

Electricity distribution charging boundary between higher (EDCM) and lower (CDCM) voltages

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Overview:

The distribution charging boundary is the basis for determining whether a customer should be charged for use of the network under the higher voltage level charging methodology (EDCM) or the under the lower voltage charging methodology (CDCM). This document contains our decision on the common boundary that should apply across all Distribution Network Operators (DNOs) from 1 April 2011 when the EDCM is introduced. We consulted on this matter in June of this year.

We will shortly be publishing a statutory notice of the licence modifications required to implement this decision. Electricity distribution licence holders will have 28 days to then decide whether or not to accept the proposed licence modifications.

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Context

Distribution Network Operators (DNOs) have an obligation to implement revised charging approaches for use of their networks at the extra high voltage (EHV) levels for 1 April 2011. This follows the introduction of a common approach at the lower voltages on 1 April 2010. Ofgem's structure of charges project aims to introduce new, more cost reflective charging methodologies. By introducing open governance, we also aim to ensure these can evolve to reflect changes in patterns of use and investment on the DNOs' networks.

In the course of this project, the industry needs to adopt a common distribution charging boundary. Currently not all DNOs apply the same dividing line between EHV and lower voltage charges. Due to the specific nature of some connections, most DNOs currently treat a small number of customers as if they are connected at EHV when they are actually connected and / or metered further down the distribution network.

Our July 2009 decision document on the EHV common methodologies concluded that a common charging boundary could provide clear benefits such as improving transparency and facilitating competition. However, at that stage there was insufficient information on the charging impact of different options for the common boundary. We were unable to resolve this matter at that time and indicated that DNOs should consult further when there was more information on the charging impacts involved. The current licence condition maintains the status quo as an interim solution, but we have made it clear that we expect DNOs to introduce a common boundary before submitting their EDCM proposals to us by 1 September 2010.

DNOs and Ofgem have consulted on the charging boundary, in April and June respectively, and have held some workshops on this matter. Ofgem has reached a decision on the boundary. If the licensed distribution network operators accept our decision, the licence changes could be implemented to bring this about.

Associated Documents

- Electricity distribution charging boundary between higher (EDCM) and lower (CDCM) voltages - Impact Assessment, June 2010; update & responses
<http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Pages/DistChrgs.aspx>
- DNOs' consultation on the EDCM/CDCM boundary, April 2010 & responses May 2010
<http://energynetworks.squarespace.com/structure-of-charges-edcm/>
- DNOs' consultation on the EDCM, June 2010
<http://energynetworks.squarespace.com/structure-of-charges-edcm/>
- Modification of standard licence conditions in respect of charging at higher voltages and new open governance arrangements, September 2009
<http://www.ofgem.gov.uk/Licensing/Work/Notices/ModNotice/Pages/ModNotices.aspx>
- Delivering the electricity distribution structure of charges project: decision on extra high voltage charging and governance arrangements (Ref 90/09), July 2009
<http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Pages/DistChrgs.aspx>
- Modification of standard licence conditions in respect of charging at lower voltages, June 2009
<http://www.ofgem.gov.uk/Licensing/Work/Notices/ModNotice/Pages/ModNotices.aspx>

Table of Contents

Summary	1
1. Introduction.....	3
Context of decision	3
Features of the CDCM and EDCM	4
Structure of this document.....	5
2. Boundary Options	6
Current classification of customers	6
Relevant classes of customers	6
Boundary options.....	8
Option 1 - No change (NC).....	9
Option 5 - No change 2 (NC2)	9
Option 3 - Optional raised boundary (ORB)	9
Option to raise boundary	9
Option 2 - Raised boundary (RB)	9
Options to lower boundary.....	10
Option 4 - Lowered boundary (LB)	10
Option 5a - Lowered boundary 2 (LB2)	10
Option 6 - Authorised capacity (AC)	11
3. Our Decision.....	12
Factors	12
Commonality	12
Cost reflectivity	13
Competition	13
Perverse incentives.....	14
Customer impacts.....	14
Deliverability.....	15
Evaluation.....	15
Options to maintain status quo.....	15
Option to raise boundary	17
Options to lower boundary.....	18
Decision.....	21
4. Next Steps	23
Statutory consultation	23
Illustrative charges - updating customers	23
Longer term development.....	23
Appendices	25
Appendix 1 - Responses to Impact Assessment Consultation	26
Appendix 2 - Impact on Charges.....	32
Appendix 3 - The Authority's Powers and Duties	38
Appendix 4 - Glossary	41
Appendix 5 - Feedback Questionnaire.....	43

Summary

This decision concerns the boundary between customers subject to the charging methodology at lower (CDCM) and higher (EDCM) voltages. Currently, distribution network operators (DNOs) apply different boundaries, and treat customers connected at the same part of the network differently, depending on when the connection was made. This can cause confusion, particularly for customers that operate across a number of distribution areas. There are also some concerns that differing treatments across and within DNOs may be unduly discriminatory. This situation also makes it difficult to move to fully common charging arrangements across customers. Such arrangements are anticipated for extra high voltage (EHV) customers from April 2011 and came in to effect in respect of lower voltage customers from April 2010.

In June, we consulted on distribution charging boundary options. The DNOs also consulted on the boundary issue in April this year. Following consideration of a wide range of alternatives this document explains our decision. The alternative options considered were for variants of no change, for lowering the boundary and for raising the charging boundary. The no change variants would deliver certainty around the arrangements but would result in differing treatment for existing customers. Raising the boundary pushes more customers in to the CDCM whilst lowering the boundary pushes more customers in to the EDCM. Following their consultation, DNOs initially suggested raising the boundary though not all DNOs agreed on this approach.

We held a workshop on this issue for interested parties on 28 June where a number of customers voiced concerns over the DNOs' preferred approach for a raised boundary, especially as this was likely to increase charges to a number of customers. Customers generally said they would prefer to keep their existing arrangements rather than face large increases in charges, which is the general impact for customers moving from the CDCM to the EDCM. Following the close of our consultation many customers reiterated this point. Some favoured the most cost reflective approach possible whilst others simply commented that they were not in favour of a raised boundary. Following our consultation DNOs' positions varied from maintaining a raised boundary, offering an option of raised boundary, various hybrid approaches and lowering the boundary.

Ofgem has decided that it is appropriate to implement a lower boundary where customers metered at the HV side of substations with a primary voltage of 22kV or more are captured by the EDCM in addition to customers connected at 22kV and above. This approach will be applied from 1 April 2011 if licensed distribution network operators accept the licence changes that we require to implement this decision. Having reviewed the available evidence we believe that this offers the most cost reflective approach, transparency going forward and commonality across customers.

The impact on customers of lowering the boundary is that more customers will be on EDCM arrangements. Current estimates are that more than 400 customers will move to EDCM arrangements and three will move to CDCM arrangements, although DNOs are still confirming exact numbers. Customers moving to the EDCM will generally see a lower charge than under the CDCM. However, because the EDCM is more targeted than the CDCM there are cases where these customers will see charges rise on the basis of our decision on the charging boundary.

We note that this new boundary will require DNOs to conduct further work to identify the customers captured by the EDCM and to model the charges that arise when these customers are included in this charging methodology. Particularly where DNOs have a large number of customers migrating to the EDCM, we recognise that this may have an impact on the timescale within which it is possible for the DNO to apply EDCM charges

on customers affected by the boundary decision. We will take this factor into consideration when reviewing the DNOs' EDCM submissions later this year.

We recognise that wherever the boundary is drawn there will be customers that fall on either side and there will, to some extent, be an arbitrary cut off between the two charging methodologies. Without the time constraints associated with introducing the EDCM, we would have been keen to see the industry explore more sophisticated approaches, perhaps where more than one criteria is used to determine the boundary, for example location on the system plus capacity. We consider this is something industry could consider further as it looks to refine the charging methodologies.

Following our decision we will publish a statutory consultation on changes to DNOs' licences to effect this decision. DNOs will have 28 days to decide whether to accept or reject our licence modification proposals. DNOs will bring forward their EDCM proposals on the basis of the boundary for 1 September 2010.

1. Introduction

Chapter summary

This chapter explains the context of Ofgem's decision on the issue of distribution charging boundary options in more detail, the different features of the charging methodologies at the higher and lower voltages and the structure of this document.

Context of decision

1.1. The charging boundary is the basis for Distribution Network Operators (DNOs) to determine whether a customer should be charged for use of network under the common charging methodology for the extra high voltage level (EDCM) or the one for the lower voltage levels (CDCM). Any change of the charging boundary would not affect the revenues that an individual DNO is allowed to earn. However, it would change charging methodology that applies to some customers who are connected at the high voltage and extra high voltage levels and could have a material impact on the level of their charges.

1.2. We set out the background to the boundary issue in detail in our impact assessment consultation.

1.3. DNOs delivered the CDCM for implementation from 1 April 2010 and are currently developing the EDCM which will start to apply from 1 April 2011. DNOs have different approaches to deciding whether to apply EHV or HV/LV charging methodologies to customers connected at high and extra high voltages. For example, some DNOs apply their current EHV methodology to some customers metered on the 11kV busbar of a substation with a primary voltage of 33kV, whilst others do not.

1.4. We considered that inconsistent ways of determining the charging boundary across DNOs was a barrier for prospective small suppliers and distributed generators to enter the energy market and would cause confusion to customers who have businesses with different DNO areas. We noted that the potential impact on customer charges for a minority group of existing EHV customers (about 80) would be substantial if they became subject to the CDCM (from 30 percent to well over 100 percent). We therefore concluded that this matter warranted consultation prior to deciding whether an enduring common boundary was appropriate and at which level the boundary should be set.

1.5. As an interim solution for 2010-11, we modified the standard licence conditions (SLCs) in September 2009 in a manner largely consistent with the status quo (explained below), expecting DNOs to consider the issue further and consult in detail with potentially affected customers before submitting their EDCM proposals by 1 September 2010 (as required by SLCs 50 and 50A). We set out in July 2009 that we envisaged that the relevant licence conditions might have to be modified before September 2010 in order to enable the new boundary to take effect.

1.6. DNOs conducted a consultation on four boundary options between April and May this year, based on which they voted in favour of charging a customer on an EDCM basis from April 2011 if the customer is connected at a level of 22kV or above ('Raised Boundary').

1.7. We presented seven boundary options in our impact assessment consultation based on DNOs' consultation, subsequent discussions with DNOs and the initial evidence on illustrative impacts on charges provided by DNOs.

1.8. During the impact assessment consultation, we published an update on the illustrative impacts on 25 June 2010 based on a consultation on the EDCM published by DNOs on 18 June 2010. We also ran an open workshop on 28 June 2010 (see Appendix 2 for further details).

Features of the CDCM and EDCM

1.9. A comparison of the key features of the two charging methodologies is set out in table 1 below. The features of the EDCM are subject to change as the DNOs are still working on the methodology.

Table 1 - Key features of the common charging methodologies

CDCM	EDCM (Illustrative)
<ul style="list-style-type: none"> ▪ Started to apply from 1 April 2010. ▪ DNOs apply the same methodology. 	<ul style="list-style-type: none"> ▪ The EDCM is being developed and expected to replace each DNO's methodology for calculating EHV charges from 1 April 2011, subject to Ofgem approval. ▪ Each DNO is required to choose one of two methods for EHV charging for implementation from 1 April 2011.
<ul style="list-style-type: none"> ▪ Covers use of system charges for customers connected at the HV and LV levels but currently excludes certain designated properties that are treated on the same charging basis as premises connected at EHV. 	<ul style="list-style-type: none"> ▪ Covers use of system charges primarily for customers connected at the EHV level, subject to any change of the distribution charging boundary.
<ul style="list-style-type: none"> ▪ Charges are based on the relative contribution of different customers to a hypothetical 500 MW reinforcement. ▪ Charges are average per customer category. In particular there is a 'HV HH metered' customer group for customers connected to the HV system and a 'HV Substation HH metered' customer group for customers metered at a substation. 	<ul style="list-style-type: none"> ▪ Charges are based on future reinforcements triggered by additional capacity at different locations on the network. ▪ Charges are site specific and locational.
<ul style="list-style-type: none"> ▪ Subject to open governance arrangements through the DCUSA. 	<ul style="list-style-type: none"> ▪ Same as the CDCM.

Structure of this document

1.10. Chapter 2 sets out the relevant classes of customers and the charging boundary options as presented in the impact assessment consultation. Chapter 3 sets out the factors we used in evaluating the options and explains our decision. Chapter 4 sets out next steps and associated timescales. Appendix 1 contains a summary of the responses to the impact assessment consultation. Appendix 2 provides updated evidence on charging impacts.

2. Boundary Options

Chapter summary

This chapter provides definitions of the relevant classes of customers and the charging boundary options as presented in Ofgem's impact assessment consultation. There is a summary of DNOs' views on their preferred option.

Current classification of customers

2.1. SLC 50.10 defines the scope of customers subject to the CDCM as follows:

- *'Designated Properties are premises or Distribution Systems connected to assets on the licensee's Distribution System at a voltage level of less than 22 kilovolts, but excluding any such premises or Distribution Systems in respect of which the Use of System Charges levied by the licensee are calculated on the same basis as those levied in respect of premises or Distribution Systems connected to assets on the licensee's Distribution System at a voltage level of 22 kilovolts or more'.*

2.2. SLC 50A.11 defines the scope of customers subject to the EDCM as follows:

- *'Designated Properties are any of the following: a) Distribution systems connected to assets on the licensee's Distribution System at a voltage of 22 kilovolts or more; b) premises connected to assets on the licensee's Distribution System at a voltage of 22 kilovolts or more; and c) premises which do not fall within (b) ... but which at 1 April 2010 were excluded from the Common Distribution Charging Methodology by virtue of paragraph 10 of standard condition 50 (Development and implementation of Common Distribution Charging Methodology)'.*

2.3. If these definitions remain unchanged, the EDCM tariffs would apply to two broad classes of customers when the EDCM comes in to force on 1 April 2011:

- Customers and networks supplied at 22kV or above (**'Class A'**).
- Customers that are supplied at High Voltage (HV), i.e. at least 1kV but less than 22kV, through a dedicated feed from a primary substation and are excluded from the CDCM because they were on site specific tariffs at 1 April 2010 (**'Class B'**).

Relevant classes of customers

2.4. The boundary options that we presented for consultation in June 2010 are relevant to the following classes of customers.

- **Class A**, any customers and networks supplied at 22kV or above.
- **Class B**, existing customers supplied at HV (at least 1kV but less than 22kV) through a dedicated feed from a primary substation, but are currently subject to EHV charges. They can be further divided into three groups:

- **Class B1** - Customers who were classified as EHV premises and are currently metered at a substation with a primary voltage of 66kV or above.
- **Class B2** - Customers who were classified as EHV premises and are currently metered at a substation with a primary voltage of at least 22kV but less than 66kV.
- **Class B3** - Customers who are metered outside a substation.
- **Class C**, includes existing customers who are supplied at an HV level of at least 1kV but less than 22kV and are currently subject to the CDCM charges, as well as any new customers who will be supplied at the same levels. They can be further divided into three groups:
 - **Class C1** - Customers who are metered at a substation with a primary voltage of 66kV or above.
 - **Class C2** - Customers who are metered at a substation with a primary voltage of at least 22kV but less than 66kV.
 - **Class C3** - Customers who are metered outside a substation.

2.5. As shown in Table 2 below, raising the boundary would lead to the reclassification of 81 Class B customers from EHV/the EDCM to the CDCM, while lowering the boundary to incorporate all customers connected to the HV network would lead to a reclassification of 21,000 Class C customers from the CDCM to the EDCM. Since DNOs cannot currently model all customers connected to the HV network it is not possible to implement a solution incorporating all customers at this voltage level for 1 April 2011. We did not consult on this option for this reason.

2.6. In respect of the available options we set out in our impact assessment that lowering the boundary would lead to a re-classification of more than 400 customers. A provisional estimate of the numbers is that up to 1,000 Class C customers would move from the CDCM to the EDCM (i.e. this includes the current Classes C1 and C2 customers, plus an estimate of around 500 C1 and C2 customers from the DNOs' "unknown" category).

Figure 1 - Classification of customers

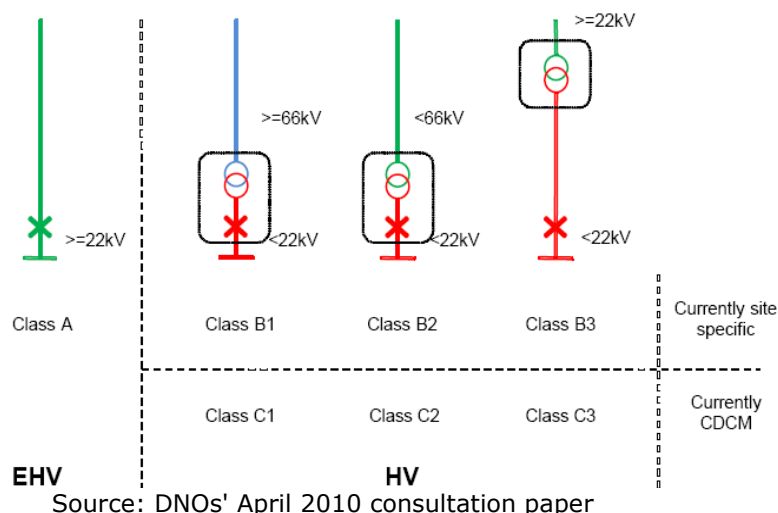


Table 2 - Estimated numbers of customers in different classes across GB

Customers	Class A	Class B	Class C
Demand	554	69	20333
of which:		B1 B2 B3	C1 C2 C3 Category unknown
		44 22 3	5 409 9,494 10,425
Generation	329	12	1032
of which:		B1 B2 B3	C1 C2 C3 Category unknown
		5 6 1	1 30 288 713
Total	883	81	21,365

Source: DNOs

Boundary options

2.7. The seven boundary options on which we consulted can be broadly classified into three groups: status quo and its variants (the first three below), raising the boundary - where a number of Class B customers would move to being charged according to the CDCM (option 2) and lowering the boundary (the last three) - where the biggest effect would be for a number of Class C customers to be reclassified as EDCM customers. Based on this way of grouping, we present the options in an order slightly different from that in our impact assessment consultation, however the option numbers and acronyms used to describe them remain the same.

2.8. Of the seven options, four were proposed by DNOs, namely option 1 No Change, option 2 Raised Boundary, option 3 Optional Raised Boundary and option 4 Lowered Boundary. We put forward another three to reflect stakeholders' responses to DNOs' boundary consultation and subsequent discussions with DNOs.

2.9. Table 3 below summarises the implications of different boundary options to different classes of customers and is a key reference for the discussions through out the remainder of this document.

Table 3 - Classification of customers under different options

	Number of customers	Option NC	Option NC2	Option ORB	Option RB	Option LB	Option LB2	Hybrid
Class A	883	EDCM	EDCM	EDCM	EDCM	EDCM	EDCM	Depending on the threshold if any
Class B1	49	EDCM	EDCM	EDCM / CDCM	CDCM	EDCM	EDCM	
Class C1 New (also known as A1)	6	CDCM	EDCM	CDCM	CDCM	EDCM	EDCM	
Class C1 Existing		CDCM	CDCM	CDCM	CDCM	EDCM	EDCM	
Class B2	28	EDCM	EDCM	EDCM / CDCM	CDCM	EDCM	CDCM	
Class C2	439	CDCM	CDCM	CDCM	CDCM	EDCM	CDCM	
Class B3	4	EDCM	EDCM	EDCM / CDCM	CDCM	CDCM	CDCM	
Class C3	9782	CDCM	CDCM	CDCM	CDCM	CDCM	CDCM	

Note: The column 'Number of customers' does not include 11,138 Class C customers because DNOs have not confirmed their connection arrangements. Of these category-unknown Class C customers, 10,425 are demand customers and 713 generation customers.

Options to maintain status quo

Option 1 - No change (NC)

2.10. Based on the current boundary definition in SLC 50A.11, from April next year, the EDCM would apply to all customers currently excluded from the CDCM (Class B) and all new customers supplied at 22kV or above (Class A).

Option 5 - No change 2 (NC2)

2.11. This option is identical to option 1 No Change with the addition that new customers connecting to the lower voltage side (11kV) of a substation with a primary voltage of 66kV or above will be charged under the EDCM. This maintains the policy of previous price controls, reverting to 'EHV premises' as the charging boundary definition. This means that new Class C1 customers (C1 New) would be subject to EDCM charges while existing Class C1 customers (C1 Existing) to CDCM charges from 1 April 2011.

Option 3 - Optional raised boundary (ORB)

2.12. As an extension of option 1, the EDCM would apply to customers supplied at 22kV or above (Class A) and to those Class B customers who choose to remain subject to the EDCM charges. DNOs consider that the choice under this option should be given on a one-off and irreversible basis.

Option to raise boundary

Option 2 - Raised boundary (RB)

2.13. This is a 'straight-line' option, with the EDCM applying only to customers supplied at 22kV or above (Class A).

2.14. All HV customers currently excluded from the CDCM (Class B) would be migrated to the CDCM on 1 April 2011. Within this class, customers who are not metered at a substation (Class B3) would be charged according to the CDCM tariff structure, i.e. the HV network tariff or for independent DNOs (IDNOs) a set of HV portfolio tariffs.

2.15. For customers metered at a substation with a primary voltage of at least 22kV but less than 66kV (Class B2), the relevant CDCM tariff is an HV substation tariff or, in the case of IDNO networks, a set of HV portfolio tariffs.

2.16. In respect of customers who are metered at a substation with a primary voltage of 66kV or above (Class B1), the applicable CDCM tariffs are being considered - as explained in the next paragraph, or, in the case of IDNO networks, a set of HV portfolio tariffs.

2.17. Under the CDCM tariff structure, Class B customers who are connected at a 132/11kV substation would be charged 'HV Substation' tariff upon migration to the CDCM. DNOs consider that applying the existing 'HV Substation' tariff to this group of Class B customers would overstate the costs for these customers. DNOs generally consider that, as a condition for this option, at least one new HV substation tariff within the CDCM would need to be created for both Classes B1 and C1. DNOs have confirmed that new tariffs are possible under this option.

Options to lower boundary

Option 4 - Lowered boundary (LB)

2.18. Under this option, the EDCM would apply to all existing and new customers metered at a primary substation (Classes B1, B2, C1 and C2) or supplied at 22kV or above (Class A).

2.19. Whilst newly connected customers (Class B1) have been treated under EHV charging arrangements since 1990, the lowering of the boundary would see the EDCM extended to all customers currently on CDCM HV Substation tariffs¹. In addition, some IDNO networks currently on HV portfolio tariffs would be migrated to the EDCM from 1 April 2011. HV customers that are currently excluded from the CDCM but are not metered at a substation (Class B3) would be migrated to the CDCM from 1 April 2011.

Option 5a - Lowered boundary 2 (LB2)

2.20. Option 4 LB could be further varied to exclude B2 and C2 customers from the EDCM which would give consistency across new and existing customers on a basis most

¹ According to Note 4 to Table 5 of Schedule 16 of the DCUSA, HV Substation tariffs apply to 'customers connected to the licensee's distribution system at a voltage of at least 1kV and less than 22kV at a substation with a primary voltage (the highest operating voltage present at the substation) of at least 22kV and less than 66kV, where the current transformer used for the customer's settlement metering or for metering used in the calculation of the customer's use of system charges or credits is located at the substation.'

closely aligned to the treatment of new EHV customers before we introduced the interim boundary definition in September 2009.

Option 6 - Authorised capacity (AC)

2.21. Some DNOs consider that customers of certain sizes in terms of electricity demand warrant treatment as if they were EHV customers even though they are connected to the network below 22kV, e.g. 10MVA or 15MVA. This approach can be applied on its own or as an add-on to other options. Taking option 5a (LB2) as an example, Classes B2, B3, C2 and C3 customers would be charged under the EDCM if their authorised capacity exceeds a set threshold, say 10MVA.

2.22. Table 3 above shows the re-classification of customers that would take place under the different boundary options presented in our impact assessment consultation.

DNOs' preferred option

2.23. DNOs' collective preference when they originally consulted was RB which appears to be primarily on the grounds of avoiding the risk of being accused of undue discrimination and achieving commonality. This choice means that about 80 Class B customers should become subject to the CDCM. Moreover, most of the DNOs thought that Classes B3 and C3 (i.e. those connected to the wider network rather than a substation) should be subject to charges under the CDCM rather than the EDCM.

2.24. However since then (and in response to our consultation) DNOs' views have in some cases developed further and four now favour other options. Scottish Power (SP) and Central Networks (CN) continue to support RB primarily for it being the clearest and in their view non-discriminatory. Scottish and Southern Energy (SSE) now support ORB for it being the cleanest and effective in minimising adverse charging impacts.

2.25. Four DNOs support lowering the charging boundary for a number of reasons, e.g. improving cost reflectivity, network efficiency and causing less adverse financial impacts on customers. In particular, Western Power Distribution (WPD) continues to support LB. Electricity North West (ENW) and EDF Energy Networks (EDF) are now in favour of LB2 and a hybrid approach along the line of option 6, AC, respectively. CE Electric (CE) prefers lowering the boundary in a way that restricts site specific terms to customers connected to dedicated EHV assets, irrespective of the metering voltage or the primary voltage of the dedicated substation. CE believes their preference also helps to alleviate disturbances to customers.

2.26. Further consideration of consultation responses is provided in the next chapter which considers what option should prevail and in Appendix 1 which summarises the responses.

3. Our Decision

Chapter summary

This chapter sets out the factors for evaluating boundary options, our evaluation and final decision.

3.1. We have consulted a wide range of interested parties with conflicting perspectives to inform our assessment of the available distribution charging boundary option. This has included holding an open workshop and considering responses to the impact assessment consultation. We have considered the available evidence and options. Our decision is to apply a lower boundary (LB, option 4) so that more customers are captured by the EDCM.

3.2. We consider that on balance a lower boundary is preferable as larger customers generally connect to a substation, and where they connect is often driven by the availability of local network which may be 132kV, 66kV or 33kV. Lowering the boundary further to include other substation customers as per option LB appears more cost reflective and there is no data or modelling restriction that prevents DNOs from doing so.

3.3. Our decision balances factors such as cost reflectivity and what we consider is practically achievable for implementation in charges from 1 April 2011. The variety of types of customer within each Class suggests that criteria in addition to where you connect should ideally be taken into account regarding which side of the charging boundary you sit. This view is supported by some of the responses to our consultation, for example by EDF. We set out our thinking in this chapter.

3.4. We note that many customers are predominantly concerned with the impact of the boundary decision on their immediate use of system (UoS) charges. We note that the LB option means that significantly more customers will be subject to the EDCM and that in most cases this should result in lower charges for customers who move from CDCM to EDCM charging arrangements.

3.5. Some DNOs are concerned about the risk of being accused of discriminating between different customer groups and implementation problems while other DNOs are most concerned about ensuring the arrangements are cost reflective and common. We note that it may take some DNOs some time to deliver charging arrangements according to this new boundary. We comment further on this in chapter 4 which considers next steps.

Factors

3.6. Respondents were broadly satisfied that the factors for evaluating distribution charging boundary options presented in the impact assessment consultation were relevant and appropriate. We discuss respondents' views on each of these factors below.

Commonality

3.7. DNOs' charging arrangements currently deliver a variety of charging boundaries both across DNOs and within a DNO's network area. Approaches that offer an option to customers as to whether they are CDCM or EDCM (option ORB) or where the approach to

similar customers differs over time (options NC and NC2) do not deliver a common charging boundary. A number of DNOs were not in favour of approaches that offer customers an option whereas a number of customers wanted to retain an option, predominantly due to charging impacts but some also thought that existing boundary arrangements should endure. For example, some respondents mention that they do not consider that customers should be given a choice on which charging methodology they should be priced under. ENW argue that choice raises potential discrimination issues, and CE said that this choice is likely to drive further inconsistencies going forward. However, CE is also broadly in favour of offering choice to existing customers.

3.8. DNOs are expected to ensure that UoS charges are determined on a common basis under the EDCM and CDCM. Respondents to our impact assessment consultation commonly recognised that the more customers are subject to the EDCM the more cost-reflective the overall charges are that result from this boundary.

3.9. Based on the general rules of power flow that many users at a certain voltage level would generally make no or minimal use of assets of lower voltage, we consider voltage level and connection point (e.g. at a specific type of substation) a reasonable basis for determining the charging boundary.

Cost reflectivity

3.10. Charges are determined on a site specific and locational basis under the EDCM and on a more average basis under the CDCM. Therefore, the more customers are subject to the EDCM the more cost reflective will be the overall charging arrangements. This point was widely recognised by respondents to our consultation. Secondly, if large customers in Class B are charged under the CDCM (which is an 'averaging' methodology primarily aimed at small users), they will have a large impact on the overall charges applied which impacts on the cost reflectivity of the CDCM.

3.11. We would like the charging arrangements to be as cost reflective as possible. Clear price signals can influence the decisions customers make about where to connect and how to manage their electricity demand which in turn helps to promote energy saving and help with the efficient development of the network.

Competition

3.12. The current arrangements mean that equivalent customers are treated differently (e.g. Classes C2 and Class B2 customers) which could potentially distort competition. For example equivalent generators may be subject to different charging arrangements depending on when they connected and which network area they are connected in. Some respondents commented on this factor directly, for example CN states that the raised boundary option is clear and delivers a level playing field.

3.13. Other things being equal, improved transparency in the charging arrangements will make it easier for industry participants and customers to manage their distribution costs, particularly where these players operate in a number of DNO areas. This should remove one barrier to entry to new players such as distributed generators and small suppliers. ENW note in their response that a boundary that is transparent and easy to understand by generators and suppliers is preferable.

Perverse incentives

3.14. It is important that the charging boundary minimises the creation of perverse incentives, for example new customers choosing a connection level purely based on the differential in charges under the CDCM and EDCM.

3.15. A number of respondents commented on this point, for example EDF believes that the average CDCM and EDCM charges at the charging boundary should be broadly similar. CN believes that some options make 'gaming' the boundary more expensive (e.g. option RB) than others where simply relocating the meter may be cheaper and easier.

3.16. The EDCM is currently still under development. Illustrative charges currently show large differentials between the EDCM and CDCM charges around the boundary and this suggests that there is scope to improve the cost reflectivity of the EDCM and the CDCM².

Customer impacts

3.17. The illustrative impacts on charges presented here are mainly based on the initial evidence provided by DNOs. This initial evidence has been updated a number of times in recent months and remains subject to further changes in light of the ongoing development of the EDCM.

3.18. Table 4 shows the illustrative impact of a change of charging boundary should option RB be adopted for Class B customers. It shows the differential between the illustrative charges under the EDCM and the CDCM. If the boundary is raised, 81 Class B customers would have to migrate from the current EHV methodology to the CDCM. When the EDCM starts to apply on 1 April 2011, about 50 of these customers could see an increase of up to 4 times more than the equivalent under the EDCM, but 18 Class B demand customers might pay less under the CDCM than the EDCM.

3.19. In respect of Class B generation customers, about 12 in total, the possible impacts on them currently appear to be far less material, with only one of them expected to pay a charge in the region of £23,000 after raising the boundary. It is unlikely that this option would lead to specific barriers for prospective distributed generators to enter the energy market.

3.20. If the boundary is lowered (option 4 LB), a maximum of around 1,000 existing Class C1 and C2 customers would be moved from the CDCM to the EDCM and new customers who are connected at a substation would be classified as EDCM customers. The initial evidence shows that the affected Class C customers would pay distribution charges that are generally lower under the EDCM than the CDCM, as illustrated in Appendix 2. This Appendix includes a comparison between the current charge and the

² Examples of improvements we expect the industry to consider further can be found in Chapter 2 to our decision on the CDCM, Electricity distribution structure of charges: the common distribution charging methodology at lower voltages (Ref 140/09), available on our website at <http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Pages/DistChrgs.aspx>.

illustrative charge that would start to apply from next April under different options and sets out the combined impact of a boundary change and the introduction of the EDCM.

Table 4 - Illustrative impacts of option Raised Boundary on Class B demand customers' distribution charges

From EDCM to CDCM	(£'000 or %)			Number of cases of increase by threshold					
	Smallest	Average	Largest	>£1m	£500k-1m	£250-500k	£100-250k	£0-100k	=<£0
- Absolute change	-£312	£164	£1,150	2	4	12	12	20	18
- % change	- 99%	+ 83%	+416%	>10 times	5-10 times	3-5 times	1-3 times	0-1 times	=<0 times
				0	0	3	22	25	18

Source: DNOs' initial evidence and their consultation on the EDCM published on 18 June 2010. The changes shown are equal to illustrative CDCM charges minus the equivalent illustrative EDCM charges.

3.21. Demand customers responding to our consultation showed a preference for minimising the adverse impact on their charges. A number of them expressed wider concerns that option 2 RB could result in damage to businesses' competitiveness and loss of jobs. Some respondents noted that it appeared to be a backward step to move from the current EHV (generally site specific) charge to a more average basis under the CDCM. Another respondent, SABIC, noted that to move to the CDCM now would not be fair because by virtue of being an EDCM customer they did not take the opportunity to influence the development of the CDCM or feed in to consultations before it went live in April 2010.

Deliverability

3.22. The definition of the common boundary needs to be resolved before DNOs submit their EDCM proposals on 1 September 2010. Some responses (for example the response from Bath University/DLT Consulting) refer directly to limitations in data and timescale constraints with some of the options but believe that delivering the more cost reflective approach is optimal, even if a transition period is then required in order to allow for delivery of the new arrangements. We comment further on practical issues around deliverability in Chapter 4 on next steps.

Evaluation

3.23. Our evaluation of the boundary options is based on a number of sources of evidence, including discussions with DNOs, input from customers at our workshop and the responses to DNOs' and our consultations on boundary options in recent months (see Appendix 1).

Options to maintain status quo

3.24. The options within this category, i.e. NC, NC2 and ORB, have the benefit of providing stability - thus avoiding possible increases in distribution charges - for a minority group of existing customers. Many respondents within the end user group (mainly Class B) naturally prefer these options. However, we note that this benefit can, to a large extent, be achieved by lowering the boundary which has an impact on a very small number of Class B customers.

3.25. Maintaining the status quo will not achieve a common boundary for all customers because legacy arrangements would continue to apply to existing customers rather than

the boundary definition that applies to new customers. This reduces transparency and is may confuse customers who operate across a number of network areas and form a barrier for prospective small suppliers and distributed generators to enter the energy market.

3.26. A number of responses, mostly by customers, argue that the no change approach appears the correct way to move forward. For example, Haven Power notes that customers connected in good faith and without the expectation of future change. Heathrow Airport set out that the boundary should not change once determined at the time of connection. Welsh Power argues that the boundary should not change, and notes that customers expect the level of charges to be broadly similar over time.

3.27. Some responses argue that giving existing Class B customers an option over whether they are charged on the basis of the CDCM or EDCM (ORB) is not unduly discriminatory. For example, SSE believes that in giving the option mitigates potential step changes in charges and appears the most appropriate, proportionate and not a discriminatory way to move forward. Heathrow Airport argues that customer choice is inherently non-discriminatory in that in a perfectly competitive market customers are expected to naturally seek the lowest cost use of system charges.

3.28. We consider that whilst such comments may potentially be true in principle, the options currently presented do not actually deliver the same choice to the same types of customers because Classes B and C customers are not treated symmetrically. This is because under ORB Class B customers are given a choice as to whether they want to move from EHV-level charging to the CDCM but Class C customers are not given the choice of moving from CDCM to EHV-level charging even though these customers share the same characteristics.

3.29. A number of respondents comment that they expected the charging boundary to stay constant over time. There is no requirement for this: charging arrangements evolve over time and connectees are therefore subject to these changes in methodology and boundary over time. At our workshop on the boundary issue on 28 June some customers set out that they value certainty and did not necessarily oppose a change in boundary in principle. A primary concern was the potential impact on charges, particularly under the RB option, and some delegates (along with respondents to our consultation) asked Ofgem to ensure there would be appropriate measures to help industry manage any adverse impacts on customers.

3.30. On balance, we share DNOs' general concerns that variants of maintaining status quo is potentially not tenable. Other than noting the number of legacy arrangements might reduce over time, most DNOs find it hard to justify why existing and new customers who are connected in the same manner should be charged on different bases. For example, under option NC, about 25 Class B2 customers and 400 Class C2 customers would be subject to EDCM charges and CDCM charges respectively although they are all supplied at HV levels, connected and metered at a substation with a primary voltage between 22kV and 66kV. However, evidence suggests that Class B2 customers would on average pay significantly lower distribution charges under the EDCM than their Class C2 counterparts. Most of the DNOs find it hard to justify giving existing Class B customers a right to 'cherry pick' the basis of charging per option ORB.

Option to raise boundary

3.31. The option under this category, option 2 RB, has been widely criticised by some end users from Class B. Four DNO groups no longer support this as their favoured option.

3.32. A straight-line boundary based on voltage level under RB provides the clearest boundary when compared with other options, regardless of the timing and location of connection, without further exceptions to any groups of customers. All DNOs would apply the same rule. Option RB appears to be non-discriminatory overall.

3.33. The clear and transparent nature of option RB makes it easy for everyone to understand the boundary and would in this sense facilitate competition.

3.34. If option RB is adopted, about 80 Class B customers would become subject to CDCM charges from April 2011. The financial impacts on about 50 of them could be substantial, and involve paying CDCM charges that would be up to four times higher than they would have paid if subject to the EDCM (see details in table 2 above). Some customers argue that they would be disproportionately and unfairly affected by this option, and this option would lead to wider consequences including damaging their international competitiveness and job losses. Based on the locations of these electricity users, it appears that the major adversely affected areas are the Midlands and certain regions in the North. One end user told us their concerns over the threat of charges resulting from option RB to their business viability.

3.35. The boundary under this option is arguably the least cost reflective. The existing CDCM tariff structure may not cater well for big Class B customers as the CDCM would then have far more customers with substantially different levels of electricity demand within two tariff groups (HV Substation and HV network), from under 1MVA to well over 10MVA.

3.36. As things stand, under the RB option the average charges for HV Substation / HV network groups would become less cost reflective. This would be likely to overstate the charges for the big users who make minimal or significantly less use of the HV network than small users. DNOs said they would create one substation tariff under the CDCM for B1 customers if this option was adopted.

3.37. As shown in table 3 above, the fewest customers would be subject to the EDCM under this option when compared with other options. The significance is that although the affected group, Class B, is a minority group of under 100 customers, overall they are some of the biggest energy users in GB. This boundary option would miss an opportunity to give them more targeted pricing signals that might encourage them to manage their electricity consumption and contribute to the efficient use and development of the network.

3.38. This option could lead to a perverse incentive to the detriment of network efficiency. For example, as Stansted Airport suggested in their response to our consultation, a large user with multiple connections might move load from a Class B2 connection that has become subject to the CDCM to a Class A connection in a manner which is inconsistent with the optimal network design of their DNO.

3.39. Migration of large users to the CDCM is likely to require expanding the CDCM tariff structure, e.g. creating a HV Substation tariff for 132/11kV substation customers. There

might be more demand for new tariffs for specific groups of customers, for example tariffs within CDCM that further subdivided on the basis of a customer's capacity requirements.

Options for a lower boundary

3.40. Three options fall under this category: options LB, LB2 and AC. There are two key issues to consider: the rationale for lowering the charging boundary and where and how the boundary should be defined.

Rationale for lowering the charging boundary

3.41. The key benefit is being able to give large electricity users site specific / locational pricing signals based on the EDCM that are more cost-reflective than those under the CDCM. This would encourage large users to make efficient siting and use of network decisions, and to reward users who provide a benefit to the distribution network, for example distributed generation located close to load or for customers implementing demand side management. DNOs forecast very significant load related investment on their networks between 2010 and 2015 (£2.4bn net of customer contributions³) and in our view lowering the boundary would help to promote efficient network investment in this period and beyond, and help deliver against the government's climate change objectives.

3.42. In the main, applying the EDCM to more customers appears to be a fairer practice as EDCM charges are arguably less prone to approximation errors than the CDCM.

3.43. The three options grouped within this category would lead to different charging impacts on existing customers, as shown in table 3 in Chapter 2. All three options would lead to far fewer adverse charging impacts overall on Class B customers than the raised boundary option, and lead to lower charges on average for the affected Class C customers.

3.44. In particular, LB would lead to a reclassification of three Class B3 customers. On an illustrative and average basis, their annual CDCM charges would be about 120% (or £180,000) higher than the EDCM equivalent. Affected Class C1 and C2 customers (more than 400, and potentially up to about 1,000 in total) would see their distribution charges under the EDCM reduce by about 50% on average based on the DNOs' sample of these customers when compared with their current CDCM charges.

3.45. Under LB2, around 40 Class B2 and B3 customers (half of Class B) would move down to become subject to the CDCM while Class C1 customers move up to become subject to the EDCM. The charging impacts after this reclassification would be broadly the same as those described above.

3.46. The possible impacts of using authorised capacity as a criterion for defining the boundary, under option 6 (AC), are not entirely clear as some DNOs are unable to provide the necessary data regarding Class C customers. As far as Class B is concerned,

³ Net core load related expenditure for DPCR5 against DPCR4 outturn.

if the authorised capacity is set at 10MVA as some DNOs suggested, 40-50% of these customers would have to pay CDCM-based charges.

3.47. This means that options under this category would be able to address some customers' concerns over possible increases in distribution charges, with option LB causing no change to the charging classification of Class B customers except the three B3 customers.

3.48. All three lower boundary options are clear and common irrespective of the date of connection, treating existing and new customers in the same way. This would increase transparency, cause less confusion and facilitate competition which is particularly useful for prospective suppliers and distributed generators to enter the energy market.

3.49. We set out below our views on some major concerns raised by DNOs over lowering the boundary, including concerns over potentially discriminating between customers and a risk of creating perverse incentives.

3.50. In their responses to our consultation some respondents consider whether customers connected at a level below 22kV should be charged on the same basis regardless of the size of the customer (see table 5 below for an indication). For instance, LB uses substation connection to identify large users who are captured by the EDCM. Customers of a similar size and connected at below 22kV (but not at a substation) will be subject to CDCM charges which are generally higher than EDCM charges. DNOs are concerned that this differential in treatment is potentially discriminatory, especially if these EDCM and CDCM customers are located close to each other.

3.51. The data in table 5 below counterbalances this concern as it suggests that there are grounds for distinguishing customers connecting below 22kV in terms of customers connected at a HV substation and those that are not. In particular, at HV levels larger customers generally connect directly to a substation rather than to the network. Our understanding is that many connections direct to the substation additionally make very limited or no use of the wider HV network. We think that whether a customer is or is not connected at a substation is therefore a good proxy for size.

Table 5 - Indicative size of customers in terms of authorised supply capacity

	Class B	Classes C1 and C2	
Current classification	EHV	CDCM HV Substation tariff (HH metered)	CDCM HV tariff (HH metered)
Average authorised supply capacity	14.4MVA	4.5MVA	1.1MVA

Note: The size of CDCM customers is based on the sample provided by DNOs.

3.52. We agree that there could be instances where customers located close to each other could be charged according to different methodologies. Ideally we would like to use two (or a number of) criteria for deciding which methodology a customer is subject to. But at the moment (given the data limitations about size etc) we think the best we can do is to use this proxy.

Risk of perverse incentives

3.53. Some DNOs are concerned that, after lowering the boundary, there would be a perverse incentive for new customers to 'cherry pick' a connection level to take advantage of the lower charges in the immediate future under the EDCM. This might in turn lead to adverse unintended consequences that would not be conducive to the development of the common charging methodologies and would cause more pricing uncertainties.

3.54. This can, to a certain extent, be prevented by DNOs considering connection requests in line with their statutory duties⁴ and, as suggested by some consultation responses, potentially exploring whether this risk can be addressed through open governance arrangements under the DCUSA. In the meantime, Ofgem would work with the industry to monitor EDCM connections and take proportionate and targeted intervention as necessary.

The definition of the lower boundary

3.55. We have consulted on three variants of the lower boundary option and set out below the rationale for our decision to apply option LB.

3.56. Ideally we would like to be able to apply site specific and locational EDCM charges to more users where this will help to promote network efficiency and energy saving. The EDCM currently models the network down to HV substations but not the wider HV network. It is therefore not currently possible to model the impact of subjecting more than 20,000 wider HV network customers, i.e. Class C3, to EDCM charges. This constraint also limits the extent to which 'hybrid' options can be implemented at the current time. Given the way EDCM models are currently constructed, a blanket application of EDCM to capture all Class C customers appears to be administratively infeasible.

3.57. On this basis, we consider it sensible at this stage to apply the EDCM to customers in a common way by referring to connections at a substation. This appears an effective way to capture generally larger users within the EDCM, giving them more cost reflective price signals.

3.58. Under LB2, EDCM would apply to a smaller group of substation customers (only Classes B1 and C1) than option LB which additionally captures Classes B2 and C2.

3.59. ENW supports LB2 as they consider it is transparent and would have a low impact on customers. This DNO describes LB2 as 'non-discriminatory' although customers who are connected at a the lower voltage 11kV busbar of a 132/HV or 66/HV substation and others who are connected to substations of lower voltage would be treated differently from other 11kV customers under this charging boundary option. They explained that they preferred option LB2 to LB as extending the EDCM further to 33/HV customers the

⁴ DNOs are required under the Electricity Act to develop and maintain an efficient, co-ordinated and economical system.

former group of substation customers commonly would not have an option to connect at 33kV.

3.60. Consultation responses indicated some support for using authorised supply capacity, e.g. 10MVA, to identify users to whom the EDCM should apply. As set out above, the available evidence shows that this is not adequately practical at this time. Presently most of the DNOs do not have the required data about some of the customers who are connected to the network rather than at a substation. In addition to this some responses noted that changes to each customer's electricity demand over time could lead to 'flip-flopping' between the EDCM and CDCM charging categories (although we note this may be mitigated by using rolling annual average authorised capacity or other measures). This would in turn lead to extra administrative burdens to DNOs, IDNOs and suppliers and price volatility (as charges need to be re-calculated after migration). In addition we have noted a possibility that a capacity-based approach would result in a boundary charging dispute between IDNOs and DNOs because the profile of boundary capacity charges may not be reflected in an IDNO's all the way charges.

3.61. Consultation responses, including Elexon's response, have also noted the potential impact of this option on the calculation and assignment of line loss factors. We have been working with Elexon and the DNOs to ensure that this option is implementable.

Decision

3.62. On balance, Ofgem considers it is most appropriate to lower the boundary (option 4, LB). The charging boundary under LB allows a common boundary to be implemented. This option should facilitate competition including entry of smaller suppliers and distributed generators. Whilst raising the boundary delivers a clear cut boundary, in doing so it excludes many large customers who are currently subject to EHV charging and this appears to be a retrograde step.

3.63. Connection at a substation appears more reasonable than other criteria brought forward so far for determining which customers should be charged on an EDCM basis. We acknowledge that some larger customers may be connected to the wider HV network and a 'hybrid' option may be preferable.

3.64. However this does not seem implementable at this time given EDCM modelling constraints on the HV network. The LB approach in any case appears to provide a proxy for the size of customer connecting since larger customers tend to connect to a substation rather than the wider network. We would like to see DNOs consider hybrid options further since applying the boundary in a way that also considers customer size may be the most appropriate approach to take in the longer term.

3.65. We also note that the LB option keeps charging impacts to a minimum. For example almost all of the Class B customers (B1 and B2) would remain subject to the existing EHV charging methodologies or the new EDCM from 1 April 2011. In respect of implementation, DNOs have still have time to prepare for the necessary change to the distribution charging boundary. DNOs proposed this option early in 2010 and consulted on it in April as one of their four feasible options.

3.66. We note that this new boundary will require DNOs to conduct further work to identify the customers captured by the EDCM and to model the charges that arise when these customers are included in this charging methodology. Particularly where DNOs have a large number of customers migrating to the EDCM, we recognise that this may

have an impact on the timescale within which it is possible for the DNO to apply EDCM charges on customers affected by the boundary decision. We will take this factor into consideration when reviewing the DNOs' EDCM submissions later this year.

3.67. We do not consider that options to maintain the status quo are appropriate because they do not deliver commonality or transparency. We have concluded that option RB is not appropriate mainly because it does not help to achieve more cost reflective charges and thereby misses an opportunity to encourage the efficient development and use of the networks.

3.68. Some respondents requested more time to consider the implications in light of the ongoing development of the EDCM. We are satisfied that Ofgem and the industry have made reasonable efforts to increase the awareness of the boundary issue among potentially materially affected parties and provide customers with opportunities to bring forward their cases. This view is supported by the consultation responses and by some of the comments made at our workshop.

3.69. On balance we think it is appropriate to resolve the uncertainty over this issue without further delay. A clear decision now to resolve this issue should allow DNOs to submit EDCM proposals based on the new boundary in time for the EDCM to be implemented in April 2011.

4. Next Steps

Chapter summary

We outline next steps and associated timescales based on our decision on the boundary options.

Statutory consultation

4.1. We will shortly be publishing our statutory consultation on the changes to the licence required to implement the new boundary. We have held two licence drafting working group meetings to discuss the drafting with DNOs. The consultation will last for 28 days.

4.2. Following DNOs' responses to our statutory consultation we plan to publish a Modification as soon as possible and by 27 August 2010. Should DNOs accept our proposals they will have an obligation to follow the new boundary definition in respect of charges to customers from 1 April 2011.

4.3. The timescales for this decision have been driven by earlier DNO work and we are keen to find a pragmatic way forward so that charges can take effect on the basis of option LB from 1 April 2011 and that customers affected by this decision understand their likely charges as soon as possible.

4.4. DNOs are affected differently by this decision. Some have very few additional customers to model in EDCM as a result of lowering the boundary whilst others may have more than 200. DNOs who may find it difficult to comply with our decision or proposed licence conditions on the boundary within the required timescales for submitting their EDCM proposals should discuss this with us promptly. We are prepared to explore transitional arrangements where this is the case as it is not our intention to put DNOs potentially in breach of their licence should they be unable to complete all work on this for September. We will continue to work with DNOs to ensure an implementation issues are resolved, particularly around the treatment of line loss factors.

Illustrative charges - updating customers

4.5. All illustrative charging impacts presented to date are subject to change in light of the ongoing development of the EDCM. We expect DNOs to provide further updates on any material changes to their estimates of impacts on customers in a transparent and timely manner, including the indicative tariffs for IDNOs. Customers affected by the boundary change should be informed as soon as possible.

Longer term development

4.6. We expect DNOs together with other interested parties would follow up on some issues raised during the charging boundary debate including exploring further the potential for hybrid approaches, particularly in respect of HV network customers. The change of charging boundary has knock-on impacts on the charges for the lower

voltages (i.e. CDCM) since a DNO's revenue is recovered across CDCM and EDCM customers.

4.7. DNOs' initial evidence shows that the EDCM and CDCM charges for the same customer could differ substantially. Some DNOs have suggested that there is need to investigate this differential and assess whether these would be reduced through improvements in the two common charging methodologies. We expect the industry to make use of the open governance arrangements under DCUSA⁵ to further improve the charging methodologies and ensure the methodologies will adapt to changes in the needs of network users.

⁵ See <http://www.dcusa.co.uk/Public/Default.aspx?ReturnUrl=%2fDefault.aspx>.

Appendices

Index

Appendix	Name of Appendix	Page Number
1	Responses to Impact Assessment Consultation	26
2	Impact on Charges	32
3	The Authority's Powers and Duties	38
4	Glossary	41
5	Feedback Questionnaire	43

Appendix 1 - Responses to Impact Assessment Consultation

1.1. In our June 2010 consultation document 'Electricity distribution charging boundary between higher (EDCM) and lower (CDCM) voltages - Impact Assessment' (reference number 72/10), we sought the views of respondents in relation to any of the issues set out in the document as well as some specific questions. This chapter sets out the questions we asked in the consultation and summarises respondents' views.

Consultation questions

Chapter 2 - Boundary Options

Question 1: We welcome views on any aspect of the options presented in this chapter, and seek to understand whether any additional options or issues should be considered.

Question 2: We seek views on whether 'sole use' assets should feature in the definition of the boundary.

Question 3: We welcome views on how customers subject to 'special' metering arrangements should be treated in the definition of the boundary

Question 4: We welcome views on how customers subject to 'special' settlement arrangements should be treated in the definition of the boundary.

Question 5: We welcome views on how 20kV customers should be treated in the definition of the boundary.

Chapter 3 - Option Assessment

Question 1: What are your views on our suggested factors for considering the boundary options, and are any other factors relevant?

Question 2: What are your views on the grounds and issues that should be taken into account in determining whether any potential discrimination can be objectively justified? What are your views as to whether discrimination occurs in respect of the options under consideration?

Question 3: We seek views on option 6 along with views on any of the hybrid approaches that respondents consider appropriate.

Question 4: We seek views on the role/treatment of 'sole use' assets in defining the CDCM/EDCM charging boundary and on metering and settlement issues that have been raised.

Question 5: What issues are there around charging impacts? In relation to these are any specific measures required?

Question 6: In view of this chapter and the impact assessment in appendix 3, what is your preferred option for the boundary, and why?

Chapter 4 - Next Steps

Question 1: We seek views on the next steps we have noted and the associated timescales.

Question 2: We seek views on whether the boundary should additionally change over time, for example in response to technological developments.

Appendix 3 - Impact Assessment

Question 1: What other material impact of a boundary change as per the options presented in this document on consumers should be taken into account in considering boundary options?

Question 2: We are interested to receive feedback from IDNOs about the implications of this boundary issue to them, and how the concerns if any could be addressed.

1.2. On 28 June 2010, Ofgem held an open workshop as part of the impact assessment consultation. We discussed the following questions with delegates at the workshop:

- How should the tradeoffs be assessed?
- Should the boundary apply in a common manner across similar customers?
- Should cost reflectivity take precedence over customer impacts?
- What are attendees' most/least preferred options? Can your breakout group agree a common position?
What timescales should apply if there is a change in boundary? Should a change be phased in, and how?

1.3. We received 27 responses in writing to the consultation. The notes of the discussions at the workshop and the written responses which were not marked as being confidential have been published on our website at www.ofgem.gov.uk⁶ and copies of these non-confidential responses are also available from Ofgem's library. A summary is given below.

Summary of responses

Respondent	Preferred option
BAA Heathrow	Optional Raised Boundary
BAA Stansted	Optional Raised Boundary
BOC Limited	(Confidential)
CE Electric UK	A variant of Lowered Boundary 2, using connections to dedicated EHV assets to determine the application of EHV charging methodologies/EDCM
Central Networks	Raised Boundary

⁶ <http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Pages/DistChrgs.aspx>

Respondent	Preferred option
Chemical Industries Association	Considering these favourably: Optional Raised Boundary, No Change 2, Authorised Capacity
Chevron Ltd	The more cost-reflective options
EDF Energy Networks	Hybrid, lowering the boundary in terms of connection arrangements and authorised supply capacity
Electricity North West	Lowered Boundary 2
Elexon Limited	No preference
GTC	Raised Boundary
Haven Power Limited	No Change
Independent Power Networks	(Confidential)
Major Energy Users Council	Urge caution if move from status quo
Morgan Stanley	No Change
Nissan Motor Manufacturing (UK) Ltd	Optional Raised Boundary
Npower	Optional Raised Boundary
Premier Foods plc	(Confidential)
SABIC UK Petrochemicals Limited	Not in favour of Raised Boundary
Scottish Power	Raised Boundary
Scottish Power Retail	Raised Boundary
SSE	Optional Raised Boundary
The Society of Motor Manufacturers and Traders Limited	Optional Raised Boundary
University of Bath	Lowered Boundary if practical, otherwise Lowered Boundary 2
Welsh Power Group Limited	Optional Raised Boundary
Western Power Distribution (WPD)	Lowered Boundary

Note: The above table does not include one respondent as they have requested anonymity.

Customers

1.4. It appears that the majority of the end users who responded to our impact assessment consultation are Class B customers, i.e. currently connected at a substation at a level below 22kV but are currently subject to EHV charging methodologies. These customers come from a wide range of sectors, such as energy generation or supply, motor manufacturing, chemical industries and infrastructure operation.

1.5. Respondents are broadly satisfied that the options and factors for evaluating options presented in the impact assessment consultation are relevant and appropriate. Most of these existing customers said that customer impacts and legacy arrangements were important for determining the distribution charging boundary. Some other customers considered cost reflectivity and commonality as key objectives.

1.6. Most of the end users prefer maintaining status quo to avoid potential higher charges under the CDCM (described as 'disproportionate', 'unjust', 'substantial',

'shocks'), and strongly oppose RB that would lead to negative consequences such as damaging international competitiveness (especially car manufacturers), loss of jobs, damaging regional growth balance (as most B customers are manufacturers in the Midlands / the North).

1.7. They commonly feel strongly that RB is unfair on the following grounds:

- The electricity connection in question is a long term investment decision (commonly involving committed financial arrangements) made in good faith based on past charging rules. Any change of boundary should ensure consistency with past rules.
- The raised boundary is not cost reflective for those large users who make no or minimal use of the HV network.
- Some customers argued further that using the date of connection as one of the criteria to determine the charging boundary is not unduly discriminatory.
- The potential increase in charges under this option is disproportionately large and any change of boundary should ensure minimal customer impact especially at the current time of uncertain economic prospect.
- This option would lead to adverse consequences as outlined in the previous paragraph.
- BAA Stansted suggested that this option could also lead to a perverse incentive, e.g. moving load between different connections in a manner which is inconsistent with the optimal network design.
- The chemical industries' representative said it would be unfair for some of the customers that had to move to the CDCM without an adequate opportunity to influence the development of the CDCM.

1.8. One end user is concerned with the threat of raising the boundary to their business viability.

1.9. Almost all of the respondents from the end-user group demanded appropriate transitional relief if RB is adopted to help the affected businesses avoid the potential price shocks and perform business planning with more certainty, e.g. by phasing in new charges over a medium term.

1.10. Some are in favour of lowering the boundary so that more customers can pay more cost reflective charges under the EDCM, while the others questioned whether LB and ORB are discriminatory. One supplier is concerned that lowering the boundary would lead to migration of a large number of customers to the EDCM and thus a large impact on a supplier's administrative burden and quality of customer services.

1.11. A small group of large end users commented that authorised capacity and sole use assets are possible proxies for determining the charging basis in terms of materiality of usage of the network. However some of them also expressed reservation as these proxies might lead to perverse incentives, 'flip-flopping' resulting in extra price volatility for customers and administrative burdens for suppliers and network operators.

1.12. There is a clear desire for more proactive engagement. In the main, customers noted some significant improvements such as the boundary and EDCM workshops run by Ofgem and DNOs but thought earlier and more transparent engagement would be more helpful. Some of them suggested that the potentially affected parties would need more time to consider the implications of the boundary options. In addition, some customers envisage that, in light of the material price differential for the same customer under the CDCM and the EDCM, the less cost reflective CDCM requires further improvements, such as creating new HV tariffs.

DNOs/IDNOs

1.13. Compared with DNO views expressed in their charging boundary consultation in April, there is still a clear desire for a voltage-based boundary but four DNOs have now changed their preference. This means that WPD continues to support option LB while SP and CN to support option RB. EDF has built on its concept of a hybrid approach and two DNOs (CE and EDF) are now in favour of different ways of lowering the charging boundary with SSE now backing ORB.

1.14. Most DNOs/IDNOs commented that the assessment of boundary options should be undertaken in the context of the ongoing development of the EDCM as the charging impact of the EDCM is highly relevant to customers.

1.15. SP and CN prefer the RB approach as they consider that this option provides a clear, transparent and non-discriminatory boundary. CN thinks that this boundary is closely aligned with and reflective of the different network assets involved in providing use of system to two distinct groups of customers, i.e. EHV and HV. The Gas Transportation Company Limited (GTC)⁷ supports the same option and thinks that the boundary should be defined in terms of the voltage at the ownership boundary.

1.16. SSE prefers option ORB on a one-off and irreversible basis. They are concerned that option RB would result in a high charging impact for some Class B customers.

1.17. ENW, WPD, CE and EDF support different ways of lowering the boundary. Specifically:

- ENW favours LB2 for its benefits of avoiding adverse charging impacts on some customers, providing a non-discriminatory and transparent boundary. They consider that some Class B1 and C1 customers were prevented from making an EHV connection because of the limited availability of 33kV infrastructure within the vicinity of their sites.
 - WPD prefers LB as the most appropriate way to improve cost reflectivity and network efficiency given the current data availability and modelling constraints. They are concerned that the potential charging shocks under RB may threaten the financial viability of some customers.
 - CE prefers lowering the boundary in a way that restricts site specific terms to customers connected to dedicated EHV assets, irrespective of the metering voltage or the primary voltage of the dedicated substation. They consider that this helps to alleviate disturbances to customers resulting from constructing a definition based on how they are connected to the source of their capacity rather than a potentially over-simplistic definition based on metering voltage.
 - EDF considers that the most appropriate charging boundary could be based on multiple dimensions, i.e. customers could be treated as subject to EHV charging methodologies/EDCM if they are connected to dedicated assets (including a substation), or if the user's agreed supply capacity exceeds a certain threshold. This hybrid option in their view is more cost reflective. Most of the other DNOs, however, find a capacity-based boundary impractical due to the risks of discrimination, perverse incentives (potentially not conducive to network efficiency) and price
-

⁷ The electricity side of GTC's business is in respect of The Electricity Network Company Limited.

volatility (as a result of customers flip-flopping between EDCM and CDCM as their capacity changes), as well as the difficulty in setting an agreeable threshold.

1.18. WPD, CN, SSE do not consider 'sole use' assets relevant for defining the charging boundary and these assets may not be 'sole-use' on a permanent basis.

1.19. There is some support for having the charging boundary based on the voltage at ownership boundary. WPD, EDF, GTC, CN support that it is the location of the commercial boundary rather than the location of the meter that should decide the applicable charging methodology. SSE believes the charging methodology should align with voltage at which customers are connected.

1.20. It appears that some respondents were not familiar with the issue of treatment of 20kV customers raised by EDF⁸. Most of those who responded to this issue tended to agree that classifying connections at 20kV under EDCM is worth exploring.

1.21. DNOs and IDNOs recognise that the schedule for resolving the boundary issue is tight. CE suggested delaying implementation of any boundary change by 12 months. Further, we noted the general desire for a stable boundary. EDF and WPD suggested that technological development and WPD suggest that a change in the boundary between connection and use of system charges are some of the possible drivers for reviewing the distribution charging boundary.

Other interested parties

1.22. Elexon raised an issue about the limitation of available line loss factor (LLF) classes for new EHV/EDCM customers following migration from the CDCM. We understand from reading Elexon's response and subsequent discussions that there are a number of interim options to mitigate this issue and the industry should be able to put in place an enduring solution.

1.23. The University of Bath supports lowering the charging boundary for its benefits such as improving cost reflectivity and being in line with the market development, e.g. smarter grid. They share a common concern that the potential perverse incentive of cherry picking charging basis could lead to a 'substantial cost to the system development' according to Brazil's experience⁹.

⁸ We learned from EDF that there are limited connections at 20kV in London and the technology has not yet been rolled out on a full commercial scale.

⁹ No further details were provided in this response about the comparison with the regime in Brazil.

Appendix 2 - Impact on Charges

1.1. The following tables show again the illustrative charging impacts on Class B and a sample of Class C1 and C2 customers under different charging boundary options.

1.2. This Appendix is based on the update to our impact assessment¹⁰ and shows the illustrative impact on distribution charge of various options in terms of the differential between the current charge and the new rate that would apply if a specific boundary option is adopted. The differential is equivalent to the combined impacts of a change of charging boundary and the introduction of the EDCM. The combined impact is not the most relevant evidence for assessing boundary options since it includes non-boundary change impacts but customers might find this a useful big picture.

1.3. The development of the EDCM has not been concluded and both CDCM¹¹ and EDCM figures shown in this document are therefore illustrative. Two extra Class B customers have been identified by DNOs since our last update on 25 June and these are included below. Project development is expected to be ongoing through the summer which will have an ongoing impact on associated illustrative end charges.

Class B consumers

1.4. Table A indicates the charging impacts of different charging boundary options on Class B by customers, including both demand and generation customers. The columns in blue illustrate the impact of purely a change the boundary based on RB, i.e. the difference between the CDCM charge and the EDCM charge. The columns in green illustrate the impact of raising the boundary on a combined basis, reflecting a change of charging boundary (from the EHV charging methodology/EDCM to the CDCM) as well as the introduction of the EDCM (e.g. from the current EHV charging methodology to the revised one, i.e. the EDCM).

1.5. The combined impact is equal to the difference between the current EHV charge and the illustrative CDCM charge. The combined impact is not directly relevant to the assessment of charging boundary options since it includes non-boundary change impact but customers might find it useful to be able to understand the combined impact as the assessment of the charging boundary options and the development of the EDCM are taking place in parallel. The columns in red illustrate the impact of the introduction of the EDCM even if the boundary is not changed.

¹⁰ We updated our impact assessment figures on 25 June following DNO updates to the impacts.

¹¹ CDCM prices are affected by changes to the level of EHV charges since overall allowed revenue has to be recovered overall, meaning the methodologies are linked.

Table A - Illustrative charging impacts on Class B customers under different distribution charging boundary options¹

Customer ID	DNO	Customer Class	Demand/ Generation	Illustrative 2010/11 DUoS charges (£'000/year)			Impact of moving from current charge to the CDCM (option RB)		Impact of moving from current charge to the EDCM (options NC)		Impact of moving from EDCM to CDCM (option RB)	
				Under current arrangements	Under the CDCM ^{2,3}	Under the EDCM ⁴	Absolute change in annual charge (£'000/year)	% change in annual charge	Absolute change in annual charge (£'000/year)	% change in annual charge	Absolute change in annual charge (£'000/year)	% change in annual charge
				(1)	(2)	(3)	(2)-(1)	[(2)-(1)]/(1)	(3)-(1)	[(3)-(1)]/(1)	(3)-(2)	[(2)-(3)]/(3)
1	EDF EPN	B1	Demand	349	1,663	513	1,314	+376%	164	+47%	1,150	+224%
2	CE NEDL	B1	Demand	132	1,055	380	922	+696%	248	+187%	675	+178%
3	WPD WALES	B1	Demand	919	1,739	923	820	+89%	4	+0%	816	+88%
4	CE NEDL	B1	Demand	646	1,447	391	801	+124%	-255	-39%	1,056	+270%
5	WPD WALES	B1	Demand	1,377	2,108	1,400	731	+53%	23	+2%	707	+51%
6	ENW	B1	Demand	224	750	163	527	+235%	-61	-27%	588	+361%
7	EDF EPN	B1	Demand	93	503	197	410	+443%	104	+113%	306	+155%
8	CE NEDL	B1	Demand	88	460	111	372	+421%	23	+26%	349	+313%
9	WPD WALES	B1	Demand	159	489	286	331	+209%	128	+80%	203	+71%
10	WPD WEST	B2	Demand	147	476	202	330	+224%	55	+37%	275	+136%
11	WPD WEST	B2	Demand	247	552	307	305	+123%	60	+24%	245	+80%
12	EDF EPN	B2	Demand	80	378	140	298	+370%	59	+74%	238	+170%
13	SP DIST	B2	Demand	174	470	245	296	+170%	71	+41%	225	+92%
14	CE NEDL	B1	Demand	129	417	155	288	+223%	26	+20%	262	+169%
15	CN West	B1	Demand	108	390	167	282	+261%	59	+55%	223	+133%
16	SEPD	B3	Demand	273	528	132	254	+93%	-141	-52%	395	+299%
17	WPD WALES	B1	Demand	119	371	169	252	+212%	50	+42%	202	+120%
18	CE NEDL	B1	Demand	663	894	333	231	+35%	-331	-50%	562	+169%
19	SP DIST	B2	Demand	436	653	315	217	+50%	-121	-28%	338	+107%
20	SEPD	B2	Demand	317	512	428	195	+62%	111	+35%	84	+20%
21	WPD WALES	B1	Demand	123	308	193	185	+150%	70	+56%	115	+60%
22	SEPD	B3	Demand	331	504	98	173	+52%	-233	-70%	406	+416%
23	WPD WALES	B1	Demand	108	274	204	166	+154%	96	+89%	70	+35%
24	SEPD	B1	Demand	397	562	140	165	+41%	-258	-65%	422	+302%
25	SEPD	B2	Demand	656	796	331	140	+21%	-325	-50%	464	+140%
26	WPD WEST	B2	Demand	53	189	77	136	+258%	24	+46%	112	+146%
27	WPD WEST	B2	Demand	35	165	124	131	+377%	89	+258%	41	+33%
28	WPD WEST	B3	Demand	57	183	75	126	+223%	18	+32%	108	+145%
29	SP DIST	B2	Demand	460	586	270	126	+27%	-191	-41%	317	+117%
30	CE NEDL	B2	Demand	81	205	125	123	+152%	43	+53%	80	+64%
31	EDF LPN	B2	Demand	300	408	318	109	+36%	18	+6%	91	+28%
32	WPD WALES	B1	Demand	51	159	116	108	+214%	66	+130%	43	+37%
33	SEPD	B2	Demand	354	459	123	104	+29%	-232	-65%	336	+273%
34	SP MANWEB	B2	Demand	40	122	38	82	+203%	-2	-6%	84	+222%
35	CE NEDL	B1	Demand	59	141	71	81	+138%	11	+19%	70	+99%
36	SP MANWEB	B2	Demand	140	220	98	81	+58%	-41	-30%	122	+125%
37	WPD WALES	B1	Demand	399	454	488	55	+14%	88	+22%	-33	-7%
38	SP MANWEB	B2	Demand	178	223	223	45	+26%	45	+25%	1	+0%
39	WPD WEST	B2	Demand	5	46	51	41	+807%	46	+905%	-5	-10%
40	SEPD	B2	Demand	527	561	310	34	+7%	-217	-41%	252	+81%

Decision on the charging boundary between the EDCM and CDCM

July 2010

41	WPD WALES	B1	Demand	40	70	382	29	+73%	341	+851%	-312	-82%
42	WPD WEST	B2	Demand	9	37	32	28	+318%	23	+257%	5	+17%
43	WPD WALES	B1	Demand	16	41	48	25	+161%	33	+209%	-8	-16%
44	EDF LPN	B1	Demand	6	30	34	24	+435%	28	+501%	-4	-11%
45	EDF LPN	B1	Demand	17	28	24	11	+63%	6	+36%	5	+20%
46	CE NEDL	B1	Demand	3	11	4	8	+318%	1	+40%	7	+199%
47	CE NEDL	B1	Demand	21	29	22	8	+38%	0	+2%	8	+36%
48	ENW	B1	Demand	34	41	30	7	+22%	-4	-12%	11	+38%
49	ENW	B1	Demand	5	10	8	4	+86%	3	+55%	2	+20%
50	EDF LPN	B2	Demand	17	22	31	4	+25%	13	+77%	-9	-29%
51	SEPD	B1	Demand	468	471	669	3	+1%	201	+43%	-198	-30%
52	ENW	B1	Demand	5	6	3	1	+21%	-3	-52%	4	+152%
53	ENW	B1	Demand	189	190	66	1	+0%	-123	-65%	124	+188%
54	WPD WALES	B1	Demand	1	2	128	0	+6%	127	+8538%	-127	-99%
55	EDF SPN	B1	Demand	3	2	9	-1	-30%	6	+209%	-7	-77%
56	EDF LPN	B1	Demand	23	18	20	-6	-25%	-4	-16%	-2	-10%
57	SEPD	B1	Demand	50	44	19	-6	-12%	-30	-61%	25	+129%
58	EDF SPN	B1	Demand	40	30	20	-10	-24%	-20	-50%	10	+52%
59	ENW	B1	Demand	34	19	10	-15	-43%	-24	-71%	9	+94%
60	CE NEDL	B1	Demand	21	6	11	-15	-71%	-10	-47%	-5	-45%
61	SEPD	B2	Demand	243	223	150	-20	-8%	-93	-38%	74	+49%
62	SEPD	B1	Demand	215	169	181	-46	-21%	-34	-16%	-11	-6%
63	EDF LPN	B1	Demand	78	30	36	-48	-62%	-42	-54%	-6	-16%
64	SEPD	B1	Demand	95	41	89	-54	-57%	-6	-6%	-48	-54%
65	EDF LPN	B1	Demand	189	117	91	-71	-38%	-97	-52%	26	+28%
66	SEPD	B1	Demand	199	120	158	-78	-39%	-41	-20%	-38	-24%
67	SEPD	B1	Demand	397	284	344	-114	-29%	-54	-14%	-60	-17%
68	EDF SPN	B2	Demand	671	454	280	-217	-32%	-391	-58%	174	+62%
69	ENW	B1	Demand	254	NA	82	NA	NA	-171	-68%	NA	NA
70	WPD WALES	B1	Generation	0	0	0						
71	WPD WALES	B1	Generation	0	0	0						
72	WPD WALES	B2	Generation	0	-1	23						
73	WPD WEST	B2	Generation	0	0	0						
74	WPD WEST	B2	Generation	0	0	0						
75	WPD WEST	B2	Generation	0	0	-1						
76	WPD WEST	B2	Generation	0	0	-6						
77	WPD WEST	B2	Generation	0	0	0						
78	WPD WEST	B3	Generation	0	0	0						
79	CE NEDL	B1	Generation	0	-3	-0						
80	EDF LPN	B1	Generation	0	-1,159	-223						
81	EDF SPN	B1	Generation	0	-47	0						

- Notes:
- 1 For generation customers only illustrative charges are demonstrated.
 - 2 CDCM charges will be impacted by a migration of B customers from site-specific arrangements into the CDCM. The impact depends, among other things, on the number of migrating customers.
 - 3 B1 customers do not currently have a dedicated tariff in the CDCM. Their charge is calculated on the assumption that they would fall under an existing HV network tariff in the CDCM.
 - 4 The EDCM is still in development. Final charges may substantially differ from the above.
 - 5 The charges were derived under the assumption that all B customers are in the EDCM (14C option). The figures will change under the assumption that all B customers are in the CDCM (LB option). In most cases, the change does not appear significant.

Table B - Summary of illustrative charging impact on Class B demand customers of RB on a combined basis

From current EHV charges to CDCM	(£'000 or %)			Number of cases of increase by threshold					
	Smallest	Average	Largest	>£1m	£500k-1m	£250-500k	£100-250k	£0-100k	<£0
- Absolute change	-£217	£159	£1,314	1	5	11	16	21	14
- % change	- 71%	+125%	+807%	>10 times 0	5-10 times 2	3-5 times 8	1-3 times 18	0-1 times 26	=<0 times 14

Note: Changes are equal to current EHV charges minus the equivalent illustrative CDCM charges.

Table C - Summary of illustrative charging impact on Class B demand customers of LB on a combined basis

From current EHV charges to EDCM	(£'000 or %)			Number of cases of increase by threshold					
	Smallest	Average	Largest	>£1m	£500k-1m	£250-500k	£100-250k	£0-100k	<£0
- Absolute change	-£391	-£12	£341	0	0	1	7	31	29
- % change	- 71%	+177%	+8538%	>10 times 1	5-10 times 3	3-5 times 0	1-3 times 7	0-1 times 28	=<0 times 29

Note: Changes are equal to current EHV charges minus the equivalent illustrative EDCM charges.

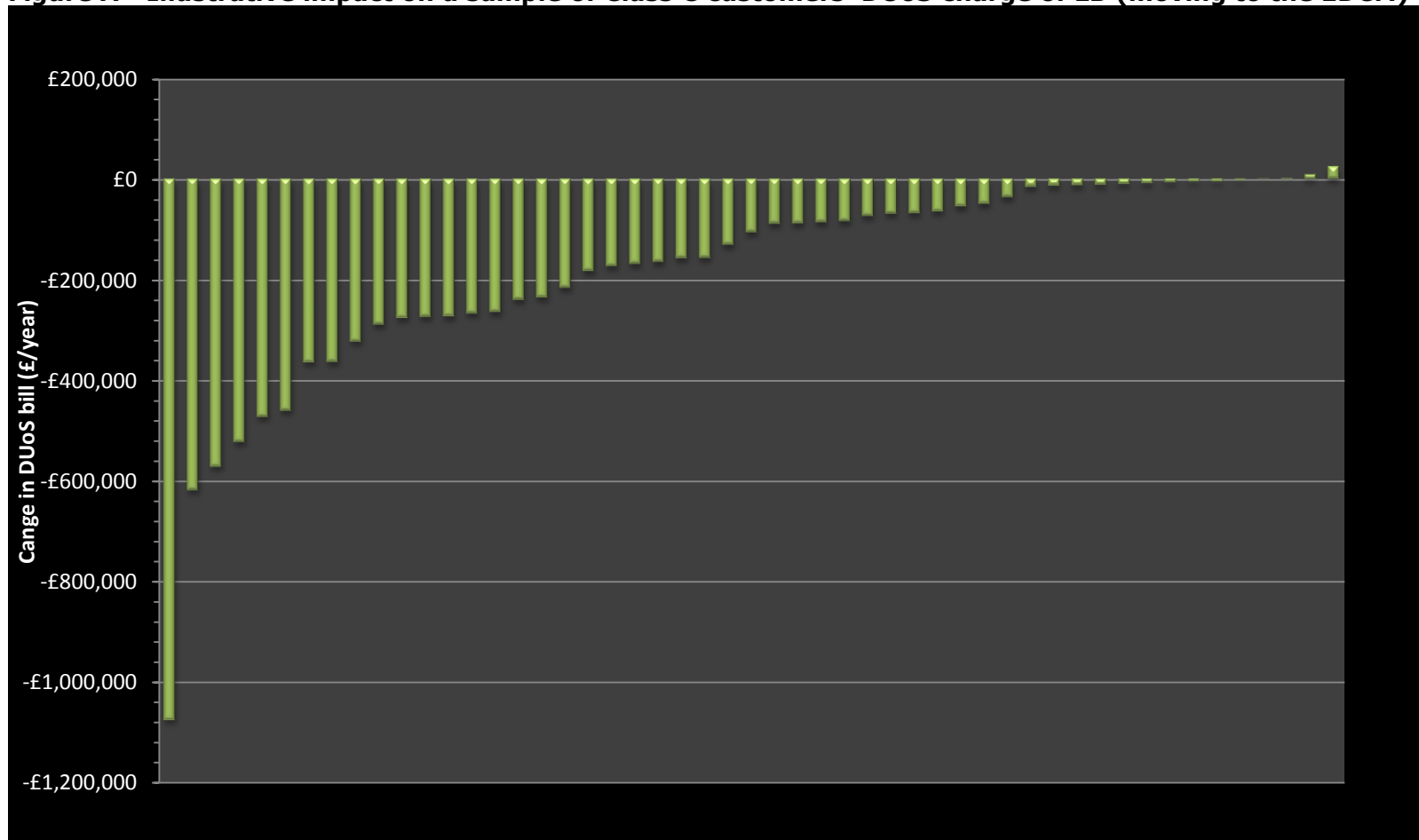
Class C consumers

Table D - Illustrative impact of a change in boundary on a sample of Class C

Customer ID	Customer Class	Illustrative 2010/11 DUoS charges (£/year)		Impact of moving from current charge to the CDCM (option RB)	
		Under current arrangements (CDCM) (1)	Under the EDCM (LRIC/FCP) ¹ (2)	Absolute change in annual charge (£/year) (2)-(1)	% change in annual charge [(2)-(1)]/(1)
1	C1	108,042	133,119	25,078	23.2%
2	C2	7,055	15,324	8,269	117.2%
3	C2	278	1,203	925	332.7%
4	C2	1,517	1,950	433	28.5%
5	C2	13,162	10,214	-2,948	-22.4%
6	C2	34,698	29,883	-4,816	-13.9%
7	C2	7,273	2,023	-5,250	-72.2%
8	C2	8,150	1,265	-6,885	-84.5%
9	C1	12,139	3,672	-8,467	-69.7%
10	C2	12,889	2,705	-10,184	-79.0%
11	C2	18,605	6,709	-11,897	-63.9%
12	C2	18,478	5,414	-13,064	-70.7%
13	C2	15,818	1,928	-13,890	-87.8%
14	C2	25,634	9,402	-16,232	-63.3%
15	C2	85,679	48,893	-36,786	-42.9%
16	C2	56,819	6,782	-50,037	-88.1%
17	C2	145,814	90,854	-54,960	-37.7%
18	C2	130,796	65,987	-64,810	-49.6%
19	C2	128,465	59,802	-68,663	-53.4%
20	C2	184,814	115,120	-69,694	-37.7%
21	C2	84,041	10,066	-73,975	-88.0%
22	C1	142,977	58,688	-84,289	-59.0%
23	C2	236,054	149,685	-86,369	-36.6%
24	C2	148,377	59,835	-88,542	-59.7%
25	C2	107,915	18,367	-89,548	-83.0%
26	C2	178,087	71,891	-106,196	-59.6%
27	C2	205,207	73,961	-131,246	-64.0%
28	C2	177,988	20,539	-157,449	-88.5%
29	C2	178,582	20,541	-158,041	-88.5%
30	C2	236,053	70,771	-165,282	-70.0%
31	C2	227,368	57,951	-169,417	-74.5%
32	C2	404,928	231,216	-173,712	-42.9%
33	C2	203,196	19,742	-183,454	-90.3%
34	C2	313,462	96,830	-216,632	-69.1%
35	C2	307,757	71,704	-236,053	-76.7%
36	C2	287,586	47,134	-240,452	-83.6%
37	C2	491,354	226,495	-264,859	-53.9%
38	C2	448,074	180,597	-267,477	-59.7%
39	C2	301,855	28,404	-273,451	-90.6%
40	C2	445,579	171,137	-274,442	-61.6%
41	C2	408,057	131,686	-276,371	-67.7%
42	C1	403,341	113,522	-289,819	-71.9%
43	C2	355,199	31,870	-323,329	-91.0%
44	C2	448,380	84,502	-363,878	-81.2%
45	C1	488,961	124,128	-364,833	-74.6%
46	C2	617,362	156,944	-460,418	-74.6%
47	C2	536,343	63,619	-472,724	-88.1%
48	C2	573,597	50,630	-522,967	-91.2%
49	C2	918,773	347,072	-571,701	-62.2%
50	C1	819,082	200,724	-618,358	-75.5%
51	C2	1,176,003	101,396	-1,074,606	-91.4%

Notes: 1 The EDCM is still in development and final charges may be substantially different from the above.

Figure A - Illustrative impact on a sample of Class C customers' DUoS charge of LB (moving to the EDCM)



Appendix 3 - The Authority's Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority ('the Authority'), the regulator of the gas and electricity industries in Great Britain. This appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute (such as the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Acts of 2004, 2008 and 2010) as well as arising from directly effective European Community legislation.

1.3. References to the Gas Act and the Electricity Act in this appendix are to Part 1 of those Acts¹². Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This appendix must be read accordingly¹³.

1.4. The Authority's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them.

1.5. The Authority is generally required to carry out its functions in the manner it considers is best calculated to further the principal objective, wherever appropriate by promoting effective competition between persons engaged in, or commercial activities connected with,

- the shipping, transportation or supply of gas conveyed through pipes;
- the generation, transmission, distribution or supply of electricity;
- the provision or use of electricity interconnectors.

1.6. Before deciding to carry out its functions in a particular manner with a view to promoting competition, the Authority will have to consider the extent to which the interests of consumers would be protected by that manner of carrying out those functions and whether there is any other manner (whether or not it would promote competition) in which the Authority could carry out those functions which would better protect those interests.

¹² Entitled 'Gas Supply' and 'Electricity Supply' respectively.

¹³ However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

1.7. In performing these duties, the Authority must have regard to:

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them¹⁴; and
- the need to contribute to the achievement of sustainable development.

1.8. In performing these duties, the Authority must have regard to the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas¹⁵.

1.9. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

- promote efficiency and economy on the part of those licensed¹⁶ under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply,
- and shall, in carrying out those functions, have regard to the effect on the environment.

1.10. In carrying out these functions the Authority must also have regard to:

- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.11. The Authority may, in carrying out a function under the Gas Act and the Electricity Act, have regard to any interests of consumers in relation to communications services and electronic communications apparatus or to water or

¹⁴ Under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Acts in the case of Electricity Act functions.

¹⁵ The Authority may have regard to other descriptions of consumers.

¹⁶ Or persons authorised by exemptions to carry on any activity.

sewerage services (within the meaning of the Water Industry Act 1991), which are affected by the carrying out of that function.

1.12. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation¹⁷ and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

¹⁷ Council Regulation (EC) 1/2003.

Appendix 4 - Glossary

A

Authority

The Authority is the governing body for Ofgem, consisting of non-executive and executive members.

C

CDCM – Common Distribution Charging Methodology

The CDCM is the name given to the common methodology for HV/LV charging which was developed by the DNOs under standard licence condition 50 and was implemented from 1 April 2010.

D

DCMF – Distribution Charging Methodologies Forum

The DCMF is an industry group run by the ENA that discusses charging developments on the electricity distribution networks. See

<http://energynetworks.squarespace.com/distribution-charging-methodol/>.

DCUSA – Distribution Connection and Use of System Agreement

The DCUSA is an industry code which governs connection and use of system arrangements between DNOs, suppliers and some generators on the distribution networks.

DG - Distributed Generation

Generation which is connected directly into the local distribution network as opposed to the transmission network, as well as combined heat and power schemes of any scale. The electricity generated by such schemes is typically used in the local system rather than being transmitted for use across the UK.

DNOs - Distribution Network Operators

A licensed distributor which operates electricity distribution networks in its designated distribution service areas.

DPCR - Distribution Price Control Review

DNOs operate under a price control regime, which are intended to ensure DNOs can, through efficient operation, earn a fair return after capital and operating costs while limiting costs passed onto customers. Each price control typically lasts five years at a time. DPCR5 is the current price control which commenced 1 April 2010.

E

EDCM – Extra High Voltage Distribution Charging Methodology

The EDCM is the collective name given to each of the two common methodologies for EHV charging to be developed and submitted by the DNOs on or before 1 September 2010 for approval by the Authority under standard licence condition 50A.

Electricity Act 1989

Electricity Act 1989 c.29 as amended. Also referred to as 'The Act'.

EHV - Extra High Voltage

Term used to describe the parts of distribution networks that are extra high voltage typically consisting of a voltage level of 22kV or more.

EHV Premises

Since 1990, in previous price controls EHV premises tended to be defined for the purpose of accounting for units of consumption at each voltage level as:

- *"(a) in relation to premises connected to the licensee's distribution system as at the date this licence enters into force, those premises specified in the list of EHV premises notified in writing to the Authority by the licensee within twenty-eight days after this licence enters into force; and*
- *(b) in relation to premises connected to the licensee's distribution system which are either first connected or (having been previously connected) have had their connections materially altered following the date this licence enters into force, means premises connected to the licensee's distribution system as a voltage at or higher than 22 kilovolts or at a sub-station with a primary voltage of 66 kilovolts or above."*

ENA - Energy Networks Association

The ENA is a trade association for UK energy transmission and distribution licence holders and operators. Its working groups are developing the charging methodologies. See <http://2010.energynetworks.org/>.

H

HV/LV – High/Low Voltage

Term used to describe the parts of the distribution networks typically at a voltage level of less than 22kV.

I

IDNOs - Independent Distribution Network Operators

A licensed distributor which does not have a distribution services area and competes to operate electricity distribution networks anywhere within the UK.

L

Line Loss Factor

Line Loss Factors are used to apportion the losses within the distribution system between customers according to their energy usage. This scaled volume is then used in settlement so that the customer's energy charges from their supplier reflect their energy usage including losses.

S

SLC - Standard Licence Condition

These are conditions that licensees must comply with as part of their licences. SLCs can only be modified in accordance with Section 11A of the Electricity Act. Failure to comply with SLCs can result in financial penalties and/or enforcement orders to ensure compliance.

U

UoS Charges

Use of System Charges: charges paid by generators and suppliers for the use of the distribution network.

Appendix 5 - Feedback Questionnaire

1.1. Ofgem considers that consultation is at the heart of good policy development. We are keen to consider any comments or complaints about the manner in which this consultation has been conducted. In any case we would be keen to get your answers to the following questions:

1. Do you have any comments about the overall process, which was adopted for this consultation?
2. Do you have any comments about the overall tone and content of the report?
3. Was the report easy to read and understand, could it have been better written?
4. To what extent did the report's conclusions provide a balanced view?
5. To what extent did the report make reasoned recommendations for improvement?
6. Please add any further comments?

1.2. Please send your comments to:

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