

68. We recognise that suppliers may have taken different approach to attributing the costs incurred to support their supply activities. We have therefore in our

[28] In those cases where a supplier had taken on an indebted customer on a PP basis from another supplier, we considered that the bad debt and working capital costs of assuming the customers debts comprised a cost of serving a PPM customer and should, therefore, be included in the firms' accounting costs. However, Ofgem Social Obligations monitoring data showed that in 2013 indebted PPM customers completed a total of 865 account switches in 2013. We concluded that this number of indebted switches (in the context of around 4 million PPM customers) meant that the associated bad debt and working capital costs for energy suppliers was effectively nil. Ofgem Letter, page 2.

revised analysis of the differential based on accounting costs consistently included these costs.

Other revisions we have made to the previous analysis

69. We have made two further changes to the analysis as a result of developments in our thinking in light of responses to other aspects of the analysis we set out in the PDR as explained below.

Sales and marketing expenditure / customer acquisition costs

70. As explained in paragraphs 83 to 88 in response to submissions made in relation to our granular (bottom up) assessment of the differential, we have revised our thinking in relation to sales and marketing costs / customer acquisition costs. We now exclude these costs because, in our view, any cost differential is likely to be heavily influenced by the significant difference between the DD and PP segments in the competitiveness of their tariffs (see paragraph 84 where we discuss this issue further). As we are seeking to establish the level of indirect costs that would be incurred by an efficient operator of scale in a well-functioning market (ie one in which PPM customers have access to a range of competitively priced tariffs), we consider no allowance should be made for this cost item. We also note that, for certain suppliers, expenditure on this item can and does vary considerably from period to period and therefore would contribute to instability in the assessment of the cost differential.

Costs of financing working capital (debtor or creditor balances)

71. In the context of our analysis based on suppliers' cost submissions of the DD-SC differentials SSE told us that we should consistently include the cost of financing working capital computed at the same cost of capital that we used elsewhere in our analysis, ie 10% a year. We agree with SSE on this point and have applied this principle throughout our analysis including when estimating the DD-PP cost differential.

Revised analysis based on suppliers' cost submissions

72. In the following table we present our revised analysis of suppliers' indirect costs. To recap, this is based on suppliers' cost submission for 2014 after certain amendments as described above. Most notably it now excludes any expenditure identified as sales and marketing expenditure. The costs of

financing working capital (debtor or creditor balances) have also been included as per suppliers' submissions (at 10% per year).[29]

Table 5: Suppliers' costs of servicing customers DD v PP and associated differential (2014)

£ per customer per year

	Average per customer (APC)					Differential v DD			Dual fuel			
	Electricity			Gas					DD		PP	
	DD	PP		DD	PP	Elec		Gas	APC		Δ	APC
SSE	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
SP	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
EON	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Centrica	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
RWE	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
EDF	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Utility Warehouse	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis

73. This analysis shows that [✂] achieved the lowest unit costs in supplying DD customers in both electricity and gas, closely followed by [✂] and [✂] in electricity and [✂] in gas. It was also the lowest cost supplier for PP gas customers. [✂] achieved the lowest unit levels of cost in supplying its PP customers for electricity, followed by [✂] and then [✂] In contrast [✂] had significantly higher costs of supplying PP customers in both gas and electricity (almost 30% higher in each case than the next highest provider), with DD costs that were at or near the top of the range for each fuel.

74. The analysis yields a wide range of both absolute costs to serve for each fuel and customer type and of differentials across the suppliers, the precise extent being a function of individuals suppliers' 'performance' in each of these customer segments.

75. We set out our conclusions on this analysis together with those on our granular assessment of the DD-PP cost differential at the end of this section.

Granular costing approach to estimating the DD-PP differential

76. In light of the variation in the level of accounting costs we saw across the suppliers when expressed on a per customer basis, and the importance of these calculations in our assessment of detriment and in the calibration of the PPM price cap, we decided that it was prudent to conduct a supplementary, 'bottom-up' exercise to assess the differential costs between customers who paid by DD and those customers who had a PPM. To do this we considered

[29] There was one exception to this in that we excluded the cost of financing the large debtors balance that Utility Warehouse had attributed to its PP customer segment. We observed that this financing cost was equivalent to around [✂] per dual fuel customer for Utility Warehouse, compared with an average cost of [✂] across the Six Large Energy Firms. We concluded that this difference was likely to be due to Utility Warehouse attributing debt to PPM customers that had arisen while those customers were DD or SC customers.

each element of indirect costs that had been identified by suppliers and decided if a differential cost could be expected and, if so, what an efficient value might be.

77. Below we set out the discussion as reflected in the PDR, summarise parties' comments on this discussion and detail the revisions to our approach on an item-by-item basis.

Sales and marketing costs / cost of acquisition

78. In the PDR we considered that general sales and marketing activity was most reasonably applied evenly across the customer base. Where specific campaigns target specific types of customer there would be an argument for allocating such costs differently but we saw no reason to assume a PPM differential to DD customer costs.

Parties' comments

79. Scottish Power pointed out its cost submission had shown that it cost it significantly more to acquire a PP customer (around £10 per year for a dual fuel customer) than a DD customer as a result of the different mix of sales channels used, a mix largely determined by the preferences of the two categories of customers. It had also analysed its 2014 direct sales commission costs for DD and PP customers between face-to-face, telesales and PCWs sales channels and found a weighted average differential of around £8 per duel fuel customer per year.

80. Likewise SSE told us that we had made an unfounded assertion that these costs would be incurred evenly by each customer payment type and therefore in its view wrongly excluded these costs.

81. Economy Energy told us that the greater difficulty in acquiring PP customers than credit customers was mainly due to a combination of the low levels of internet availability to many of PP customers and the low visibility of PP tariffs on PCWs.

82. In contrast, Utilita told us that it found face-to-face selling cheaper than selling through PCWs. A critical factor was that it had a product that people actually wanted to buy, which enabled somebody doing face-to-face selling to sell a large number of contracts every day rather than selling, perhaps, just one dual fuel contract a day.

Our consideration of PDR comments and impact on our analysis

83. We acknowledge that acquisition costs per customer acquired are likely to vary by acquisition channel (eg telesales, face-to-face, PCW and suppliers website). Therefore, to the extent that PP customers tend to prefer to switch via one set of channels and DD customers tend to prefer to switch via others, there could be a differential in the average cost to suppliers of acquiring PP customers.

84. However, we found the observations of Utilita on this issue, together with the results of our gains from switching analysis, to be insightful. These suggest that many suppliers may have to work harder to acquire PP customers because their offerings are not sufficiently attractive to the customers of other suppliers to make it worth their while switching.[30] As a result, it appeared to us that the level of differential for these costs was likely to be an outcome of weak competition in the PP segment. As we are seeking to establish the level of indirect costs that would be incurred by an efficient operator of scale in a well-functioning market (ie one where PP customers have access to a range of competitive tariffs), we consider no allowance should be made for a differential in this cost item.

Cost to serve differential

85. In the PDR we estimated the impact of items in the 'cost to serve' category (excluding NSP and PPMIP costs which we show separately as these are solely attributable to PPM customers). We arrived at the adjustment range by considering the cost of items such as bank charges for DD processing, call centre activity and billing/statement issues. For billing and statements, from the responses to our data request, suppliers generally indicated that such costs were likely to be slightly lower for PPM customers than for DD customers, although the difference was relatively small (the average of five of the Six Large Energy Firms' submissions[31] indicates 35 pence lower for electricity and 32 pence lower for gas).

Call centre costs

86. Two suppliers suggested that PPM customers were more costly to serve as they called more frequently and the calls were longer and more complex. Upon further investigation by us ahead of the publication of the PDR,

[30] For example, our gains from switching analysis (see Appendix 9.2) shows that the savings available to prepayment customers were, on average, substantially lower than those available to customers on other payment methods, reflecting the more restricted range of tariffs available to them.
[31] Excluding RWE where the results do not appear credible (see paragraph 55).

however, we were provided with little evidence to support this. We noted, however, the results of call sampling made by EDF Energy, which suggested that [✂] of all calls by volume related to specific PPM issues. EDF Energy also told us that PPM [✂] than calls for other domestic customers. We asked EDF Energy if it was confident about this data and it reviewed this further. It provided a simpler allocation by allocating costs based on assumptions of call volumes and average handling time which resulted in [✂]% of costs being allocated to PPM customers. We also noted that a 10 pence differential on each fuel might be sufficient to fund 20[32] additional call centre agents and therefore the impact of any adjustment would be expected to be small.

87. As a result for our spot estimate for the bottom up analysis we made no allowance for there to be a differential between the costs of serving PP rather than DD customers in respect of call centre costs.

- *Parties' comments*

88. Scottish Power told us that there was much more scope for things to go wrong for PP customers and, if they did go wrong, PP customers needed more urgent support, making it more likely for them to phone their supplier rather than, say, emailing or visiting its website. It pointed out that both its and RWE's accounting costs clearly indicated the existence of such a differential. Scottish Power as a result had conducted further analysis of its own call centre costs both in terms of the number of calls, the average call handling time and the average cost of the each type of call. This showed that not only did PP customers make more calls on average but PP calls were also significantly more complex and therefore charged at a higher unit price by its outsourced call handling agents. On this basis, Scottish Power estimated a differential of [✂] per dual fuel customer per year, in line with the level of its 2014 accounting costs differential.

89. RWE reiterated that there was a differential in the costs of serving PP rather than DD customers as reflected in its cost submission. It had estimated that whilst these customers comprised 12% of its customer base, they accounted for 25% of its call centre costs. Furthermore calls from PP customers were more complicated and took longer. This extra resource required to serve PP customers was reflected in its cost submission which showed a [✂] per year cost differential for electricity and gas separately (ie £30 a year for a dual fuel customer).

[32] Based on 7 million (single fuel) customers paying 10 pence extra = £700,000. Assuming all-in staff cost at £35,000 = 20 staff.

90. Economy Energy told us that it believed that there was a significant differential. The principal reason for a customer on a credit meter (ie either a credit or direct debit customer) contacting their supplier was to query a bill – if they had lost power or gas they would need to call their DNO, not their supplier. In contrast, a prepayment customer had to contact their supplier over a number of power supply related issues, notably to do with the devices themselves (keys or cards) and off-supply problems often caused by self-disconnection. Utilita told us that if a prepayment customer had a difficulty of any type (from how to use the emergency credit to inability to top up due to no money) they tended to call the supplier.

91. EDF drew to our attention the potential for bias within its allocation of call centre costs in its cost submission (which had been used to support our provisional view that there was no material difference). This allocation had not been based on a full capture of call volumes for DD and PP customers respectively. Given the significance of this cost item, any bias reflected in its cost submission analysis would have had a material impact on our assessment of this differential and, in its view, further analysis was required. It subsequently submitted that it had looked at its call costs again and found there to be a differential of [✂] per year per dual fuel customer.

- *Our consideration of PDR comments and impact on our analysis*

92. We note that the accounting cost submissions varied considerably in this respect, some showing little or no variation in the costing of this item on a per customer basis and some (RWE and Scottish Power) indicating a significant differential.

93. However, we consider that the arguments put to us suggest that there is likely to be a differential in respect of call centre costs due to the need for PP customers to contact their supplier more frequently, although the precise extent of the differential is unclear. We have therefore modified the granular 'bottom up' analysis to include an estimate for this cost within the upper bound (an extra £3 and £6 per customer per year for electricity and gas respectively). We have based this estimate on the information provided by Scottish Power on the grounds that in its response to the PDR it had presented additional analysis of its call centre activity by which it sought to sense check the differential indicated by its cost submission.[33] For the lower bound estimate of call centre cost differentials, we have continued to assume

[33] We note that these costs will also be included these costs in our estimate of the differential based on suppliers' accounting costs submissions to the extent that each individual supplier's costings had reflected a differential.

no difference since this is what certain of the energy suppliers' cost data showed (eg EON and SSE).

Cost to pay differential

94. We contacted some of the PPMIPs[34] and the NSPs[35] and asked them for information relating to the charges for their services. From this information we calculated a cost per customer for these services. In arriving at these figures we considered the lower transaction threshold cost that some smaller suppliers would face and set out our estimation accordingly (as outlined below).

95. We requested tariff information from the NSP companies for 2014 together with volumes of transactions. From these we were able to ascertain the range of costs for PPM payment services. The tariffs charged are generally volume related and we have therefore used an average calculated from using the total charged for 2014 spread over the average number of PPM customers for the year. This forms one end of the range with the average that the Six Large Energy Firms charge as the other end.

96. We also received information from Itron and Siemens who provide PPMIP services to suppliers. From this we were able to consider the range of costs that we could allow per PPM customer. Again these were reflective of volume discounts and so we used an average calculated from using the total charged for 2014 spread over the average number of PPM customers for the year.[36]

Metering costs differential

97. In the PDR the estimate of meter rental costs was inferred from the capital cost of the meter, an assumed economic life and a reasonable rate of return. Suppliers advised us of the expected cost of new credit meters and PPMs and this is summarised in Table 6.

Table 6: Summary cost of new dumb meters

		£ per unit
Meter	*Electricity*	*Gas*
Credit	[✂]	[✂]
Prepayment	[✂]	[✂]

Source: CMA analysis.

[34] Itron and Siemens.
[35] Post Office, Paypoint and Payzone.
[36] We did not include E.ON in this analysis since it does not use Itron for this service.

98. The difference in capital cost was therefore approximately £39 for electricity and £80 for gas. Centrica told us that new dumb meters had an expected life of seven years[37] which, using a cost of capital of 10%,[38] implies a difference in rental cost of £8.01 a year for electricity and £16.43 a year for gas. Using a more conservative five-year life implied a rental of £10.29 for electricity and £21.10 for gas. We also considered the lowest rental reported to us and the average for the Six Large Energy Firms[39] in determining an appropriate range.

99. As a further check we examined the charges published by NGM for installing, maintaining and renting gas meters. These charges are regulated by Ofgem and as such might be considered to be a reasonable independent assessment of costs (noting that they will include an element of profit for NGM). There was a quoted rental for credit meters of £15.12 per customer and a rate of £37.84 for PPMs giving a differential of £22.72. If we added back the £1.25 cross subsidy that exists (see paragraph 58) this gave a reasonable estimate for these three differential elements for gas PPMs. Taking maintenance and installation into consideration this also appeared comparable to our implied rental in paragraph 98.

100. There was also an increased cost to maintain PPMs and we considered the data supplied in response to our information request to calculate what this might reasonably be. We note that the data submissions in this area varied in that some suppliers quoted maintenance and installation charges within the rental charge while others split the costs out. The difference in maintenance cost was in the range £3–£5 for electricity and £3–£8 for gas PPMs (gas PPM maintenance charges are more often included within the rental charge). We considered that the bottom end of each range reflected an efficient level and used the average level of meter maintenance costs incurred by the Six Large Energy Firms as the upper end of our range.

101. Initially, for the cost of meter reading, from the data submitted to us by suppliers there was no common view on whether a difference in cost exists. In response to our queries it became clear that suppliers generally believed that PPMs cost less to read than credit meters.[40] We could see no clear reason why these meters would cost more to read and in these circumstances we

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[37] This is based on the timescale for introduction of smart meters. Centrica told us that prior to this electricity PPMs had an expected life of 15 years and gas PPMs ten years.
[38] Consistent with that used in our ROCE calculations.
[39] Excluding Scottish Power's data, since it advised that although the metering data at a total level was robust, the individual metering constituents as implied by the data submission may be less robust that the total 'cost to meter'.
[40] the only data response that showed a positive value was Scottish Power's but it explained that meter costs by line item may be less robust than the overall allocation of total metering costs.

reflected the majority of submissions which suggested there was a negative difference in the cost to read PPMs.

102. Meter installation costs – we understood from SSE that there [✂] installation cost between a credit meter and a PPM although Co-operative Energy suggested that there was [✂] installation cost for gas PPMs. Centrica commented that gas PPM installation costs were higher since the installation was longer than for a credit meter and that there is a higher rate of aborted jobs on PPM installations. We noted that where additional costs were incurred for warranted entry suppliers generally attempted to recover these from the specific customer and therefore we did not include this in our differential estimate (it could also be said that these costs relate to debt that had arisen under credit meters and were not a cost of PPMs).

103. Meter removal costs – we understood that removal costs were likely to be similar between meter types. If there were some costs that are not recovered (whether the PPM is debt related or not) it would seem reasonable to spread over the whole customer base (this implied there was no differential).

Parties' comments

104. Scottish Power told us that, instead of looking at market prices for meter rentals to estimate the differential on a bottom up basis, we had instead substituted our own 'back of the envelope' calculation based on annuitizing over 5 years the difference between the upfront capital cost of the cheapest single-rate standard credit meters on the one hand and cheapest single-rate prepayment meters on the other hand. It noted that our approach effectively assumed the same economic lifetime for both credit and prepayment meters, whereas in practice the latter were exchanged more frequently and suffered greater 'wear and tear'.

105. Scottish Power had analysed the bills for the portfolio of meters it rented between its legacy and non-legacy meter providers and found the weighted average differential between credit and prepayment meters to be £46 per dual fuel customer per year, £17 in excess of this element of our estimate. It told us it would have expected some variation across suppliers depending on their respective proportions of legacy and non-legacy meters and their choice of non-legacy meter provider, but not of this order of magnitude.

106. EON also told us that the rental cost differential was much higher in practice. . In relation to meter rental levels we appeared to have relied heavily on NGM's published rental rates. However it was not commercially viable for suppliers to rent all their meters from NGM as NGM did not also supply smart meters. As a result EON, in line with other suppliers, had turned to other meter providers

who did and incurred a higher differential as a result. EON also highlighted that there were advantages of renting meters from other providers through "deemed contracts" in that the meter supplier, rather than the energy supplier, bore the responsibility of fixing faulty meters.

107. Utilita told us that a disproportionately higher number of prepayment meters were new, and, due to the Smart Meter roll out deadline, were likely to be in situ for a shorter period, which would lead to higher differential for meter rentals.

108. SSE told us that we should not have capped annual gas metering costs at £24 when estimating the extent of the differential. This figure had been derived from National Grid's published charges. National Grid was just one Meter Asset Manager among 32. We had not explained why all of the Six Large Energy Firms had incurred gas metering costs per year in excess of this level. In its view it was not appropriate to choose a benchmark not achieved by any of the Six Large Energy Firms.

109. EON told us that we had not taken account of meter termination costs. Suppliers like EON incurred premature termination charges when renting meters from metering providers. The level of fees was linked to the remaining economic life of the meter and the normal annual rental fees. EON quoted a current £1 per customer per year differential in this respect. Scottish Power made a similar point.

Our consideration of PDR comments and impact on our analysis

110. We note there is a large variation in the accounting costs of metering per customer across suppliers for both the DD and PP segments, with Scottish Power having relatively high meter cost differentials (see paragraph 57) compared with the other energy suppliers, as reflected in its submission above. We did not wish to replicate this variation in our bottom up exercise but rather identify, where possible, external benchmarks for metering cost, which estimates based on capital costs and the NGM rates provide.

111. We considered that E.ON's submission – that energy suppliers contracted with alternative meter providers with higher charges, in part because those providers also supplied smart meters – did not provide a reason to reflect these higher charges in the cost differential for dumb meters, which is what our analysis seeks to identify.[41] We do not consider it appropriate to increase

[41] We note that even if these suppliers charge more for dumb meters than NGM, this additional cost should correctly be allocated to smart meters if the reason for paying more for those dumb meters is in order to obtain smart meters.

the differential to take account of any differential impact on outturn costs as a result of smart meter roll out. This is because the smart meter roll out will reduce the indirect costs of supplying PP customers to broadly the same level as DD customers (and we have not sought to reflect this cost reduction in our analysis of the PPM-DD cost differential).

112. With respect to the assumptions we had made regarding the lifetime of credit and PP meters and the smart meter roll-out, we observed that the five year time period was significantly lower than the actual life of the meters, in part to reflect the smart meter roll out programme. Centrica told us that prior to the introduction of this programme, electricity PPMs has an expected life of 15 years and gas PPMs an expected life of 10 years. Therefore, we consider our 5 year assumption to be conservative.

113. We noted the submissions that the observed variation in accounting costs per customer is not least due to the level of meter rentals charged by each suppliers' mix of legacy and non-legacy meter providers, a mix which may not have been wholly determined by the active choice of the supplier concerned. However, there also appears to be an interplay between the various sub-elements of metering costs with the higher rental costs of non-legacy meters offset, at least to some extent, by the fact the meter supplier takes on the responsibility for fixing faults. We concluded that the most appropriate means of taking account of these submissions in our analysis was to modify our granular assessment of metering rentals to increase our upper bound for gas metering rentals by £1 per year to equate to the Six Large Energy Firm average differential, so that the upper bound is not effectively capped by the level of National Grid's charges. As a result, our cost differential estimate reflects the Six Large Energy Firms' reported differentials. We have not, however, reflected the additional metering cost differentials suggested by some parties (eg Scottish Power).[42]

114. In the area of meter termination we have also increased the upper bound of our granular assessment of the differential by £1 per customer per year (EON's estimate) on the grounds that we had not included an estimate for this in our original analysis.

[42] We note that Scottish Power's estimate of the meter rental cost differential was significantly above the average differential recorded in the Six Large Energy Firms' accounting information. For this reason, we did not consider it appropriate to place reliance on this figure over the other evidence gathered in conducting our 'bottom-up' assessment of cost differentials.

Working capital costs differential

115. Suppliers have indicated that the need for working capital differs depending on payment type. Customers who pay on SC terms require the most working capital while PPM customers should require little or no working capital since they pay for their energy before consumption. As discussed in paragraph 66, where PPM customers have debt arising from a period during which they had a credit meter, we consider that the cost of holding this debt relates to serving DD / SC customers and not PPM customers.[43] The position for those customers who pay by DD appears to vary between suppliers. Some suppliers show a large prepayment from customers (SSE [✂] per DD customer on a dual fuel basis; Ovo Energy about [✂] on the same basis) while the remainder range from [✂] per customer.[44] In response to our request for clarification, SSE told us that all payment plans were designed with the intention of keeping the account balance at zero on the anniversary of the plan being set up, however this was rarely possible in practice. We consider that customers who pay by DD expect to pay one-twelfth of their annual fuel bill each month. If the DD is set correctly the actual average amount owed will, depending on actual consumption, the time of year, and price movements, be slightly in credit or debit. Over all customers the balance might be expected to net to nil. Given these observations we considered that an adjustment for working capital was not required for the purposes of our granular assessment.

Bad debt differential

116. In the PDR we did not consider that large amounts of debt should attach to PPM customers. By definition these customers would, by and large, pay for their energy usage in advance. We, therefore considered that PPM customers would have a lower cost of bad debt collection than DD customers and so any price differential to DD customers would be negative. Several suppliers suggested that bad debt costs were attributable to the PPM meters as the customers with these meters had previously had a poor payment record when they had a credit meter. We did not accept this argument on the grounds that while the debt may be repaid while the customer has a PPM meter, the debt was incurred – and thus the cost arose – while the customer had a credit

[43] Where PPM customers are acquired by an energy supplier and bring with them debt from their previous supplier, we considered that the cost of holding this debt could be considered to be a cost of serving PPM customers (from the acquiring firm's point of view), even where the debt had originally arisen on a credit meter. However, as explained in the footnote to paragraph 66, we concluded that there were sufficiently few such switches each year for such costs to be negligible. On this basis, we concluded that we should not make explicit adjustment for these costs as part of our granular assessment of cost differentials.
[44] Using unadjusted data as submitted by suppliers.

meter. We therefore in the PDR had not allowed for the possibility of a PP customer incurring bad debt in its own right in this analysis.

Parties' comments

117. Economy Energy told us that it operated almost exclusively in the prepayment sector of the market. It had never installed a prepayment meter in place of a credit meter in order to recover debt. It, however, incurred bad debt on meters particularly in cases of change of tenancy where standing charge had been allowed to build up. EON made the same point giving three scenarios under which it was possible for a PP customer to incur bad debt in its own right.[45] Were this customer to move on without giving their new details, then the supplier might not be able to chase for payment

Our consideration of PDR comments and impact on our analysis

118. We recognise that it is possible, for the reasons set out by Economy Energy and EON above for a PP customer to incur bad debt in its own right, albeit it to a (much) more limited extent than would be possible on standard credit or direct debit terms. EON submitted that we should allow bad debt for a PPM at £5 per fuel, ie £10 in total, based on the amount of emergency credit it could incur. However, we noted that this represented a limit on credit rather than an average bad debt cost and that, even when such credit was used, suppliers would generally be able to recoup it when customers topped up their meters. We considered that a reasonable allowance for bad debt costs was half the average bad debt cost of DD customers, ie around £2.60 per dual fuel customer. We have modified the upper bound of our granular assessment to reflect this.

Central overheads differential

119. In the PDR we noted that two suppliers had allocated more central overheads proportionately to PPM customers suggesting this was reflective of the actual activity. For our bottom up analysis we set out that the major cost differentials are in the cost of payment collection activity and cost of metering. These costs were therefore all external activities and we did not therefore agree that there should be a differential for such central overhead costs. This was reflective of the approach taken by the majority of the Six Large Energy Firms in their cost submissions.

[45] EON gave one further scenario where the customer brought outstanding debt from its previous energy supplier with it. See paragraph 66 for our response to this scenario.

Parties' comments

120. SSE submitted that we had, in its view, ignored the potential for their being a differential between DD and PP customers. In its view, we had made an unfounded assertion that the differential primarily related to externally sourced activities (ie metering and payment services).

Our consideration of PDR comments and impact on our analysis

121. We recognise that there is a potential for suppliers' to incur support costs in relation to activities which may be managed in-house such as call centre costs and would include such support costs which have been caused by the relevant activities in question. In respect of call centre costs, for which we are now including within our analysis based on Scottish Power's costs, it told us that its accounting costs included its business overhead to support its sales channels. We have therefore made no further adjustment in this respect.

Comments on other items which might cause a cost differential

Parties' comments

122. Economy Energy noted that our PFs/ PDR reports indicated that among PP customers there were significantly more disabled people and single parents than among the wider customer base. This led to a much a higher likelihood of these customers being on the Priority Services Register. This would in turn mean a number of services would be offered to these customers at no additional cost. As more device issues occurred with prepayment meters this would increase the cost differential.

123. EDF, whilst accepting that there was no recent data relating to prepayment meter key fraud, told us that this issue required further examination rather than us assuming that the loss of income associated with this fraud was not material, and therefore not a source of differential in terms of the net cost of supplying PP rather than DD customers.

Our consideration of PDR comments and impact on our analysis

124. We have considered the available evidence on meter key fraud in paragraph 61 and used this to inform our approach.[46] With respect to Economy Energy's submission on the prevalence of PSR customers on PPMs, we noted that the

[46] We do not accept EDF's submission, therefore, that we have made assumptions in this respect without searching for evidence.

results of our survey (see Appendix 9.1, paragraph 300) showed that customers on the PSR were only marginally more likely to have a PPM than a standard credit meter.[47] On this basis, we concluded that the additional costs of serving PSR customers were unlikely to have a material impact on our assessment of the overall DD-PPM cost differential and, therefore, should not be included in our analysis. However, we note that, to the extent that there is any difference in PSR costs across customers by payment type, these should be reflected in the cost submissions of the suppliers, and therefore in the estimate of the differentials derived from that basis.

Impact on differential of move to smart meters

125. We also considered what impact the move to smart meters will have on the differential costs compared with existing customers who pay by DD. Since almost all customers will move (eventually) to smart meters there will (at that point) be no, or negligible, differential costs of metering. (The existing costs of PPMIP will disappear and the need to use the services of a payment provider will not be essential -- PPM customers could phone up to top up). We therefore considered that a move to smart meters would substantially reduce the cost differential to DD.

Revised analysis based on granular approach to estimating the DD-PP differential

126. The following analysis sets out our modifications to the analysis we set out at in the PDR.

[47] This appears to be due to the fact that customers aged over 65 comprise 30% of respondents but 68% of customers on the PSR (Appendix 9.1, paragraph 251). However, these older customers are significantly less likely (than average) to have a PPM (Appendix 9.1, paragraph 300).

Table 7: Granular approach to estimating the DD-PP differential

£ per customer per year

	Numbers as set out in the PDR						Revisions				Updated cost differentials					
	Elec		Gas		Dual fuel		Elec		Gas		Elec		Gas		Dual fuel	
	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High
Metering																
Rentals	10.29	12.40	21.10	21.57	31.39	33.97	-	-	-	1.06	10.29	12.40	21.10	22.63	31.39	35.03
Maintenance	3.00	4.61	1.94	2.62	4.94	7.23				1.25*	3.00	4.61	1.94	3.87	4.94	8.48
Installation	0.82	1.49	1.00	1.36	1.82	2.85					0.82	1.49	1.00	1.36	1.82	2.85
Removal	-	-	-	-	-	-	-	1.00	-	1.00	-	1.00	-	1.00	-	2.00
Reading	(1.50)	-	(1.58)	-	(3.08)	-					(1.50)	-	(1.58)	-	(3.08)	-
Subtotal metering	12.61	18.50	22.46	25.55	35.07	44.05	-	1.00	-	3.31	12.61	19.50	22.46	27.61	35.07	48.36
Cost to pay																
Paypoint / Payzone charges	6.62	6.84	5.99	7.38	12.61	14.22					6.62	6.84	5.99	7.38	12.61	14.22
Itron & Siemens charges	3.60	5.03	6.11	6.79	9.71	11.82					3.60	5.03	6.11	6.79	9.71	11.82
Other servicing costs																
Bad debt	(2.64)	(1.70)	(2.56)	(2.00)	(5.20)	(3.70)	-	0.40	-	0.70	(2.64)	(1.30)	(2.56)	(1.30)	(5.20)	(2.60)
Call centre	(0.10)	0.10	(0.10)	0.10	(0.20)	0.20	-	3.00	-	6.00	(0.10)	3.10	(0.10)	6.10	(0.20)	9.20
Other costs	(0.80)	(0.20)	(0.70)	(0.20)	(1.50)	(0.40)					(0.80)	(0.20)	(0.70)	(0.20)	(1.50)	(0.40)
Grand total	19.29	28.57	31.20	37.62	50.49	66.19	-	4.40	-	10.01	19.29	32.97	31.20	47.63	50.49	80.60

Source: CMA analysis
Notes: *This adjustment increases the upper end of the range to be consistent with the average level of meter maintenance costs reported by the Six Large Energy Firms. (See paragraph 100).

127. The net effect of our adjustments to the analysis set out in the PDR based on a line by line assessment of costs is to somewhat increase the level and range for our estimate of the differential from £50 to £66 per dual fuel customer per year to £50 to £81.

Comments on how we had weighted up the evidence set out in the PDR in drawing our provisional conclusion

128. In weighing up the evidence as set out in the PDR, we put forward 4 potential estimates of an "efficient" differential:

(a) the average differential of the Six Large Energy Firms of £63 per dual fuel customer per year[48];

(b) the smallest cost differential of the Six Large Energy Firms of EDF of £54 per dual fuel customer per year;

(c) the differential of Utility Warehouse, which had the highest number of PPM customers of the Mid-tier Suppliers, of £42 per dual fuel customer per year; and

(d) our bottom up calculations which ranged from £50 to £66 per dual fuel customer per year.

129. In the PDR we concluded that a range of £50-£66 per dual fuel customer per year was reasonable. We considered it reasonable to choose the low end of this range for our spot estimate of £54 per customer per year (£22 electricity and £32 gas) as elsewhere within the PDR we had considered the need for a safety margin (headroom) in the design of our proposed price cap.

130. We have grouped parties' comments on our weighing up the evidence into a number of themes as set out below.

Particular relevance of information based on suppliers' accounting costs

131. RWE and Utilita told us that we had underplayed the relevance of suppliers' accounting cost information. RWE considered that estimates based on Six Large Energy Firm cost differentials would cover the right scope of costs and be based on accounting costs from large stable businesses which had been supplying a substantial proportion of prepayment customers over the longer term. In its view it would provide the most reliable evidence of the cost

[48] Further adjustments had been made to suppliers' cost submissions beyond those set out in paragraphs 59 to 60, namely 'central overhead', 'sales and marketing' and 'other' costs were excluded. The outturn gas differential had also been reduced to the cost of an unsubsidized gas meter rental from NGM by about £5.

differential. Our bottom up assessment, if properly performed and based on a balanced assessment of the evidence, could provide a useful cross check.

132. Utilita explained that while it understood why we had sought to estimate the differential on a bottom-up basis, it was appropriate to review that analysis against the cost dataset as a whole (albeit after making a sensible selection of suppliers). A top-down (ie using accounting costs) approach was important, as it avoided cost allocation issues between different cost items and reflected the actual circumstances of the suppliers.

The concept of the "efficient differential"

133. SSE told us that, rather than us regarding the lowest differential among the suppliers' accounting costs as an indicator of efficiency, we should look to the differentials of the Six Large Energy Firms that were most efficient at serving both DD and PP[49] customers. Unless we were able to satisfy ourselves that the costs provided by any individual suppliers were in and of themselves at an efficient level we could not logically conclude that the difference between them represented the level that would be achieved by a cost-efficient supplier. Centrica and RWE made similar points.[50]

134. SSE suggested that, in deriving a cost differential, we should compare the costs per customer per year of the least cost supplier for one customer payment type with the equivalent costs for the least cost supplier for another customer payment type. We could do this for electricity and gas separately and then add the two differentials together or, as we had done with [✂] for the DD-PP differential and [✂] for the DD-SC differential, or by considering the efficiency of suppliers on a dual fuel basis.

135. SSE advocated an approach that averaged estimates of the cost differential across a number of sources. Such an approach would be more robust than picking out the costs for individual suppliers where it was not possible to substantiate that these costs differentials were at an "efficient" level. SSE did not recommend us relying on the differential for a single firm for our central estimate, but believed this was an important indicator of where the efficient level of differential might lie.

The relevant benchmark for assessing efficiency

136. Utilita noted that we had calculated the differential between DD and PP meter customers primarily using the Six Large Energy Firms' data on the grounds

[49] and SC customers for the PP-SC differential
[50] See Annex A, paragraphs 36 to 38 and 57.

that many Mid-tier Suppliers did not have sufficient prepayment customers for a robust prepayment specific analysis. In its view we should have cross checked our analysis against the costs of an efficient prepayment specialist like itself (albeit lacking some economies of scale due to portfolio size), that should be at or near the efficiency frontier for prepayment operation.

Variation in costs across suppliers due to circumstances outside their individual control

137. Centrica told us that we had not provided any evidence to support the inference that variations in the level of the cost differential across suppliers represent inefficiency. In its view, there were many drivers of the costs to serve PPM customers that were largely outside the control of suppliers (e.g. the payment technology chosen, the geographic spread of customers), and other reasons why costs might vary between DD and PPM segments regardless of how carefully a supplier worked to control costs (e.g. the relative scale of the two customer segments). Similarly suppliers might make technology decisions that reduced costs for DD customers but increased them for PPM, for example (e.g. selecting a particular IT system that worked better for some customer groups than others) – but this could not be represented as an inefficiency in relation to PPM.

Relevance of Utility Warehouse's accounting costs

138. Centrica did not believe it valid to benchmark costs across the entire PPM supply sector on the basis of a supplier (Utility Warehouse) holding [✂] of all PPM accounts. RWE also considered us to be inconsistent by, on the one hand, placing weight on the cost differential of Utility Warehouse but, on the other hand, excluding this firm's prices when determining the prepayment price benchmark.

139. Likewise SSE noted we had rejected using Utility Warehouse tariffs to establish benchmark competitive prices which were then used to estimate the level of any consumer detriment.

140. SSE also noted we appeared not to have investigated elements of Utility Warehouse's cost submission which appeared to SSE to be implausible. In particular, it stated that Utility Warehouse's gas metering costs for 2014 appeared to be implausibly low. This level was far below the £38 per customer per year rental payment charged by National Grid and almost three times less than the lowest reported figure from the Six Large Energy Firms ([✂] per customer per year). In SSE's view it was not appropriate for us to use Utility Warehouse's cost information to cast doubt on the average cost differential across the Six Large Energy Firms.

141. EDF pointed out that Utility Warehouse's overall differential had been so low because it had a very low differential for gas customers ([✂] per customer per year). In fact, Utility Warehouse's electricity differential ([✂]) was higher than what we had proposed to allow (£23). EDF drew attention to our observation that Utility Warehouse had a somewhat different business model to other suppliers and had recently [✂]. We had acknowledged for other Mid-tier Suppliers that a rapidly growing customer base could have had a volatile impact on the reported costs per customer for certain cost items but not here.

Need to tailor specification of differential to ensure suitability for our wider analysis

142. Centrica also highlighted that we needed to make sure that we had handled bad debt correctly within our overall analysis. This was because when deriving our estimate of the detriment / calibrating the price cap we were using the DD prices of [✂] as our starting point. These latter prices would reflect [✂] rather than Six Large Energy Firm bad debt levels for DD customers. It would not be appropriate to derive a cost differential without taking into account any differential between Six Large Energy Firm and [✂] DD bad debt levels.

143. Utilita noted that the customer base of [✂]and [✂] were active and competent internet-users, circumstances which were not replicated across the sector. This would imply a lower DD per customer cost to serve than the sector as a whole. This was borne out by the cost to serve figures for [✂] and [✂] which were lower than those for the Six Large Energy Firms. Without adjustment, this would mean that a differential based on a comparison of Six Large Energy Firm costs would be too low.

Distinctiveness of the "bottom up" costing approach to estimating the DD-PP differential

144. Centrica noted that though in the PDR we had termed our "bottom up" analysis, in many cases the assumptions used appear to be based on the same cost submissions provided by the Six Large Energy Firms for the "top down" (ie accounting costs) analysis. Therefore the fact that the two approaches resulted in a similar proposed differentials should not be surprising.

145. SSE told us that we had sought to conduct a bottom up analysis without having access to accurate, highly disaggregated cost data. Instead, we had, albeit with some limited exceptions (for example, National Grid gas metering rental charges), used the cost submissions of the Six Large Energy Firms as our primary information source, submissions we had considered to have suffered from numerous shortcomings.

Placing primary weight on the bottom up range / selecting from towards the bottom of the range

146. RWE noted that we had identified four sources of evidence for this differential: the first one related to the adjusted[51] average Six Large Energy Firm cost differential, the next two related to individual firms with the lowest differentials (among the Six Large Energy Firms [✂] and among all suppliers analysed [Utility Warehouse] respectively), and the fourth was the range that came out of our bottom up model. It inferred that because the range we proposed accorded with the range from the bottom up model, we had placed primary weight on that model. RWE did not consider that this was appropriate.

147. Centrica said that it did not see any reason why it had been appropriate to choose the bottom end of the bottom up range for our "spot estimate" of £54 per dual fuel customer per year. This figure was below the cost differential of all but one of the Six Large Energy Firms. A more pragmatic approach would be to use the average differential across the Six Large Energy Firms. It noted that we believed that to be £63 after our adjustments and therefore it would expect this to be a reasonable benchmark.

148. Centrica advocated values towards the centre of the range as providing the best estimate. RWE made a similar comment, highlighting that the headroom in the proposed price cap should not be seen as providing a margin for error in our spot estimate.

Our response to comments on how we had weighed up the evidence

149. In light of these comments we have re-considered the way we have evaluated both our analysis of the differential based on suppliers' cost submissions and our more granular assessment as follows.

Accounting costs approach to estimating the differential

150. We consider that, despite the potential for variation in how individual suppliers had attributed their costs across the different customers by payment type, estimates of the differential based on suppliers' accounting costs have an important role to play. We agree that the correct approach is to consider the cost differentials based on the accounting costs for efficient suppliers, rather than placing weight on the costs of suppliers whose differentials were the lowest among the sample.

[51] See footnote to paragraph 128(a) for an explanation of how the costs were further adjusted.

151. We recognise that some variation in the differential across suppliers may arise from circumstances outside the control of individual suppliers, for example the geographical spread of customers. As a result, we have looked at estimating cost differentials a number of different ways to avoid overreliance on any one measure. Our analysis is predicated on estimating an efficient differential based on the indirect costs of serving a typical DD customer compared with that of the typical PP customer, and is not intended to be supplier specific.

152. Bearing in mind we had obtained three years' worth of cost information (2012 to 2014 inclusive) we did consider preparing this estimate of the cost differential based on accounting costs averaged over three years. However, we found that it did not make a significant difference to the outcome of our assessment. Therefore, we have continued to use cost estimates based on the 2014 financial year.

153. We considered Utilita's suggestion that we should have cross-checked our analysis against its cost to serve data. However, we thought that such a comparison would not provide additional insight for two reasons. First, Utilita does not offer credit meters and therefore does not have information on the costs to serve DD customers. Second, the large majority of Utilita's customers have smart meters, such that their costs to serve are unlikely to be relevant to those of serving dumb PP customers.

154. We noted the various submissions on the relevant of Utility Warehouse's cost data. We did look at its metering costs and observed that its metering costs for credit meters were similar to the levels achieved by some of the other firms. In contrast, we agree that Utility Warehouse achieves the lowest metering costs per customer for prepayment customers, which raises questions regarding the reliability of some of this element of its data. However, it is important to note that there are also wide variations in the level of the costs incurred for a number of items across the Six Large Energy Firms as well and that these are also reflected in the analysis of accounting costs. (See paragraphs 49 to 58 and 74 where we discuss the Six Large Energy Firms' information, the apparent limitations in this data and the wide range of cost differentials shown). We have not, therefore, excluded Utility Warehouse from our set of comparator companies altogether. However, as set out in paragraph 162, in coming to a view on the reasonable cost differential for an efficient firm, we have considered the impact on the measured differentials of using just the Six Large Energy Firms' data.

155. We have also, in our revised evaluation of the accounting evidence, removed the £24 per year cap on gas metering costs that we had applied when weighing up the accounting evidence in the PDR. This is because we want to

keep quite distinct the estimate of the differential based on suppliers' accounting costs from the granular assessment of the cost differential.

"Bottom up" costing approach to estimating the differential

156. In the PDR we also sought to estimate the differential using an alternative approach basis to avoid solely relying on suppliers' cost submissions. In the absence of a requirement for suppliers' to attribute their indirect costs across customer payment type using a common approach, it was inevitable that their approach to this exercise would depend on the extent to which individual suppliers had the ability to nuance costs routinely reported at an aggregated level (eg call centre costs) by payment method. It was also inevitable that certain suppliers costs for any one period might have been influenced by one off factors and that some suppliers might be inefficient.

157. This alternative approach to estimating the differential is best characterised as a granular approach: rather than relying on suppliers' total accounting costs we sought to consider each retail activity item individually and separately assess whether it would cause a cost differential. For those items which we thought there would be a differential, we then sought to estimate the level of that differential, often relying on information from third parties to inform the lower bound of our range and the accounting cost submissions of the suppliers to inform the upper bound.

158. This exercise was predicated on the basis of estimating the differential costs of a supplier of scale respectively serving the DD and prepayment segments separately on the grounds that only a supplier of scale was likely to exhibit a level of efficiency in the level of its indirect costs. On this basis, the points that Utilita and Economy Energy have raised regarding the higher costs that smaller players may incur for certain items such as payment services are not relevant to this exercise. This exercise was also predicated on the basis that we were estimating the differential based on the efficient costs of supplying a PP customer using a dumb meter. (We believe that is likely to be little or no differential between DD and PP customers on a smart meter.)

Need to tailor specification of differential to ensure suitability for our wider analysis

159. Centrica and Utilita highlighted that any differential needed to reflect the difference between the costs levels that [✂] incurred and those that (efficient) Six Large Energy Firms incurred in supplying PP customers, and not assume that [✂]and Six Large Energy Firm DD indirect costs of supply per customer were necessarily comparable.

160. We consider this to be an empirical question, not just limited to levels of bad debt that Centrica highlighted. We observe that the level of indirect costs per DD customers incurred by [✂] are somewhat higher than those incurred by the lower cost Six Large Energy Firms and therefore the basis for any further adjustment does not appear to be warranted. We also note that for most Six Large Energy Firms levels of bad debt on a DD customer basis are low.

Conclusion on the DD-PP differential

161. As set out below, we have sought to apply a common approach to weighing up the evidence across re both the DD-PP and DD-SC differential and one which places appropriate weight on both the estimates derived exclusively from suppliers' accounting costs and our more granular assessment.

162. Our analysis has provided a number of potential estimates of an efficient differential in the costs of serving PPM as opposed to DD customers:

(a) Under the approach put forward by SSE to identifying the cost differential for the efficient supplier (ie identifying the most efficient DD supplier for each fuel and comparing these costs with those of the most efficient PPM provider for each fuel), this gives a DD-PPM cost differential of £60 (£26 for electricity, £34 for gas). We also considered what the differentials would be if Utility Warehouse were excluded from the comparison set, ie only the cost data of the Six Large Energy Firms were considered. This generated a cost differential of £76 (£22 for electricity and £54 for gas);

(b) Alternatively, one could identify the most efficient supplier in each category and examine its reported PPM-DD cost differential. Taking this approach, the cost differential for the most efficient DD providers was £77 (£43 for electricity ([✂]), £34 for gas ([✂]), and the differential for the most efficient PP providers was £55 (£21 for electricity ([✂]), £34 for gas ([✂]);

(c) Our more granular assessment provides a range of cost differentials of £50 to £81 per dual fuel customer (£19–£33 for electricity; £31–£48 for gas).

163. We observed that SSE's proposed approach (the results of which are in paragraph 162(a)) assumes that the relevant cost differential is that between the most efficient supplier in each payment category. This is in contrast to Centrica's submission, which highlighted that suppliers might make technology decisions that would reduce costs for certain customers but increase them for others, but that such a decision could not be considered to be inefficient. We considered SSE's approach to be preferable since, in a

well-functioning market, we would not expect PPM customers to face higher costs due to the technology choices of particular suppliers. Therefore, we have focussed on the differentials set out at (a) and (c) above. Table 8 summarises the cost differentials by fuel on these bases.

Table 8: Estimates of cost differentials by fuel

		£ per customer	
Cost estimate	*Electricity*	*Gas*	*Total*
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.

164. We observed that the cost differential estimates for electricity were relatively consistent across the approaches at around £22 to £26. On this basis, we concluded that £24 represents a reasonable estimate of the cost to serve differential for electricity customers. For gas customers, we observed that there was a greater range of estimates (from £34 to £54) and consequently greater uncertainty over the cost differential for an efficient supplier. Given the significant variation in both the energy suppliers' estimates of the costs to serve gas customers (both PPM and DD), and the differential in costs of serving these PPM and DD customers[52], we concluded that we should place more weight on our granular assessment of costs. We have, therefore, used the mid-point of that range, which gives a gas PPM-DD cost differential of £39. Combining these two figures gives a dual fuel cost differential of £63.

Section 3: Analysis of DD-standard credit indirect costs differential

Introduction

165. As part of our work on overall detriment we have analysed various aspects of the tariffs on offer. To complement our understanding of differences between tariffs we need to understand what the additional indirect costs (if any) there are between those customers who pay by SC and DD.

166. The indirect costs of a supplier serving those customers who pay for their energy on SC are different compared to the cost of serving those customers who pay by DD. This is mostly reflective of the cost of funding longer periods of credit than for DD customers and higher costs associated with bad debt.

[52] For example, we note that the energy firms' (Six Large Energy Firms plus Utility Warehouse) estimates of the costs of serving gas DD customers range from around £40 to around £70, while those of serving PPM customers range from around £70 to £140, with the reported cost to serve differential between gas PPM and DD customers ranging from £25 to just over £70.

Typically an SC customer who pays on receipt of a quarterly bill (which, including production of bill and delivery time), would on average pay about 75 days after consumption[53].

167. In the review carried out by Ofgem in May 2014 the differential between SC and DD customers was suggested to be around £74 (electricity £35; gas £39)[54] although this excluded the impact of working capital differences.[55]

168. In order to understand the cost differences arising from different payment methods we asked suppliers to provide us with their understanding of their indirect costs allocated between DD customers, SC customers and PPM customers. Suppliers were asked to allocate the cost of bad debt to the payment category under which it arose (debt is frequently transferred to PPM to be recovered but does not arise under this payment type and so we do not consider this a cost of PPM customers).

Approach adopted to this analysis as set out in the PDR

169. In the PDR we set out our analysis of the suppliers' cost submissions for 2014 expressed on a per customer basis. We had asked the suppliers' to analyse their indirect costs across customer payment types in a particular way for certain cost categories and where it was evident that they had not done so, we made adjustments to their cost information as explained below.

170. Separately we set out the outcome of our "bottom-up" analysis where we had looked granularly at each cost item which we thought might contribute to the differential. For each item we estimated a range of costs, using a combination of third party information on prices and measures of Six Large Energy Firms' accounting costs based on their cost submissions.

171. We then used both sets of analysis to inform our provisional conclusion about the possible range for the differential and our "spot estimate" (£82 per dual fuel customer per year) to use in the provisional detriment calculations.

Comments on the analysis on the DD-SC differential set out in the PDR

172. We received only one substantive response on this differential from SSE. SSE told us that we had materially understated the differential which, in its view, should have been informed by average level of cost differential observed for

[53] Assuming 90 days in a quarter, the average will be 45 days after consumption of energy, plus up to 30 days to settle.
[54] Based on data from five of the Six Large Energy Firms.
[55] Ofgem open letter (20 May 2014), Price differences between payment methods, Figure 1.

the Six Large Energy Firms. SSE argued for a differential of at least £99 per dual fuel customer per year.

173. Centrica and EON made some reference to this differential in their responses. Centrica noted that comments similar to those it had made on the DD-PP differential would apply here too.

174. We refer to these comments and our response to them in the relevant subsections below. Full summaries of responses are contained within the party-by-party analysis in Annex A to this appendix.

Accounting costs approach to estimating the DD-SC cost differential

Commentary on suppliers' cost submissions as set out in the PDR

175. As we commented in Section 2 of this appendix, we have concerns with the way in which some suppliers' responded to our request for information. We do not repeat those concerns here although they remain valid for this analysis.

176. We noted that the cost of bad debt for SC customers appeared extremely high. While we had used adjusted data to represent where reported PPM debt arose, the Six Large Energy Firms' bad debt costs represented on average 36% of the total cost to serve each SC customer. For Scottish Power, bad debt costs represented [✂]% of the total cost to serve each SC customer (£[✂] out of £[✂]).

177. We also noted a lack of consistency for some suppliers concerning the data submitted to Ofgem in 2014. While different economic conditions and regional factors may have had an impact, the increases in the bad debt differential reported, between SC and DD, ranged from 9–14% to 125% ([✂]) and 172% ([✂]).

178. The information from the Six Large Energy Firms on the level of average prepayment debt from customers and debtor days outstanding gave rise to concerns around consistency. For example, the range of debtor days for gas SC customers was between 106 and 230 days (see Table 11).

Differentials implied by the cost information submitted as set out in the PDR

179. Notwithstanding the limitations observed we considered the results from the submissions and this is shown, including working capital impacts at a cost of capital of 8%, in Table 9. This was produced from the data supplied by the Six Large Energy Firms adjusted as described in Section 2 of this appendix (ie

where adjustments have been made principally to the PPM data they would have had implications for both DD and SC segments).

180. Although the actual cost to borrow was significantly less than this figure, we reflected the return that an investor might expect as this could be considered a decision to invest in working capital rather than other opportunities elsewhere. In the PDR we offset this partially by assuming corporation tax relief on the implied interest cost.

Table 9: Cost differential between SC and DD payment types (Including working capital)

£ per customer

Supplier	*Electricity*	*Gas*	*Total*
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.

181. The range of total differential as set out in the PDR was very large reflecting to a significant extent the ability of individual supplies to control bad debt and manage working capital. If such a cost range existed, it would imply that the most efficient operator was making a margin on costs of almost £70 per SC customer on average. It would also suggest (all other things being equal) that there were large inefficiencies in the SC segments that competition is not driving out.

182. The main cost factor in the differentials was the cost of bad debt and so we separately considered this element of the data supplied to us. This is shown in Table 7.

Table 10: Cost of bad debt per customer

£ per customer

	Electricity		*Gas*		*Differential*		
Supplier	*DD*	*SC*	*DD*	*SC*	*Electricity*	*Gas*	*Total differential*
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.

183. Table 10 shows a large range in the differential cost of bad debt by supplier. We noted that the cost of bad debt per gas DD customer was less on average than that of an electricity DD customer. This was despite gas bills being higher, on average, than electricity bills. As we commented earlier, for

Scottish Power, bad debt costs of SC customers represent 54% of the total cost to serve each customer [✂]. This suggested that every Scottish Power SC customer costs more to service bad debt than all other costs of service.

184. The Six Large Energy Firms also supplied us with information on the average length of time customers in each segment took to pay. This enabled us to review this since the cost of supplying this working capital element should be taken into account when considering the differential cost of SC compared with DD. The Six Large Energy Firms also supplied the number of days that the debt was outstanding for before it was collected. Table 11 shows the data as provided.

Table 11: Debtor days outstanding by payment type

	Electricity			*Gas*		
Supplier	*DD*	*SC*	*PPM*	*DD*	*SC*	*PPM*
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.

185. Table 11 shows the data as submitted to us. Some suppliers followed our guidance and moved all debt from the PPM segments to the credit payment segments where it was estimated to have originated in. Negative values in the table represent customers who have paid in advance. We noted the wide range of time taken on average by the Six Large Energy Firms to collect SC debt and we considered this further below.

Comments made by parties on our adjustments to their cost submissions, our response and impact on our analysis

186. SSE disagreed with our assessment of the cost submissions being of limited value and emphasised the importance of including the cost of financing working capital in the estimate of the cost differential assessed at the cost of capital.

187. We agree with SSE that differentials based on suppliers' (efficiently incurred) costs are a relevant source of evidence here and that the cost of financing working capital is relevant to this assessment. We also agree that the relevant cost of capital for this purpose, in keeping with, for example, our profitability analysis, is 10% per year. We have accordingly updated our analysis to always include the cost of financing working capital at 10%.

Revised analysis based on suppliers' cost submissions

188. In Table 12 we present our revised analysis of suppliers' costs we have included in our analysis. To recap, this is based on suppliers' cost submissions for 2014 after the amendments we processed to arrive at the analysis set out in the PDR and updated to take account of responses thereon as explained in paragraphs 37 to 72 and 186 to 187. In this revised analysis we have excluded all sales and marketing / customer acquisition costs. The costs of financing working capital (debtor or creditor balances) have been included as per suppliers' submissions (at 10% per year).

Table 12: Suppliers' costs of servicing customers DD v SC and associated differentials (2014)

£ per customer per year

	Average per customer (APC)						Dual fuel		
	Electricity		Gas		Differential v DD		DD	SC	
	DD	SC	DD	SC	Elec	Gas	APC	Δ	APC
SSE	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
SP	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
EON	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Centrica	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
RWE	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
EDF	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]
Utility Warehouse	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.

189. This shows that among the Six Large Energy Firms, SSE achieved the lowest unit levels of cost in supplying its DD customers for both gas and dual fuel. Scottish Power, however, was marginally lower cost in the supply in the supply of DD electricity customers. The picture was somewhat different for SC customers in that whilst SSE achieved the lowest unit cost in gas and for dual fuel, Centrica reported the lowest unit costs for supplying SC electricity customers.

190. [✂] achieved lower unit costs than all of the Six Large Energy Firms in supplying both electricity and gas to DD customers but incurred higher unit costs than any of the Six Large Energy Firms on SC.

191. The analysis yields a wide range across the suppliers' in the extent of the differentials between the average cost of supplying a customer on DD with supplying it on SC. SSE and Centrica standout in incurring significantly lower costs than other Six Large Energy Firms in serving SC customers, primarily through being able to manage bad debt / working capital more effectively than their peers.

192. We set out our conclusions on this analysis together with our granular assessment of the DD-SC cost differential at the end of this section.

Granular costing approach to estimating the DD-SC differential

193. Given the wide range in the differentials derived from suppliers' cost submissions we also considered in the PDR a bottom-up approach similar to the one that we used to compare the PPM results. Below we set out the discussion as reflected in the PDR, summarise parties' comments on this discussion and any revision to our approach on an item-by-item basis.

Cost to serve

194. In the PDR we estimated the impact of items in the 'cost to serve' category based on the Six Large Energy Firms' data (excluding RWE whose cost to serve data we found to be unreliable).[56] On average this showed a £15 difference broadly reflecting additional call centre, billing and collection activity. We used this as the top end of our range with the lower end being reflective of the most efficient of the Six Large Energy Firms (Centrica).

Bad debt and the cost of financing working capital

195. In the PDR we considered the level of bad debt charge shown in other organisations. From the global accounts of housing providers[57] we calculated that bad debt was written off at 0.9% of net rental income or approximately £45 per household. The accounts of Severn Trent Water showed a rate of 1.8% of turnover or approximately £9 per customer. We note that the water industry may have restrictions on how it can manage defaulting customers and so might regard this as an upper level. We also noted from the report that collection rates of council tax were 97% within a year and that the actual write off of council tax for 2014/15 equated to 0.8% of that year's revenue.[58]

196. We considered whether the levels of bad debt charge reported were comparable to the reported levels of the Six Large Energy Firms. Since we had reservations about the split of debt data by fuel and payment type we considered the total domestic bad debt charge for each of the Six Large Energy Firms, as reported, compared with total domestic turnover. Table 13 summarises the 2014 position.

[56] See paragraph 55.
[57] Homes and Communities Agency, 2014 Global accounts of housing providers.
[58] Department for Communities and Local Government (1 July 2015), Collection rates and receipts of council tax and non-domestic rates in England 2014-15.

Table 13: Domestic bad debt charge compared with turnover

	£ million		*%*
Company	*Bad debt charge (domestic)*	*Domestic turnover*	*% of turnover*
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]

Source: CMA analysis.

197. From Table 13 we saw that the actual write-off of debt might be considered to be on the high side compared with council tax or housing association rates. We acknowledged that it compared well to water but, in view of the different remedies available to energy suppliers concerning indebted domestic customers (for example the ability to move customers to a PPM), would expect energy suppliers' write off of debt to be more aligned to the council tax and housing association figures. We therefore considered that a rate of 1% of turnover would be a reasonable level for suppliers to target.

198. We noted in Table 10 the wide level of cost differential of bad debt between SC and DD payment types. We recognised the difficulties that the Six Large Energy Firms may have had in producing the data but considered that, although the total cost would reconcile back to company accounting systems, the allocation might not be perfect. We also understood that, when a DD customer was unable to make payment, the account might be transferred to an SC basis. For these reasons we calculated the effect of a minor error in allocation of 5% and found that this would decrease the average differential by £2.50 for electricity and £3.00 for gas.

199. Having applied a 1% turnover cap to bad debt write-off and amended allocations by 5%, the average bad debt values reduced to approximately £26 for electricity and £35 for gas. In the PDR we considered this to be the top end of any range with the bottom point set by the lowest bad debt charge per customer among the Six Large Energy Firms (Centrica).

Parties' comments

200. SSE criticised our reference to council tax rather than water company collection rates to cap the average Six Large Energy Firm bad debt cost differential to set our 'high' differential estimate. SSE noted that Ofgem had imposed a regime which greatly restricted suppliers' ability to disconnect customers in many circumstances.

Cost of financing working capital

201. In the PDR we considered the impact of working capital on the SC differential particularly in view of the data shown in Table 11 which showed a wide range of SC debtor days. If each quarter is 90 days then on average the debt owed will be 45 days old if paid on day 90. Allowing some time for bills to be despatched and customers to actually settle could add another 30 days, so on average if all customers paid on receipt of their bill debtor days would be expected to be 75 days.

202. We acknowledged in the PDR that some debt would take time to collect but, even allowing for only 90% of the debt being collected on average within 75 days, the implied average remaining life of the other 10% would be 225 days (to average out at 90 days). In considering what a reasonable rate might be, therefore, we considered that the price of this credit should be factored into the cost of doing business. It seemed reasonable, however, to assume that while the bulk of customers would pay their bills within our 75-day norm it would be realistic to use an average of 90 days for our calculation of working capital impacts for energy.

203. We therefore considered, based on average debtor days of 90 for both electricity and gas, that a reasonable estimate for working capital (after allowing for relief from corporation tax[59] on a cost of capital of 10%) should be £9 for electricity and £12 for gas. This provided the lower end of our range with the most efficient of the Six Large Energy Firms (Centrica) forming the upper end.

Parties' comments

204. SSE noted that for our 'low' estimate for the cost of holding working capital we had assumed that SC customers should take no more than 90 days on average after consuming energy to pay their bills. Our cost information showed, however, that in fact none of the Six Large Energy Firms had debtor days of less than 90 for either their SC gas or electricity customers. In estimating the cost of holding debt, SSE submitted that we had also incorrectly and inconsistently with our profitability analysis, used a cost of capital net of corporation tax than gross of corporation tax. By assuming that the financing of working capital would all be debt financed we had materially understated these costs.

[59] We assumed that this would be borrowed in some form and that full relief would be available.

Our consideration of PDR comments and impact on our analysis

205. In response to this and other of SSE's observations on our PDR approach to estimating bad debt / cost of financing working capital we have revisited the way we have arrived at this differential. As noted in paragraph 191 there are two Six Large Energy Firms (Centrica and SSE) among all the suppliers (including Mid-tier Suppliers) which clearly standout in terms of managing their bad debt and working capital more efficiently than their peers and we have used their per customer figures as the lower bound of our granular estimate. We have used the next two Six Large Energy Firms (EON and Scottish Power) to inform the upper bound.

Revised analysis based on granular approach to estimating the DD-SC differential

206. The following analysis sets out our revised analysis based on a granular assessment of the differential as explained in paragraph 205. We did not receive any comments on the cost to serve element of the differential and we have not revised this element of our assessment.

Table 14: Granular approach to estimating the DD-SC differential

£ per customer per year

	Electricity		Gas		Dual fuel	
	Low	High	Low	High	Low	High
Bad debt	19	34	20	46	38	80
Cost of debtors	16	26	21	27	37	54
Cost to serve (unchanged)	5	8	4	8	9	16
Total	39	69	45	81	84	150

207. This revised analysis yields a wider range for the estimate in the DD-SC differential than that set out in the PDR -- £84 to £150 per dual fuel customer per year rather than £64 to £105.

Comments on how we had weighted up the evidence set out in the PDR in drawing our provisional conclusion

208. In weighing up the evidence as set out in the PDR, we put forward 4 potential estimates of the DD-SC differential:

(a) Ofgem's latest assessment of tariff differentials of around per dual fuel customer per year of £75;

(b) the differential of the costs suggested by the Six Large Energy Firms of £137 including the cost of financing working capital and £97 without;

(c) the lowest reported differential among the Six Large Energy Firms of £69 including the cost of financing working capital per dual fuel customer per year;

(d) our bottom up calculations which ranged from £64 to £105 per dual fuel customer per year.

209. In the PDR we concluded that a range of £64-£105 per dual fuel customer per year was realistic. We considered it reasonable to choose a spot estimate of £82 per customer per year (£35 electricity and £47 gas) being somewhat greater than [✂] differential

210. We set out parties' comments on our weighing up the evidence below.

High cost differentials did not necessarily harm customers

211. SSE observed that the vast majority of our estimated differential related to working capital and bad debt cost differentials. Both of these items related to the terms on which customers pay for their energy. It pointed out that any alleged inefficiency which results in delayed payment, or in the case of bad debt, no payment by the customer, rather than harming customers benefitted them.

Relevance of pricing information

212. SSE also submitted that only very limited weight should be placed on pricing (tariff) differentials previously reported by Ofgem (£75 per customer per year) as we were seeking to determine a cost differential, not a price differential. SSE also noted that, whilst we had quoted a pricing differential in the context of the DD-SC differential, we had not likewise quoted the equivalent differential for DD-PP (also £75 per customer per year).

The concept of the "efficient differential"

213. Invoking the same logic as with regard to DD-PP differential (see paragraph 133 above) SSE told us it was inappropriate to place weight on [✂] differential. Its low DD-SC cost differential was caused by relatively DD high costs, rather than it being efficient across both DD and SC customers.

Our choice of spot estimate

214. EON noted the large range in our estimate of the differential based on a number of sources. We had not provided an explanation of why we had

chosen our spot estimate of £82 per dual fuel customer per year which was well below the midpoint of £100 of the range of figures we had quoted.

Our response to comments on how we had weighed up the evidence

215. In light of these comments we have reconsidered the way we have evaluated both our analysis of the differential based on suppliers' cost submissions and our more granular assessment as follows.

High cost differentials did not necessarily harm customers

216. We note SSE's observation that there is a sense in which individual customers may not be considered to be harmed by being granted extended payment terms or in extremis not paying at all (ie causing the supplier to incur bad debt). Indeed, some suppliers may offer keenly priced tariffs on the basis that customers might on average pay in advance of consumption. Conversely suppliers may price certain tariffs somewhat higher if the payment terms associated with these tariffs are particularly generous.

217. Our focus in this analysis, however, is ascertaining the differential associated with the efficient cost of servicing DD customers compared with the efficient cost of servicing SC customers. In a well-functioning market, we would expect firms that were more efficient at managing customer debts to be able to offer lower prices than less efficient competitors. Over the longer run, therefore, less efficient firms might be expected to improve their debtor management or exit the industry.

Relevance of "efficient differentials" and pricing information

218. We agree with SSE that limited weight, if any, should be placed on pricing differentials, in this exercise. We have not included these in this revised analysis. Similar to how we our approaching our assessment of the DD-PP differential we seek to place weight on the costs of efficient suppliers, rather than on low outturn differentials which may be a function of high DD costs.

Conclusion on the DD-SC differential

219. As set out below, we have sought to apply a common approach to weighing up the evidence across re both the DD-SC and DD-PP differential and one which places appropriate weight on both the estimates derived exclusively from suppliers' accounting costs and our more granular assessment.

220. Our analysis of the various sources of data has provided different estimates of what the existing level of differential costs between DD customers and SC customers could be:

(a) Under the approach put forward by SSE to identifying the cost differential for the efficient supplier (ie identifying the most efficient DD supplier for each fuel and comparing these costs with those of the most efficient SC provider for each fuel), this gives a DD-SC cost differential of £109 (£53 for electricity, £56 for gas) for the comparator set as a whole, and £101 (£49 for electricity and £52 for gas) if only the Six Large Energy Firms are compared;

(b) Our more granular assessment provides a range of cost differentials of £84–£150 per dual fuel customer (£39–£69 for electricity; £45–£81 for gas) could also be considered appropriate.

221. From the limited evidence available to us, we have found it difficult to determine an exact cost differential. We noted that under SSE's approach to the accounting data, the cost differential was around £101 to £109 (£49 to £53 for electricity and £52 to £56 for gas). The mid-point of the range generated by our granular assessment was £117. However, we noted that this range effectively captured the impact of differing levels of efficiency in collecting debts. As we are seeking to identify the cost differential for an efficient firm, we considered it appropriate to place more weight on the lower end of the range, ie around £84 (£39 for electricity and £45 for gas).

Table 15: Estimates of cost differentials by fuel

		£ per customer	
Cost estimate	*Electricity*	*Gas*	*Total*
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]
[✂]	[✂]	[✂]	[✂]

Source: CMA analysis

222. On this basis, the noted that the range of cost differentials suggested by the various approaches was between £39 and £53 for electricity and between £45 and £56 for gas. We concluded that, in light of the uncertainty over a reasonable cost differential, it was prudent to use figures towards the upper end of this range. On this basis, we have used an electricity cost differential of £47 and a gas cost differential of £53, giving a dual fuel cost differential of £100. This is consistent with the reasonable cost differential of £99 put forward by SSE.

Annex A: Firms' submissions on differentials

1. In Appendix 3.6 to our Provisional Decision on Remedies we set out our approach to, and the results of, estimating the level of a reasonable differential between the level of indirect costs associated with servicing DD customers on the one hand and PP and SC on the other.

2. In this annex, we set out the views of the Six Large Energy Firms and two prepayment segment specialists, Utilita and Economy Energy on the approach set out in the PDR and the level of the differential we had estimated firm-by-firm. For ease of reference and comparison we have grouped comments into the following seven themes. Not all of these firms necessarily commented on all themes.

   (a) overarching approach to estimating differentials

   DD-PP cost differential

   (b) accounting costs approach to estimating DD-PP differential

   (c) bottom up costing approach to estimating the DD-PP differential

   (d) weighing up the evidence on DD-PP differential

   DD-SC cost differential

   (e) accounting costs approach to estimating DD-SC differential

   (f) bottom up costing approach to estimating the DD-SC differential

   (g) weighing up the evidence on DD-SC differential

SSE[1]

Overarching approach to estimating cost differentials

3. SSE told us that, rather than us regarding the lowest differential as an indicator of efficiency, we should look to the differentials for the Six Large Energy Firms that were most efficient at serving both DD and PP / SC customers. Unless we were able to satisfy ourselves that the costs provided by any individual suppliers were in and of themselves at an efficient level – [✂] for the DD-PP differential and [✂] for the DD-SC differential – we could

[1] All of SSE comments, save to the last sentence of the first paragraph, relates to Frontier Economics confidential report 'Evaluation of CMA's "direct approach" detriment analysis', 7 April 2016, paragraphs 3.1.1 to 3.3.24.

not logically conclude that the difference between them represented the level that would be achieved by a cost-efficient supplier. This faulty logic appeared to be the reason why our proposed DD-PP differential of £54 per dual fuel customer per year had been significantly lower than has been found in any previous Ofgem investigation.[2]

4. SSE suggested that, in deriving a cost differential, we should consider comparing the costs per customer per year of the least cost supplier for one customer payment type with the equivalent costs for the least cost supplier for another customer payment type. We could do this for electricity and gas separately and then add the two differentials together or, as we had done with [✂] for the DD-PP differential and [✂] for the DD-SC differential, by considering the efficiency of suppliers on a dual fuel basis.

5. SSE advocated an approach that averaged estimates of the cost differential across a number of sources. Such an approach would be more robust than picking out the costs for individual suppliers where it was not possible to substantiate that these costs differentials were at an "efficient" level. SSE did not recommend us relying on the differential for a single firm for our central estimate, but believed this was an important indicator of where the efficient level of differential might lie.

DD-PP cost differential

6. SSE told us we had markedly understated the differential. In SSE's view the differential should be at least £76 per dual fuel customer per year (£29 electricity, £47 gas) against the £54 we had used.

7. SSE rejected any suggestion that it was not operating at an efficient level of costs. Notwithstanding this, it submitted that any lack of efficiency on the part of a supplier in supplying customers would be expected to increase the level of costs of supplying both DD and PP customers; any impact on the cost differential would be at most second order.

Accounting costs approach to estimating DD-PP differential

8. SSE told us that we had made arbitrary adjustments to the costs provided by the suppliers. For example, we had excluded sales and marketing costs and certain central overheads without providing reasoning to support our position. Given that individual firms would vary in how they structured retail supply activities, the onus was on us to justify any cost exclusions. SSE had arrived

[2] SSE PDR response, paragraph 2.4.1 (f).

at its proposed level of the cost differential of £77 after adding back in the cost exclusions we had made.

9. We should not have capped annual gas metering costs at £24 when estimating the extent of the differential. This figure had been derived from National Grid's published charges. National Grid was just one Meter Asset Manager among 32. We had not explained why all of the Six Large Energy Firms had incurred gas metering costs per year in excess of this level. In its view it was not appropriate to choose a benchmark not achieved by any of the Six Large Energy Firms.

10. The cost information in relation to Utility Warehouse contained inconsistencies that we had not appeared to have investigated in the same way that we had Six Large Energy Firm cost information eg re sales and marketing where Utility Warehouse had allocated significant costs to both DD and SC customers but none to PP customers. It seemed inconceivable to SSE that Utility Warehouse had not incurred any such costs in view that it had signed up many of its customers via partnerships.

11. In particular, Utility Warehouse's gas metering costs for 2014 appeared to be implausibly low. This level was far below the £[✂] per customer per year rental payment charged by National Grid and almost three times less than the lowest reported figure from the Six Large Energy Firms ([✂] per customer per year).

Bottom up costing approach to estimating the DD-PP differential

12. SSE told us that we had sought to conduct a bottom up analysis without having access to accurate, highly disaggregated cost data. Instead, we had, albeit with some limited exceptions (for example, National Grid gas metering rental charges), used the cost submissions of the Six Large Energy Firms as our primary information source, submissions we had considered to have suffered from numerous shortcomings.

13. SSE submitted that our analysis contained numerous errors of fact and analysis and inconsistencies. For example,

    (a) we had cited a single piece of analysis from [✂] to suggest that PP customers did not cause call centre costs to any greater extent than DD customers but when its advisors had scrutinised [✂] cost information it did not appear that this information provided an adequate basis to support our conclusion. Indeed two other Six Large Energy Firms ([✂]) cost information suggested the opposite.

(b) in relation to meter installation costs we had rejected an allowance for the higher average cost of installation arising from a greater frequency of installations being aborted on the grounds that such costs would be recovered separately from the customer concerned. However, SSE pointed out that this would only be the case in those instances where entry had been under court warrant.

(c) in relation to sales and marketing costs we had made an unfounded assertion that these costs would be incurred evenly by each customer payment type and therefore in its view wrongly excluded these costs;

(d) in relation to central overhead costs we had, in its view, ignored the potential for their being a differential between DD and PP customers. In its view we had made an unfounded assertion that the differential primarily related to externally sourced activities (metering and payment services).

Weighing up the evidence regarding the DD-PP differential

14. We had placed inappropriate weight on cost information for two firms, namely [✂] and Utility Warehouse. [✂] had a low cost differential due to high DD costs rather than it being efficient, and had been the highest cost supplier in 2014 in serving DD customers across the Six Large Energy Firms by some margin.

15. We could not meaningfully compare Utility Warehouse's costs to any of the Six Large Energy Firms because Utility Warehouse had a very small number of PP customers ([✂] compared with the market as a whole of 16%) and we had not investigated elements of Utility Warehouse's cost submission which appeared to SSE to be implausible. In SSE's view it was not appropriate for us to use Utility Warehouse's cost information to cast doubt on the average cost differential across the Six Large Energy Firms.

16. SSE questioned our assertion that Utility Warehouse's differential costs in metering and servicing payments would be directly comparable to those of the Six Large Energy Firms. It highlighted that elsewhere in our PDR we had rejected using Utility Warehouse's tariffs to establish benchmark competitive prices which were then used to estimate the level of any consumer detriment for three reasons. Firstly most of its customers had been acquired from RWE, secondly new customers were acquired through partners rather than PCWs and thirdly its business model focused on providing bundled services (energy and telecoms).

DD-SC cost differential

17. We had materially understated the differential which, in its view, should have been informed by average level of cost differential observed for the Six Large Energy Firms. SSE argued for a differential of at least £99 per dual fuel customer per year.

Accounting costs approach to estimating DD-SC differential

18. SSE disagreed with our assessment of the cost submissions being of limited value and emphasised the importance of including the cost of financing working capital in the estimate of the cost differential.

Bottom up costing approach to estimating the DD-SC differential

19. The vast majority of our estimated differential related to working capital and bad debt cost differentials. Both of these items related to the terms on which customers pay for their energy. SSE's pointed out that any alleged inefficiency which results in delayed payment, or in the case of bad debt, no payment by the customer, rather than harming customers benefitted them.

20. For our 'low' estimate for bad debt we had used [✂] cost differential without seeking to understand why it was the lowest differential among the Six Large Energy Firms. It could have been because of [✂] particular customer mix or cost misallocations on [✂] part. SSE criticised our reference to council tax rather than water company collection rates to cap the average Six Large Energy Firm bad debt cost differential to set our 'high' differential estimate. SSE noted that Ofgem had imposed a regime which greatly restricted suppliers' ability to disconnect customers in many circumstances.

21. For our 'low' estimate for the cost of holding working capital we had assumed that SC customers should take no more than 90 days on average after consuming energy to pay their bills. Our cost information showed, however, that in fact not a single Six Large Energy Firm had debtor days of less than 90 for either their SC gas or electricity customers. In estimating the cost of holding debt we had also incorrectly and inconsistently with our profitability analysis, used a cost of capital net of corporation tax than gross of corporation tax. By assuming that the financing of working capital would all be debt financed we had materially understated these costs.

Weighing up the evidence regarding the DD-SC differential

22. We had failed to recognise that any efficiency associated with bad debt and debtor days operated, in fact, to the benefit of consumers. Any perceived

inefficiency should more appropriately viewed as a transfer of value from customers to the SLEFs.

23. Invoking the same logic as with regard to DD-PP differential (see paragraph 14 above) SSE told us it was inappropriate to place weight on [✂] differential. Its low DD-SC cost differential was caused by relatively DD high costs, rather than it being efficient across both DD and SC customers.

24. In SSE's view only very limited weight should be placed on quote pricing (tariff) differentials previously reported by Ofgem (£75 per customer per year) as we were seeking to determine a cost differential, not a price differential. SSE also noted that, whilst we had quoted a pricing differential in the context of the DD-SC differential, we had not likewise quoted the equivalent differential for DD-PP (also £75 per customer per year).

Scottish Power[3]

DD-PP cost differential

Accounting costs approach to estimating DD-PP differential

25. Scottish Power told us that it believed that we had significantly underestimated the cost differential between DD and PP customers. Whilst we had estimated the differential to be £54 per year per dual fuel customer, the corresponding actual cost difference faced by Scottish Power was around £[✂], which rose to £[✂] if certain other costs items such as customer acquisition costs were also included within the differential.

Bottom up costing approach to estimating the DD-PP differential

26. Scottish Power in particular disagreed with our treatment of call centre costs, metering costs and sales and marketing costs.

Call centre costs

27. We had made no allowance for call centre cost differential on the grounds that most of the Six Large Energy Firms cost submissions yielded no differential. However both Scottish Power and RWE's accounting costs clearly indicated the existence of such a differential. As a result it had conducted further analysis of its own call centre costs both in terms of the number of calls, the average call handling time and the average cost of each type of call – not only

[3] Scottish Power's response to PDR, paragraphs 12.46 to 12.66.

did PP customers make more calls on average but PP calls were also significantly more complex and therefore charged at a higher unit price by its outsourced call handling agents. This resulted in an estimated dual fuel differential of £[✂] per dual fuel customer per year, in line with the level of its 2014 accounting costs differential. These accounting costs included business overhead but this overhead did not contribute to this differential.

28. Scottish Power explained that compared with DD customers, there was much more scope for things to go wrong for PP customers and if they did go wrong, PP customers needed more urgent support making it more likely for them to phone their supplier rather than, say emailing or visiting its website.

Meter rental costs

29. Scottish Power told us that, instead of looking at market prices for meter rentals to estimate the differential on a bottom up basis, we had instead substituted our own 'back of the envelope' calculation based on annuitizing over 5 years the difference between the upfront capital cost of the cheapest single-rate standard credit meters on the one hand and cheapest single-rate prepayment meters on the other hand. It noted that our approach was effectively assumed the same economic lifetime for both credit and prepayment meters, whereas in practice the latter were exchanged more frequently and suffered greater 'wear and tear'.

30. It further explained that the meter rental market comprised both 'legacy' (price controlled) and 'non-legacy (competitive) meters in both the credit and prepayment meter segments. It had analysed the bills for the portfolio of meters it rented between its legacy and non-legacy meter providers and found the weighted average differential between credit and prepayment meters to be £[✂] per dual fuel customer per year, £[✂] in excess of this element of our estimate. It told us it would have expected some variation across suppliers depending on their respective proportions of legacy and non-legacy meters and their choice of non-legacy meter provider, but not of this order of magnitude.

31. The rentals for electricity meters acquired after meter market liberalisation at the end of 2006 were significantly higher than for legacy meters, not least because meters providers, in anticipation of smart meter roll-out, had anticipated shorter expected useful economic lives than previously. Scottish Power noted it was not practicable for it on acquiring new customers to switch to another (cheaper) meter provider because it did not want to inconvenience these customers and incur the additional costs involved.

32. In contrast to electricity meters, the gas meters provided by the once incumbent provider and meter provider of last resort, British Gas (now National Grid Meters (NGM)) was still subject to Ofgem price controls and will remain so until smart meter roll out is complete. Scottish Power told us that, where it had needed to install new meters, it had been able to secure competitive rates through its own meter provider rather than using NGM. The remainder of its third party gas meter portfolio came as a result of customers switching to Scottish Power, where, as a result, it had less scope to negotiate rental rates.

33. Finally in relation to metering costs, Scottish Power noted that some meter providers would charge early termination fees if their dumb meter were to be replaced by a smart meter, set sometimes at a level designed to recover the outstanding rental payments (relative to the assumed lifetime on which the rental was based). It argued that we should include a factor in our differential to allow for the likely exercise of termination fees.

Sales and marketing costs

34. Scottish Power noted we had chosen not to include customer acquisition costs in our differential. Scottish Power emphasised that its cost submission had shown that it cost it significantly more to acquire a PP customer (around £[✂] per year for a dual fuel customer) than a DD customer as a result of the different mix of sales channels used, a mix largely determined by the preferences of the two categories of customers. It had also analysed its 2014 direct sales commission costs for DD and PP customers between face-to-face, telesales and PCWs sales channels and found a weighted average differential of around £[✂] per duel fuel customer per year.

Weighing up of the evidence regarding the DD-PP differential

DD-SC cost differential

35. Scottish Power told us that it believed that the £84 differential for standard credit meters was significantly underestimated by the CMA[4] as supported by its own indirect cost information. Scottish Power, however, did not elaborate further.

[4] SP PDR response, FN 47.

Centrica[5]

Overarching approach to estimating cost differentials

36. In relation to our top down analysis directly based on suppliers' accounting costs of suppliers, Centrica noted we had selected figures which were equivalent to the lowest differential seen across the Six Large Energy Firms. In its view this was not an appropriate approach and would generate a differential which was too low for a number of reasons.

37. Such an approach on our part was predicated on the assumption that any difference in *differential* between direct debit (DD) and prepayment meter (PPM) costs were an indication of lack of efficiency. In Centrica's view the concept of an "efficient differential" was not a very meaningful one in general, and certainly not in this case.

38. Centrica noted that this differential could be made larger not only by higher costs in relation to PPM customers but also by lower costs in relation to DD customers. This was a particularly problematic factor in relation to bad debt costs, for example, or other costs that only apply to the DD segment. The inference seemed to be that if bad debt costs on DD customers were reduced by certain suppliers, then those suppliers should be considered less efficient in relation to their PPM-DD differential. This could not be right.

39. We had not provided any evidence to support the inference that variations in costs across suppliers represent inefficiency. In Centrica's view, there were many drivers of the costs to serve PPM customers that were largely outside the control of suppliers (e.g. the payment technology chosen, the geographic spread of customers), and other reasons why costs might vary between DD and PPM segments regardless of how carefully a supplier works to control costs (e.g. the relative scale of the two customer segments). Similarly suppliers might make technology decisions that reduce costs for DD customers but increase them for PPM, for example (e.g. selecting a particular IT system that worked better for some customer groups than others) – but this could not be represented as an inefficiency in relation to PPM.

40. Centrica also highlighted that we needed to make sure that we had handled bad debt correctly within our overall analysis. This was because when deriving our estimate of the detriment and calibrating the price cap we were using the DD prices of Ovo and First Utility. These latter prices would reflect

[5] All comments come from CRA's report on behalf of Centrica, 7 April 2016, sections 3.6 a) and b) except where there is a separate footnote (where comments come from Centrica's PDR).

Ovo and First Utility rather than Six Large Energy Firm bad debt levels for DD customers. It would not be appropriate to derive a cost differential without taking into account any differential between Six Large Energy Firm and Ovo / First Utility DD bad debt levels.[6]

DD-PP cost differential

41. Given that the differential we had proposed had been set at a level close to the lowest Six Large Energy Firm differential in the market ([✂]) at £54 per dual fuel customer per year, in Centrica's view that differential must have been set too low. A more pragmatic approach would be to use the average differential across the Six Large Energy Firms. It noted that we believed that to be £63 after our adjustments[7] and therefore would be reasonable benchmark.[8]

Accounting costs approach to estimating DD-PP differential

42. As we had recognised in the PDR, Centrica noted that suppliers do not routinely analyse costs between their DD, PP (and SC) customers in the normal course of business, and appeared to account for several of the cost categories in different ways. These differences could well result in differences in *measured* costs across suppliers in ways that do not reflect *actual* differences in cost.

43. As an example, Centrica noted that [✂] costs were not comparable to the other suppliers because [✂] had not attributed metering, sales and marketing, central overhead and other costs on a differential basis between DD and PP (and SC). The only costs which had been differentially attributed were costs to serve and bad debt. All other suppliers had made a better effort to attribute cost costs differentially.

44. In view of its view that the lowest differential did not necessarily reflect the most efficient differential, Centrica suggested that a pragmatic way of estimating this differential would therefore be to base it on the average differential across the Six Large Energy Firms.

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[6] Centrica's response to the PDR, paragraph 215.
[7] These adjustments excluded the categories of 'central overhead', 'sales and marketing' and 'other' for which some of the SLEFs have differentials between PP and DD. The gas differential has also been reduced to the cost of an unsubsidized gas meter rental from NGM by about £5.
[8] This last sentence comes from Centrica's response to the PDR, paragraph 218.

Bottom up costing approach to estimating the DD-PP differential

45. Centrica noted that though termed a "bottom up" analysis, in many cases the assumptions used appear to be based on the same cost submissions provided by the Six Large Energy Firms for the "top down" (ie accounting costs) analysis. Therefore the fact that the two approaches resulted in a similar proposed differentials should not be surprising.

46. Centrica noted that our bottom up approach appeared to be very sensitive to precisely which sources were used to set the upper and lower bounds on each range.

Weighing up the evidence regarding the DD-PP differential

47. Regarding the range for our bottom up approach Centrica said that it had have not seen any reason why it had been appropriate to choose the bottom end of the range for our “spot estimate”. This figure was below the cost differential of all but one of the Six Large Energy Firms. It advocated values towards the centre of the range as providing the best estimate.

48. Centrica did not believe it valid to benchmark costs across the entire PPM supply sector on the basis of a supplier (UW) holding [✂] of all PPM accounts.

49. We has also disregarded the £80 [cost differential] figure recognised by Ofgem based on a significant level of consultation and analysis. The £54 per dual fuel customer per year was even below the level derived from the CMA’s own bottom up analysis.[9]

DD-SC cost differential

50. Centrica noted did not comment specifically on this but noted that comments similar to those on the DD-PP differential would apply here too.

RWE[10]

DD-PP cost differential

51. RWE considered that our proposed cost differential materially understated the costs of supplying prepayment customers resulting from the following:

[9] Centrica’s response to the PDR, paragraph 213.
[10] RWE’s response to the PDR, paragraphs 46.71 to 46.105.

(a) we had understated some of the costs in our bottom-up calculations;

(b) we had made inconsistent and selective use of evidence on the cost differential & our methodology for selecting our estimate of the range for the differential was opaque; and

(c) it was inappropriate and imprudent for us to select a "spot estimate" from the bottom end of the range for costs we had estimated.

Bottom up costing approach to estimating the DD-PP differential

52. RWE told us that we had understated the differentials in relation to a number of items most notably, costs to serve and bad debt / the costs of working capital.

Costs to serve

53. RWE reiterated that there was a differential in the costs of serving PP rather than DD customers as reflected in its cost submission. It had estimated that whilst these customers comprised [✂]% of its customer base, they accounted for [✂]% of its call centre costs. Furthermore calls from PP customers were more complicated and took longer.

Bad debt and cost of working capital

54. RWE submitted that it was inappropriate for us to exclude any debt ran up by its customers whilst they had been supplied on a credit basis from the assessment of costs of providing a customer on a PP basis. The installation of a prepayment meter was legitimate and reasonable step for a supplier to take. However it did not guarantee that the money would be ultimately recovered from these customers, resulting in the write off of the outstanding debt and costs associated with managing the debt. Likewise when suppliers took on a prepayment customer under the Debt Assignment Protocol they also acquired the debt incurred by that customer with its previous supplier.

55. In a similar fashion, RWE submitted that the cost of holding the outstanding debt (which in its case averaged at £[✂] for each prepayment customer as at February 2016) should be included in our assessment of the differential.

Weighing up the evidence regarding the DD-PP differential

56. RWE noted that we had identified four sources of evidence for this differential: the first one related to the adjusted average Six Large Energy Firm cost differential, the next two related to individual firms with the lowest differentials

(among the Six Large Energy Firms [EDF] and among all suppliers analysed [Utility Warehouse] respectively), and the fourth was the range that came out of our bottom up model. It inferred that because the range we proposed accorded with the range from the bottom up model, we had placed primary weight on that model. RWE did not consider that this was either justified or appropriate.

57. It considered that we had been inconsistent and selective in placing any weight on the lowest cost differential of the Six Large Energy Firms. We had not presented any evidence that any one of the Six Large Energy Firm's differential (in this case EDF's) was a better estimate of the cost differential than any of the others. In fact, publicly available evidence suggested that EDF had among the highest unit costs of the Six Large Energy Firms. Given that we had already elsewhere[11] assessed all but the lowest cost Six Large Energy Firms to be "inefficient", we could not place reliance on a cost differential derived from "inefficient" costs.

58. RWE also considered us to be inconsistent by, on the one hand, placing weight on the cost differential of Utility Warehouse but, on the other hand, excluding this firm's prices when determining the prepayment price benchmark.

59. RWE considered that estimates based on Six Large Energy Firm cost differentials would cover the right scope of costs and be based on accounting cost information from large stable businesses which had been supplying a substantial proportion of prepayment customers over the longer term. In its view it would provide the most reliable evidence of the cost differential. Our bottom up assessment, if properly performed and based on a balanced assessment of the evidence, could provide a useful cross check.

60. Finally RWE noted that it was inappropriate and imprudent for us from to have selected from towards the bottom end of our range of £50 to £66 (ie £54 per dual fuel customer per year for our spot estimate of the differential), particularly as it could be the case that it might lie at the upper end of this range. In particular, the headroom in the proposed price cap should not be seen as providing a margin for error in our spot estimate of this differential.

DD-SC cost differential

61. RWE made no comments on this differential.

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[11] PDR, Appendix 3.5, page A3.5-10, paragraph 28.

EON[12]

DD-PP cost differential

62. EON submitted that in contrast to our proposed differential of £54 per dual fuel customer per year, its average cost differential was £[✂] per customer per year, somewhat higher than the average Six Large Energy Firm differential based on the Six Large Energy Firms' (adjusted) cost submissions of £83. Its advisors had estimated £78 using information supplied to it by EON to be more reasonable.

Accounting costs approach to estimating DD-PP differential

63. EON's advisors highlighted that we had incorrectly double counted its income in relation to payment services by £4m and requested that we adjust the relevant line item, so that the its total costs remained as originally submitted.

Bottom up costing approach to estimating the DD-PP differential

64. EON's advisors submitted that our bottom-up cost model reflected substantial oversights in relation to metering and bad debt costs which, in its view, led to a material underestimate of the cost differential.

Metering costs

65. EON's advisors submitted that the rental cost differential was much higher in practice. This could be seen both from observed meter rental prices but also EON's contracted rental costs as reflected in its cost submission. In relation to meter rental levels we appeared to have relied heavily on NGM's published rental rates. However it was not commercially viable for suppliers to rent all their meters from NGM as NGM did not also supply smart meters. As a result EON, in line with other suppliers, had turned to other meter providers who did and incurred a higher differential as a result. EON also highlighted that there were advantages of renting meters from other providers through "deemed contracts" in that the meter supplier, rather than the energy supplier, bore the responsibility of fixing faulty meters.

66. There was inevitably a differential between the cost of running a PP rather a credit meter. Rental rates were higher for the latter were higher because of the higher cost of the meter and lower expected economic life. PP meters

[12] Comments relate to KPMG report on behalf of EON, paragraphs 3.4.1 to 3.4.15.

were also disproportionally affected by functionality changes and faults arising from the use of keys / cards to operate them.

67. Meter maintenance costs were much higher than we had estimated based on meter maintenance prices. These costs had risen in recent years because meters suppliers such as NGM no longer provided free maintenance services.

68. In addition we had not taken account of meter termination costs. Suppliers like EON incurred premature termination charges when renting meters from metering providers. The level of fees was linked to remaining economic life of the meter and the normal annual rental fees. EON quoted a current £1 per customer per year differential in this respect.

Bad debt

69. EON submitted that, contrary to the view we had set out in the PDR, it was in fact possible for a PP customer to incur bad debt in its own right as a result of the following scenarios:

(a) on change of tenancy of a property with a PP meter the incoming tenant would often use up any credit paid for by the previous tenant, which the supplier would have to refund to the previous tenant upon closure of their account, effectively resulting in a bad debt charge.

(b) on change of supply to a PPM property, the process of switching is reliant upon the customer using his or her new prepayment card from the outset, so that payment flows to the new supplier. This process did not always happen smoothly, resulting in some smaller sums being written off.

(c) on departure from a PPM property it is possible for the customer to have incurred accumulated standing charges without the supplier being able to chase the customer for payment. Likewise the customer may also have used up his or her £5 of emergency credit. Landlords would be reluctant to settle such debt.

(d) a new PP customer to a supplier may also bring its outstanding debt from its previous energy supplier with it. Were this customer to move on without giving their new details, then the supplier may not be able to chase for payment.

70. EON therefore submitted that we should allow in our differential an allowance for bad debt of £10, £5 each for electricity and gas, based on the level of emergency credit that a customer could use.

DD-SC cost differential

Our weighing up of the evidence regarding the DD-SC differential

71. EON noted the large range in our estimates of the differential based on a number of sources. We had not provided an explanation of why we had chosen our spot estimate of £82 per dual fuel customer per year which was well below the midpoint of £100 of the range of figures we had quoted.

EDF Energy[13]

DD-PP cost differential.

72. EDF Energy told us that it believed that our assessment of the cost differentials in serving PPM customers required further analysis. As we acknowledged, the information provided by suppliers to date resulted in a broad range of calculated costs, reflecting the difficulty suppliers had in providing the granular information we had requested.

73. EDF Energy asked us not to assume that the current level of cost differential between payment types would remain constant into the future. For example, we needed to ensure that the costs of the existing PPM infrastructure would be able to be recovered in future as the numbers of customers that are reliant on it decreases.

Accounting cost approach to estimating DD-PP differential

74. EDF Energy drew to our attention the potential for bias within its allocation of call centre costs in its cost submission [✂]. This allocation had not been based on a full capture of call volumes for DD and PP customers respectively. Given the significance of this cost item, any bias reflected in its cost submission analysis would have had a material impact on our assessment of this differential and, in its view, further analysis was required. It subsequently submitted that it had looked at its call costs again and found there to be a differential of £[✂] per year per dual fuel customer.

Bottom up costing approach to the DD-PP differential

75. EDF Energy, whilst accepting that there was no recent data relating to prepayment meter key fraud, told us that this issue required further examination rather than us assuming that the loss of income associated with

[13] EDF's response to PDR, paragraphs 8.63 to 8.65.

this fraud was not material, and therefore not a source of differential in terms of the net cost of supplying PP rather than DD customers.

Our weighing up the evidence regarding the DD-PP differential

76. EDF Energy noted that our spot estimate of £54 was slightly below the mid-point of the range from our bottom up analysis. We had argued that this was appropriate because one of the mid-tier suppliers (Utility Warehouse) had reported an overall differential of only £42. EDF Energy pointed out that Utility Warehouse's overall differential was so low because it has a very low differential for gas customers (£[✂]). In fact, Utility Warehouse's electricity differential (£[✂]) was higher than what we were proposing to allow (£23). EDF Energy drew attention to our observation that Utility Warehouse had a somewhat different business model to other suppliers and had recently [✂]. We had acknowledged for other mid-tier suppliers that a rapidly growing customer base could have had a volatile impact on the reported costs per customer for certain cost items but not here.[14]

DD-SC cost differential

77. EDF Energy made no comment on this differential.

Economy Energy[15]

DD-PP cost differential

78. Economy Energy told us that it believed it was a truly difficult task to assess the cost differentials experienced by a typical supplier between its prepay and direct debit payment methods. The Six Large Energy Firms had such large customer number and therefore economies of scale whereas Utilita operated Smart pre-pay for the vast majority of its customers. Economy Energy indicated that the reported differences might to some extent be a function of the wider mix of payment methods within any one supplier.

79. Economy Energy noted that from the PDR we had neither confidence in the comparability of the cost allocations carried out by the Six Large Energy Firms / Mid-tier Suppliers nor in the previous research into this issue carried out by Ofgem. As a consequence we had sought to determine the level of costs ourself.

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[14] Brattle Group confidential report for EDF, paragraphs 79 to 80.
[15] Economy Energy's response to PDR, 6 April 2016.

80. Economy Energy believed we had arrived at an estimate of the cost differential which was too low and did not properly reflect all of the extra costs associated with prepayment customers on dumb pre-payment meters which included, but was not limited to

(a) greater numbers of customer contact and more lengthy and complicated queries;

(b) repeated issue of card and keys;

(c) more faults with more complicated meters;

(d) a higher number of change of tenancy requests; and

(e) higher customer acquisition costs.

Bottom up costing approach to estimating the DD-PP differential

81. Economy Energy made a number of detailed points about certain cost items which contributed towards the differential as set out below.

Call centre costs

82. Economy Energy noted that from the PDR we didn't believe that the Six Large Energy Firms had been able to evidence that PP customers made more frequent contact with their suppliers. Economy Energy told us that it believed that there was a significant differential. The principal reason for a customer on a credit meter (ie either a credit or direct debit customer) contacting their supplier was to query a bill – if they had lost power or gas they would need to call their DNO, not their supplier. In contrast, while a prepayment customer might not need to query a bill (although issues around payment do occur) they had to contact their supplier over a number of power supply related issues, notably to do with the devices themselves (keys or cards) and off-supply problems often caused by self-disconnection.

Bad debt

83. Economy Energy told us that it operated almost exclusively in the prepayment sector of the market. It had never installed a prepayment meter in place of a credit meter in order to recover debt. It, however, incurred bad debt on meters particularly in cases of change of tenancy where standing charge had been allowed to build up.

84. It also pointed out that a not insignificant number of customers choose to operate their meters by using the emergency credit almost all the time – thus

effectively putting themselves in a post-pay position. This often led to self-disconnection and the need for a wind on (essentially sending an engineer (at its cost) to add credit to a meter that the customer later had to repay). This also caused the customer to have to contact the supplier more often.

85. Economy Energy told us that it also charged customers for lost payment devices (cards & keys), for engineer appointments that were for non-faulty meters and for revenue protection cases where gas or electricity has been stolen by bypassing the meter. These debts would be added to the meter, but if the tenant then moved out they then became very difficult to recover.

Customer acquisition costs

86. Economy Energy told us that PP customers had a higher cost to acquire for all suppliers but in particular for new entrants into the PP segments like itself. It also noted that for those PP customers which were indebted to their current supplier there was also a low prospect of a successful switch.[16]

87. The greater difficulty in acquiring PP customers than credit customers was mainly due to a combination of the low levels of internet availability to many of PP customers and the low visibility of PP tariffs on PCWs. As a result more sales were done face to face and this incurred significant extra cost as sales needed to be verified by a person different to the sales agent and many more levels of safeguard needed to be in place to ensure a compliant sale and ensure protection for potentially vulnerable customers.

88. Once the sale has taken place successfully the customer needed to receive new payment devices (gas card and electricity key) in order to operate the meter on their new tariffs. The current cost of sending these devices was approximately £5.55 for an electricity key and £2.50 for a gas card although it was worth noting that costs were considerably higher (almost double) when the company had fewer customers. These are costs were not incurred by customers paying by direct debit but did represent a significant cost differential when signing up volumes of new prepayment customers.

Priority Services Register

89. Economy Energy noted that our PFs/ PDR reports indicated that PP customers there were significantly more disabled and single parents than among the wider customer base. This led to a much a higher likelihood of these customers being on the Priority Services Register. This would in turn

[16] Page 2 of EE PDR response.

mean a number of services would be offered to these customers at no additional cost. As more device issues occurred with prepayment meters this would increase the cost differential.

Utilita[17]

DD-PP cost differential

90. Utilita submitted that the differential should be £70 per dual fuel customer per year against the £54 we had used.[18] It told us that all parties agreed that there are additional costs in serving PP customers, and while these incremental costs would reduce when the smart rollout was complete, it still expected there would be some additional costs. Prepayment customers generally had a high propensity to contact the supplier call centre rather than self-serve if they have an issue, and still tended to dislike online only tariffs.[19]

91. Utilita noted that the customer base of [✂] and [✂] were active and competent internet-users, circumstances which were not replicated across the sector. This would imply a lower DD per customer cost to serve than the sector as a whole. This was borne out by the cost to serve figures for [✂] which were lower than those for the Six Large Energy Firms. Without adjustment, this would mean that a differential based on a comparison of Six Large Energy Firm costs would be too low.[20]

Accounting costs approach to estimating DD-PP differential

92. In respect to the cost base, Utilita doubted the Six Large Energy Firms monitor costs sufficiently accurately to properly determine the cost to serve of their pre-pay customer base. In respect of the mid-tier suppliers, none has a sufficiently substantial prepayment portfolio to produce costs robust enough to be used to set a cap for the entire industry. [21] It observed that from the PDR appendices it appeared that a number of the Six Large Energy Firms did not separately cost their call centre provision for prepayment and credit customers.

93. Utilita noted that we had calculated the differential between DD and PP meter customers primarily using Six Large Energy Firm data on the grounds that Mid-tier Suppliers did not have sufficient prepayment customers for a robust

[17] Utilita's response to PDR. Specific paragraphs given below. All paragraphs from PwC are separately noted.
[18] Table 4.1.
[19] Paragraph 4.19.
[20] PwC's report, paragraph below Table 3.1.
[21] Paragraph 1.11.

prepayment specific analysis. In its view we should have cross checked our analysis against the costs of an acknowledged prepayment expert such as itself.[22] It saw itself as an efficient prepayment specialist (albeit lacking some economies of scale due to portfolio size), that it should be at or near the efficiency frontier for prepayment operation.[23]

94. It noted that the advisers it had instructed in order to be able to access information held within our confidentiality ring had requested such cost information from it.[24]

95. Utilita told us that it found face-to-face selling cheaper than selling by PCWs. A critical factor was that it had a product that people actually wanted to buy. It enabled somebody doing face-to-face selling to sell a large number of contracts every day rather than selling just maybe one dual fuel contract a day. Obviously, that drove up acquisition costs for the Six Large Energy Firms when they sought to sell on a face-to-face basis.

Utilita's own analysis of the cost submissions of the suppliers[25]

96. Given the extent, granularity and quality of the cost information we had collected from suppliers on the cost to serve, Utilita had chosen to submit its own analysis of this dataset. Because we had collected information covering 3 financial years, this had allowed it to analyse costs incurred in serving direct debit and PPM customers over more than the one year (2014) we had presented.

97. Utilita explained that while it understood why we had sought to estimate the differential on a bottom-up basis, it was appropriate to review that analysis against the cost dataset as a whole (albeit after making a sensible selection of suppliers). A top-down (ie using accounting costs) approach was important, as it avoided cost allocation issues between different cost items and reflected the actual circumstances of the suppliers.[26]

98. For this exercise however it had decided not to use the information of [✂]. It had excluded [✂] because it had reported a differential, some way above the other Six Large Energy Firms, calling into question the cost allocation rules it had used. It had excluded [✂] and [✂] due to their low number of PPM customers and, in the case of [✂], their costs to serve per DD customer were

[22] Paragraph 4.21.
[23] Paragraph 4.56.
[24] Paragraph 4.27.
[25] PWC report, pages 22 and 23.
[26] PWC, page 22.

far in excess in the sector average. Using any these three suppliers cost information would have skewed the dataset to estimate the differential.

99. Utilita had measured the differential in 5 different ways over the three years, 2012 to 2014 inclusive:

(a) the simple average of the remaining five Six Large Energy Firms' differentials

(b) the simple average of the intermediate three Six Large Energy Firms differentials (ie discarding the highest and lowest Six Large Energy Firm differential)

(c) the simple average of the remaining five Six Large Energy Firms' differentials plus [✂] and [✂]

(d) the simple average of the intermediate three Six Large Energy Firm differentials plus [✂] and [✂]

(e) the simple average of [✂] and [✂] differential

100. The results of Utilita's top-down approach indicated that the differential had fallen over the past three years. Even so, using FY2014 data, the average cost to serve differential across the five scenarios was £[✂] per dual fuel customer per year. It also noted that only one of these measures (measure (e)) had resulted in a lower differential than £54 per dual fuel customer per year and that was for 2013.[27]

Bottom up costing approach to estimating DD-PP differential

101. Utilita submitted that its portfolio of customers gave an almost pure view of PP cost to serve. It had assessed the differential based on its view of the additional cost imposed by prepayment customers at different stages of the lifecycle. It had excluded costs of acquisition and meter installation for this exercise as it treated these costs as costs of acquisition. On this basis, it expected the differential between DD and PP to be around £70 per dual fuel customer per year.[28]

Call centre costs

102. Based on what it had read in the provisional decision on remedies, Utilita believed that the difference between its and our estimated level of the

[27] PWC pages 22 and 23.
[28] Paragraphs 4.58 / 4.59.

differential was most likely to relate to the treatment of call centre costs. If a prepayment customer had a difficulty of any type (from how to use the emergency credit to inability to top up due to no money) they tended to call the supplier. Change of tenancy was also higher than with DD customers. Utilita therefore considered the cost to serve given by the CMA to be understated by at least £16 per customer (ie the difference between our £54 and its estimated £70).[29]

Metering costs

103. Utilita pointed out that a disproportionately higher number of prepayment meters are new, and, due to the Smart Meter roll out deadline, were likely to be in situ for a shorter period, which would lead to higher differential for meter rentals.[30]

Utilita's own analysis of the cost submissions of the suppliers[31]

104. Utilita noted that our spot estimate of £54 per dual fuel customer per year appeared to have been heavily influenced by our line-by-line, bottom-up analysis of costs from payment service providers and Six Large Energy Firms. In this analysis, we had estimated both high and low baselines for the component parts of the differential and then selected a spot estimate. Utilita noted that none of this analysis had been informed by the costs of Mid-tier Suppliers. It thought that Ovo and Utility Warehouse had sufficient PPM customers for their cost data to be considered reliable. Utilita had sought to review / replicate our bottom up analysis but also using the cost information of the Mid-tier Suppliers. In keeping with its analysis based on the suppliers' cost submission it had not included the costs of [✂] in this analysis. [32]

105. As a result it considered that we should review the treatment of the following items:

(a) call centre costs because the cost submissions provided by the suppliers generally supported a differential and because it had a specialist metering team assisting with PP customers queries which would clearly not be needed for credit meter customers

(b) PPM data management costs because the cost submissions of both [✂] and [✂] showed they incurred higher costs. Utilita thought that the higher

[29] Paragraph 4.60.
[30] Paragraph 4.61.
[31] PWC's report, pages 20-23.
[32] PwC's report, page 20.

costs would reflect the additional challenges for smaller suppliers to manage PPM data.

(c) Meter maintenance where a simple average across the 7 suppliers analysed provided somewhat higher figures than we had included.

(d) Central overheads where some suppliers had identified these as a separate cost items and others hadn't. It felt that these costs should be included in the estimate of the differential.

106. The net impact of its analysis was a higher cost to serve differential of £[✂] per dual fuel customer per year than we had assumed for our spot estimate of £54.[33]

Weighing up the evidence regarding the DD-PP differential

107. Utilita did not specifically comment on how we had done this in the provisional decision on remedies. However it averaged the two figures it had arrived at (see paragraphs 101 and 106) to arrive at its "preferred estimate" of £[✂] per dual fuel customer per year.

[33] PWC, page 22.