

Distribution use of system charging: way forward on higher voltage generation charging

Consultation

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Overview:

This consultation outlines a series of proposals for how the method for charging generators (export charges) for use of system (UoS) under the distribution network operators' (DNO) proposed Extra High Voltage Distribution Charging Methodology (EDCM) might be modified. We are considering potential modifications to the method in light of our decision to allow a time-limited exemption from UoS charges for generators that connected pre-2005 as well as in response to the feedback we received from generators and others to our EDCM consultation of May 2011.

We set out five possible amendments to the DNOs' proposed EDCM that consider specific aspects of the methodology, including how the total recovery from generators is calculated. The options also look at whether it is appropriate to have a specific charge that reflects the estimated future costs of generation-led reinforcement at a generator's site, or if other locational signals within the proposed EDCM can more appropriately encourage the efficient use of the distribution networks. We also set out the way forward on further developing, consulting and ultimately making a decision on whether to approve the EDCM as it applies to generators.


Context

Delivery of the electricity distribution structure of charges project is a priority for Ofgem, as we consider it will drive considerable improvements for consumers and other users of the distribution networks. Given the level of future investment required on the distribution networks, and the challenges the network will face with the move to a low carbon economy, we think it is important to ensure common, cost reflective charging arrangements are put in place, which can be adapted over time to reflect network developments.

Such arrangements were introduced for customers at the lower voltages on 1 April 2010 when the Common Distribution Charging Methodology commenced and will change for demand (import) customers at the higher voltages on 1 April 2012 when the Extra High Voltage Distribution Charging Methodology (EDCM) is implemented. Following this consultation, should we approve an EDCM for the calculation of generator charges, we anticipate that it would apply from 1 April 2013. In parallel with this work, we are also working to resolve the issue of the charging of generators that connected pre-2005, with the ultimate goal of ensuring that all generators are subject to the same, common use of system charging methodology.

Associated documents

- Delivering the electricity distribution structure of charges project: decision on extra high voltage charging and governance arrangements, 31 July 2009 (Reference number:90/09)
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=487&refer=Networks/ElecDist/Policy/DistChrgs>
- Decision on revised submission and implementation dates for the EHV Distribution Charging Methodology (EDCM) - (Reference number: 120/10), 22 September 2010
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=651&refer=Networks/ElecDist/Policy/DistChrgs>
- EHV Distribution Charging Methodology (EDCM) report, 13 April 2011
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=679&refer=Networks/ElecDist/Policy/DistChrgs>
- Electricity distribution charging methodologies: distribution network operators' (DNOs') proposals for the higher voltages - (Reference number: 67/11), 20 May 2011
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=687&refer=Networks/ElecDist/Policy/DistChrgs>



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- Use of system charges for distributed generators (DG) – update on current thinking, 11 August 2011
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=759&refer=Networks/ElecDist/Policy/DistChrgs>
- Electricity distribution charging: decision on the methodology for higher voltage import charges - (Reference number: 116/11), 6 September 2011,
<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=760&refer=Networks/ElecDist/Policy/DistChrgs>
- Distribution use of system charging: a time-limited exemption for pre-2005 generators – (Reference number: 135/11), 21 October 2011
<http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Pages/DistChrgs.aspx>

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Executive Summary

Purpose of the methodology

The electricity distribution structure of charges project is an important contribution to our objective of protecting the interests of current and future network users. A Common Distribution Charging Methodology (CDCM) has been in place since 1 April 2010 for customers at lower voltages, and the Extra High Voltage Distribution Charging Methodology for demand (import) customers at the higher voltages will start on 1 April 2012. The EDCM for generators (export) at higher voltages is the final element of the structure of charges project.

With an estimated £2.2 billion in network reinforcement costs (of which £1.6 billion is at the extra high voltages) required between 2010 and 2015 and developments such as the increasing prevalence of distributed generation, we want to ensure that users of the networks are encouraged to make the most efficient use of the existing infrastructure and limit the amount of new investment that customers have to pay for. We also aim to ensure that the cost of maintaining the networks and of funding new investment is allocated fairly across different customers. We are keen for charges to reflect benefits that users might provide to the network, such as generators that defer network reinforcement.

Deferral of decision on EDCM generation charging and reassessment

We approved the EDCM for demand (import) customers on 6 September 2011, with charges to commence on 1 April 2012. In our decision we stated that we were deferring our decision on the EDCM for generation (export) charges, particularly to provide greater clarity around the arrangements for distributed generators (DG) who connected on pre-2005 terms and who do not currently pay use of system charges.

We think that there is merit in reassessing generation charging under the EDCM in light of our decision to introduce a time-limited exemption for pre-2005 DG from use of system charges and in response to the feedback we received through our EDCM consultation. This feedback particularly concerned the perceived predictability and volatility of charges as well as how the charges were calculated.

Options for EDCM generation charging

In this consultation, we set out five possible amendments to the proposed EDCM for addressing both the impact of the time-limited exemption and the feedback from our EDCM consultation. These look at whether the split of costs to be recovered from generation and revenue is appropriate, and ways in which it could be modified. We also assess whether the methodology as it stands provides the most appropriate locational signals to generators while balancing concerns around volatility and predictability of charges. We also assess whether the methodology should be reconsidered more fundamentally.

We note the significant amount of time and effort that has been spent developing the EDCM, including the way it calculates generation charges. We consider it desirable to both consider the EDCM in light of the impact of a time-limited exemption as well as revisit a number of discrete elements of the methodology. However, we do not believe it is necessary to fundamentally reconsider the method for charging generators and note that doing so would make it challenging to implement charges from 1 April 2013.

Implementation and next steps

We think that, subject to our approval of a potentially revised EDCM for generation charging, charges for generators under the EDCM could be implemented from 1 April 2013. We are particularly keen to ensure that generators are given sufficient notice of changes in charges. Accordingly, we set out a proposed way forward for seeking feedback on the proposals in this consultation and further developing the methodology. We propose that a revised submission, including customer impacts be submitted to us by April-May 2012, in advance of issuing a consultation and making a decision on EDCM charges for generators around August-September 2012.

1. Deferral of decision on EDCM generation charging

Deferral of decision

1.1. We approved the Extra High Voltage (EHV) Distribution Charging Methodology (EDCM) for import (ie demand) charges on 6 September 2011. In our decision document, we stated that we were deferring our decision on the EDCM for generator (ie export) charges.¹

1.2. We do not consider it appropriate to make a decision on the methodology for generators until we know which generators will be exempt, determine the resultant impact on the remaining generators' charges and undertake further assessment of whether the methodology is fit for purpose. We said in our decision document that should we approve the EDCM for export charges, the resulting charges would apply from 1 April 2013 (or possibly later).

Reassessment of EDCM charges for generation

1.3. As part of deferring our decision on the EDCM, we are also reconsidering the most appropriate way of charging generators under the EDCM. There are two major reasons for this.

1.4. Preliminary analysis indicates that there is an impact on the EDCM charges of non-exempt generators (ie post-2005 and pre-2005 generators without an exemption) from the removal of exempt generators from the charging methodology. We think it is necessary to consider whether the calculation of EDCM charges for generators continue to meet the Relevant Objectives² in light of this, or if changes need to be made by the distribution network operators (DNOs) to ensure that they do.

1.5. The second reason for reconsidering the most appropriate arrangements is based on the strong response from stakeholders that we received in response to our EDCM consultation.³ There were a number of concerns expressed by generators, particularly about the volatility and predictability of charges. We think it is worth

¹ Electricity distribution charging: decision on the methodology for higher voltage import charges - (Reference number: 116/11), 6 September 2011, page 10, <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=760&refer=Networks/ElecDist/Policy/DistChrgs>

² As set out in standard licence condition (SLC) 50A.7-10.

³ Electricity distribution charging methodologies: distribution network operators' (DNOs') proposals for the higher voltages - (Reference number: 67/11), 20 May 2011, <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=687&refer=Networks/ElecDist/Policy/DistChrgs>

exploring possible alternatives in consultation with stakeholders that may help to address issues such as these.

How a time-limited exemption would affect non-exempted generators under the EDCM

1.6. Under the EDCM submitted by the DNOs on 1 April 2011⁴, charges for generators have three main components:

- a fixed charge in respect of their sole use assets (£/MPAN⁵)
- a credit for units they export (£/kWh) during super red⁶ (where eligible)
- a capacity charge (£/kVA) based on:
 - modelled generation-led reinforcement costs (locational charge)⁷
 - a fixed adder that scales the capacity charge upwards (or downwards) to ensure that total capacity charges equals the DG revenue target.⁸

1.7. Under the proposed EDCM, an exemption would affect the fixed adder element of non-exempted generators' charges, because it would change the composition of the generation revenue target. It would not directly impact the fixed charge, nor would it affect the credits or locational charge as these two elements are modelled based on the network as it exists, without reference to the charges individual customers are paying (or not paying).

1.8. The practical effect of removing pre-2005 generators from the EDCM is that the DG revenue target is reduced by £1 for each kilowatt of pre-2005 DG capacity removed. The reduced revenue target would be shared amongst the remaining generators.

1.9. Our analysis indicates that the direct impact from removing all pre-2005 generators from the EDCM results in an increase in total recovery from post-2005 DG of 58.1 per cent. Total recovery includes the total of all EDCM post-2005 DGs' fixed charges, capacity charges and credits.

⁴ EHV Distribution Charging Methodology (EDCM), 1 April 2011, <http://2010.energy-networks.org/edcm-file-storage/7-edcm-deliverables/1-edcm-submission-1st-april-2011/>

⁵ Meter Point Administration Number

⁶ The super-red time band is a period when the network is highly loaded and when the annual simultaneous maximum demand is likely to occur. We set these out in Table 4.4 on page 63 of our EDCM consultation (see footnote 3 for link).

⁷ The reinforcement charge, also known as the locational charge, or Charge 2 reflects the estimated cost of reinforcement incurred or brought forward as a result of the generation on that part of the network. This is calculated using either the Forward Cost Planning (FCP) or Long Run Incremental Cost (LRIC) method.

⁸ This comprises EDCM generators' share (based on total EDCM DG capacity a proportion of total DG capacity) of the sum of actual DG incentive revenue and a notional £1/kW for pre-2005 generators. The equation can be found on page 75 of the DNO's EDCM submission.

1.10. However, our analysis also indicates that the total recovery from post-2005 EDCM generators would increase by 6.5 per cent against total recovery from post-2005 EDCM generators under the existing DNO methodologies. Under the EDCM proposed by the DNOs where all DG were charged, total recovery from post-2005 EDCM generators would have reduced by 32.6 per cent.

1.11. The effects differ between DNOs, as well as on an individual basis. It should also be noted that the effects described above are based on removing *all* pre-2005 generators, whereas the effects of a time limited exemption would likely only apply to a majority, rather than all pre-2005 generators. Further information on the impact can be found under Option 1 in Chapter 2.

Consultation responses

Predictability of charges and ability to respond to signals

1.12. We received a strong response from generators to our EDCM consultation. One of their most significant concerns was around the predictability of charges. Some argued that this perceived unpredictability could undermine investor confidence and even require generators to pay a premium when financing their projects. The concerns around predictability were related to the perceived potential for charges to be volatile, the perceived complexity of the methodology, and lack of transparency.

1.13. Charges were seen as volatile partly because the actions of other generation and demand customers could affect the charge of the generator, even if its own behaviour had not changed. They argued that they found the calculation of generator charges complex and difficult to understand. Some felt this was compounded by the fact that because of data confidentiality requirements, they do not have access to working models which could enable them to calculate the charges themselves.

1.14. Related to this was the perceived difficulty of generators to respond to the price signals the EDCM is designed to provide. This was in part due to a belief they would be unable to reliably predict those signals (ie costs) over time and therefore may be unable to make an investment decision on this basis. It was also because some, such as wind, did not have the ability to respond, eg by shifting their period of export. Some argued that price signals were most relevant at the time of connection, rather than once they had invested.

Calculation of charges and impact on other arrangements

1.15. Some generators commented on the specific method that calculated the charges. Some thought that there should only be one, rather than two methodologies (ie Long Run Incremental Cost (LRIC) and Forward Cost Pricing

(FCP))⁹ for calculating the locational charges. A few did not believe that these two methodologies were appropriately reflective of costs or calculated in the correct manner, due to the impact another generators' charges could have on their own, as well as due to the underlying assumptions of LRIC and FCP in calculating the locational charge.

1.16. Specific concerns about the assumptions of LRIC and FCP that have been raised during the consultation process include whether these are appropriate, particularly in cases where there is low or no prospect of growth or connection of DG in a particular area. In LRIC this refers to the one per cent assumption of DG growth across all areas. In FCP this refers to the use of a 'test sized generator' (and the size of that generator) to determine the amount of reinforcement that will be required in that area.

1.17. Responses on the scaling of charges to a revenue target were mixed. The majority thought that the approach used to scale charges to a revenue target was appropriate. However a couple of respondents thought that this undermined the cost reflectivity of charges, and the locational signals associated with the charge.

1.18. Some respondents also expressed a desire that distribution charging arrangements should be more consistent with those of the transmission network.

Issues raised by responses that we address elsewhere

1.19. We also note that a number of respondents reiterated their belief that pre-2005 generators should not be charged for use of system or should receive what they consider to be adequate compensation. This is dealt with in the consultation that has been released alongside this one, titled *Distribution use of system charging: a time-limited exemption for pre-2005 generators*.¹⁰

1.20. Comments on the implementation timeframe and impact of changes in charges are discussed in Chapter 3. We will also consider the responses to the specific questions we raised on generation charging as part of the forthcoming work on the EDCM for generation charges.

⁹ Long Run Incremental Cost (LRIC) and Forward Cost Planning (FCP) methods.

¹⁰ Available at <http://www.ofgem.gov.uk/Networks/ElecDist/Policy/DistChrgs/Pages/DistChrgs.aspx>

2. Options for EDCM generation charging

Chapter Summary

In this section, we set out some possible options for dealing with both the removal of exempted generators from the EDCM as well as addressing concerns raised by stakeholders in their responses to our EDCM consultation, such as volatility.

Question box

Option-specific

Question 2.1: Option 1 – Do you think that charges more or less appropriately reflect costs imposed by DG, following the removal of (some or all) pre-2005 DG?

Question 2.2: Option 2 – Do you think it is appropriate to include a generation-led reinforcement (locational) charge? What are the advantages and disadvantages of removing such a charge?

Question 2.3: Option 2 – This option may result in increased charges for generators currently in demand-dominated areas of the network, compared to those predicted under the EDCM. However, this could be matched by a decrease in potential volatility. What are your views on this potential trade off?

Question 2.4: Option 3 – Do you think that the EDCM should continue to calculate charges as if all generators continue to be charged? What is the reasoning behind your response?

Question 2.5: Option 4 – Is it appropriate for EDCM generators to recover their share (based on their capacity relative to CDCM) of the DG incentive revenue (ie 80 per cent of generation-led reinforcement costs plus £1/kW incentive revenue)? If not, how should this incentive revenue be recovered?

Question 2.6: Option 5 – Do you think it is better to revisit the methodology more fundamentally?

Question 2.7: Option 5 – What cost signals do you think generators have the ability to respond to?


General

Question 2.8: Do you have any other suggested modifications to the proposed methodology?

Question 2.9: Which of the options (if any, or including a combination) do you think would enable the EDCM for DG charging to fulfil the Relevant Objectives set out in the licence after the removal of exempt generators? Why?

Question 2.10: What is the most appropriate way of redistributing the unrecovered revenue from exempted generators to other users of the network?

2.1. In light of responses to our EDCM consultation and our decision to grant a time-exemption for pre-2005 DG, we present options in this chapter that suggest possible amendments to the proposals put forward by DNOs in their EDCM submitted to us on 1 April 2011. The options are not mutually exclusive and could in some circumstances be used together. There may also be other options that amend the existing methodology, that stakeholders may wish to bring forward for consideration.



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2.2. Note that we will consider as part of any approval of the EDCM for DG whether to apply conditions, for example those we discussed in our EDCM consultation.¹¹

Option 1 – Calculate charges as proposed in the DNOs’ EDCM

Proposal

2.3. This option would apply the EDCM as it was proposed by the DNOs. The consequence of a time-limited exemption would mean that exempted generators would be excluded in both the calculation of the generation revenue target and the scaling of charges to that target.

2.4. The generation revenue target proposed by the DNOs comprises the DG incentive revenue¹² plus £1/kW¹³ to represent the operations and maintenance (O&M) costs of pre-2005 generators. Under this option, £1/kW for O&M would be added only for the non-exempted pre-2005 EDCM generators.¹⁴ Charges would then be scaled to the revised generation revenue target.

2.5. The rationale behind this is that the generation revenue target should only include costs related to those paying use of system charges. It would not appropriately reflect costs to include O&M for generators not subject to use of system charges.

Impact

2.6. Total recovery from post-2005 generators (ie the sum of all post-2005 generators’ charges) under this option would be 58 per cent higher than in an EDCM where all generators (ie both pre- and post-2005) are charged. This suggests that in total across all DNO areas, the capacity charge of pre-2005 generators exceeded the £1/kW that they contributed to the calculation of the revenue target.

2.7. However, compared to current recovery under existing individual DNO methodologies, total recovery from post-2005 generators would increase by six per cent. Under the charges produced by the DNOs as part of their EDCM submission (ie on the assumption all generators would be charged), there would have been a decrease of 33 per cent in the total recovery from post-2005 generators.

¹¹ See Issues 8-12 and 17-21 of our EDCM Consultation available at: <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=687&refer=Networks/ElecDist/Policy/DistChrgs>

¹² The composition of the DG incentive revenue is shown on page 20.

¹³ In 2007-08 value.

¹⁴ On the assumption that all EDCM generators will not take the exemption. We are currently consulting on if and how generators eligible for a time-limited exemption may choose to be exempt or subject to use of system charges.

2.8. Note that this analysis is on the basis that all pre-2005 generators receive an exemption. We would expect that following any decision on the length of the exemption, updated estimates would be prepared by the DNOs to show the indicative effect once it has been determined which generators will receive an exemption. All other things being equal, we expect that this would reduce the differential between the 1 April 2011 EDCM post-2005 DG total recovery and the total recovery from post-2005 DG under a time-limited exemption, due to the re-inclusion of some generators.

2.9. It is important to note that individual generators could see quite different effects to that described. The impact on total recovery from post-2005 generators also differs between DNO areas, as shown in the table below.

Table 2.1 – Impact of removal of pre-2005 generators on total recovery from post-2005 generators (figures are indicative, in £ and for 2011-12)

	Revenue under current charging methodologies	Revenue under DNOs' 1 April 2011 EDCM submission	Revenue under EDCM when pre-2005 EDCM DG excluded
CE NEDL	184,464	17,873	107,230
CE YEDL	312,754	452,956	381,824
ENWL	862,171	265,480	601,650
SP Distribution	1,193,996	829,761	1,435,213
SP Manweb	415,708	86,756	501,915
SSE Hydro	101,351	709,033	906,832
SSE Southern	12,051	11,044	18,044
UKPN EPN	255,378	394,936	452,715
UKPN LPN	-	*	*
UKPN SPN	*	*	*
WPD S Wales	1,182,444	343,059	524,129
WPD S West	324,622	120,554	160,079
WPD W Mid	-	-	-
WPD E Mid	109,627	103,112	176,239
Total	4,954,566	3,337,408	5,274,909

Note: this preliminary analysis is based on amending the EDCM models DNOs had previously provided to us, to remove all pre-2005 EDCM DG. WPD W Mid does not currently have any post-2005 generators. The sole post-2005 generator in UKPN LPN does not have a charge against the current methodology. Their new indicative charges, along with the indicative charges of UKPN SPN post-2005 generators (asterisks) have not been shown for confidentiality reasons.

2.10. Removing a significant amount of generators from the EDCM may in some circumstances further increase the volatility of the charges for those remaining. As

the target is shared, the fewer the number of generators covered by the EDCM, the more those customers could be impacted by the connection and the disconnection of other generators.

2.11. Additionally, there may be some ongoing volatility in charges of non-exempted generators as the exemptions of pre-2005 generators expire and they start to be charged. While this could be a broadly downward trend, individual charges could go down or up, depending on the particular circumstances of the generators.

2.12. It should be noted that we set out an expectation on the DNOs as part of our EDCM decision on demand charging, to consider and consult on whether some input data might be smoothed or averaged to minimise volatility.¹⁵ If similar measures were undertaken that also reduced the volatility of generation locational charges, this could help to mitigate some of the concern around volatility that arise from the removal (and subsequent reintroduction) of exempted generators from the EDCM.

Analysis

2.13. It is clear from the above impact that, under the EDCM as it was proposed, and as a group, post-2005 generator charges are lower with pre-2005 generators inside the EDCM than if they are excluded. However, with no pre-2005 generators in, it could be argued that post-2005 generators' charges more appropriately reflect the costs they *as a group* impose on the network.¹⁶ This is because the target would now simply comprise the DG incentive revenue, which relates to connection of post-2005 generation.¹⁷

2.14. We note that this option would not address the criticism that was raised in the responses to the consultation. In particular, the volatility of charges, and the impact of other customers' behaviour on individual charges that arises from the locational element of the charge (reflecting the future costs of reinforcement).

¹⁵ Customer measure 3: to assess measures to reduce volatility. Our consultation is available at <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=760&refer=Networks/ElecDist/Policy/DistChrgs>

¹⁶ We note that on an individual basis, charges would continue to be calculated with reference to the future generation-led reinforcement cost determined for each generator, with scaling applied so that these charges as a group match the generation revenue target.

¹⁷ Option 4 below looks at the generation revenue target in more detail, including the way in which it reflects costs.

Table 2.1 – Assessment of Option 1

Advantages	Disadvantages
<ul style="list-style-type: none">• Minimal change required to the EDCM model• Charges may more appropriately reflect the costs imposed by post-2005 generators	<ul style="list-style-type: none">• Significant increase in total recovery from non-exempted generators compared to EDCM where all DG charged• Increase in volatility as less generators share the revenue target

Option 2 – Remove generation-led reinforcement charges

Proposal

2.15. This option would remove the locational element of the charge (Charge 2)¹⁸ that reflects the future costs of reinforcing the network assets used by the generator. The generation revenue target would instead be split wholly between the DNOs' non-exempted generation customers based on their capacity (£/kW). The sole use asset charge and credits for eligible generators would remain unchanged.

2.16. We think this is one way of addressing some of the criticisms of the methodology outlined above, as it would remove an element of the charge that may change materially year on year. It could be used in conjunction with any of the other options.

2.17. The approach to charging for assets deemed to be for the sole use of the generator would remain the same. That is, such assets would continue to attract direct operating costs and network rates, and they would continue not to be included in the calculation of the generation revenue target. Similarly, credits would continue to be paid to eligible non-exempt generators based on the negative of the demand locational charge, for units exported during the super red time band.

Impact

2.18. The impact on individual charges would depend primarily on whether the generator has a high or low locational charge. The former would be expected to see a reduction in charge while the latter would experience an increase. Any credits and sole use asset charge the generator has would not be affected. The total recovery from generators would be unchanged as a result of the removal of Charge 2 itself (whether the EDCM includes pre-2005 generators or not).

¹⁸ See page 17 of the DNO's EDCM submission of 1 April 2011, link is at footnote 4.

Analysis

Volatility

2.19. We think that this option could help mitigate potential volatility of charges,¹⁹ by removing the main element that is sensitive to the specific loading of the node or network group used by the generator.

2.20. This option could help reduce the impact on generators' charges that arises from a change in other network users' behaviour. Under the current EDCM proposals, the connection or disconnection of a nearby generator or demand customer may impact an existing generator's charge. This is because generation-led reinforcement may be deemed to be triggered or brought forward in that area.²⁰

2.21. As noted Under Option 1, we set out an expectation on the DNOs as part of our EDCM decision on demand charging, to consider and consult on whether some input data might be smoothed or averaged to minimise volatility. If similar measures were undertaken that also reduced the volatility of generation locational charges, this could help to mitigate some of the concern around volatility that arise from the locational charge.

Cost reflectivity

2.22. The option would shift the cost reflectivity of each generators' capacity charge from an individual to a collective basis (although the generation revenue target itself would remain unchanged compared to Option 1). Rather than estimating the costs of future generation-led reinforcement for each site and then scaling to the target on the basis of capacity (as per Option 1), it would simply divide up the generation revenue target between generators by capacity.

2.23. Some may consider this change to be less cost reflective. However, we note that some consultation responses argued that locational charges themselves were not being calculated in a cost reflective manner, partly due to the assumptions of LRIC and FCP used to estimate the cost of generation-led reinforcement.²¹ If this were the case then this option could represent an improvement on the proposed EDCM in relation to cost reflectivity.

¹⁹ Note that at present, any volatility is theoretical, as the EDCM has not yet been introduced, nor has there been a second set of charges to ascertain the extent of year-on-year volatility. Also other factors, such as changes in allowed revenue between years, may outweigh any changes in charges that arise from the operation of the methodology.

²⁰ Under this option, charges would still be affected by other generators, as EDCM generators would continue to see an impact through the generation revenue target. The impact could be positive or negative. This is because while the size of the target might increase in the case of a new generator connecting, there would be an additional generator to share the target.

²¹ See paragraph 1.15.

2.24. It should be noted that criticisms of the specific assumptions of LRIC and FCP²² do not necessarily apply in the case of generator credits. Credits are the negative of the demand charge, which, in both LRIC and FCP, are based on assumptions of the growth in demand, which tends to be more uniformly distributed and diversified than generation. (No equivalent “test sized demand customer” is used in FCP to calculate demand charges.)

Cost signals

2.25. This option would remove a potentially strong signal to generators about where to locate on the network, as well as an ongoing signal that reflects the costs of being sited in that part of the network. Removal could compromise some of the objectives of the EDCM in terms of encouraging the efficient use of the network.

2.26. However, this signal is only relevant to the extent that it is accurate, or at least that it signals the right “direction”²³. Additionally, even if the signal is accurate, a key question is whether the charge is predictable (eg stable) enough for a siting decision to be made on this basis, or if generators are able to respond to it (especially after connection). We also recognise that some of the EDCM objectives may be compromised if the charging method itself deters investment or negatively impacts existing plant.

2.27. We note that even after removing the locational charge element, three locational signals would remain:

- Connection charges – under the shallowish connection charging arrangements, connections that trigger reinforcement of the wider network will pay a proportion of that cost, thereby incentivising generators to avoid such areas.
- Locational credits – generators will receive a signal at the time of connection as to which sites offer the most potential credits, as well as an ongoing signal, ie to generate during peak times.
- Sole use asset charge – the cost associated with the distance the generator locates from the shared network is signalled as the higher the value of asset, the higher the proportion of direct costs and network rates they will be allocated.

Summary of Analysis

2.28. Under this option, the generation revenue target stays the same as under Option 1, however it is divided between generators on a different basis. Those with low locational charges would be likely to see their capacity charge increase, while those with high locational charges would likely see their capacity charge decrease. These potential changes should be weighed up against a potential decrease in ongoing volatility.

²² See paragraph 1.16.

²³ That is, it is lower if generation siting there will benefit the network and higher if it will impose further cost.

2.29. This option would likely require us to update the guidance we set out for the development of a common charging methodology in July 2009 (this may require a licence modification).²⁴

Table 2.2 – Assessment of Option 2

Advantages	Disadvantages
<ul style="list-style-type: none">• Potentially reduces volatility of charges and increases their predictability• Charges less affected by other customers behaviour• Generators still receive credits where they defer reinforcement• Charges could be easier for customers to calculate	<ul style="list-style-type: none">• Removes significant pricing signal indicating where to connect or to avoid• Arguably reduces individual cost reflectivity, as generators' impacts on future reinforcements are not taken into account

Option 3 – Continue to calculate charges as if exempted generators are charged

Proposal

2.30. This approach would continue to include exempted generators in the calculation of charges in the EDCM. The revenue target would remain unchanged and the method would calculate all charges for DG in the same way. However, charges would only then be levied on non-exempt generators.

Impact

2.31. The impact of this option on the total charges of non-exempted generators would be neutral compared to an EDCM that includes all generators (ie pre- and post-2005). Thus the effect compared to current charges would be close to that outlined by the DNOs in their 1 April 2011 EDCM submission, and which we analysed in the Impact Assessment that accompanied our EDCM consultation.²⁵

²⁴ Delivering the electricity distribution structure of charges project: decision on extra high voltage charging and governance arrangements - (Reference number: 90/09), 31 July 2009, <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=487&refer=Networks/ElecDist/Policy/DistChrgs>

²⁵ EDCM Impact Assessment, 20 May 2011, <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=687&refer=Networks/ElecDist/Policy/DistChrgs>

2.32. The revenue not recovered from exempt generators (ie the difference between the total calculated DG charges and the total levied DG charges) would be met by EDCM and CDCM demand customers. However, due to the large combined number of these customers over which this would be spread, we expect the effect on their charges to be very small or immaterial.

Analysis

2.33. There would be benefits in this approach as exempted generators progressively come into the EDCM. The charges of non-exempt generators would not change due to the entry of the previously exempt generators, thus mitigating some potential volatility in both generators' individual charges as well as their charges as a group.

2.34. This would also mitigate the increase in total recovery from exempted generators, both against an EDCM that includes all generators, and against current charges (for post-2005 generators).

2.35. However, it may not be considered appropriately reflective of costs to continue to include a notional £1/kW for exempted generators. In most cases they have already paid capitalised O&M meaning this amount would not need to be recovered through the revenue target.²⁶ On this basis, it might not be appropriate to add these costs to the revenue target.

2.36. This approach would also mean that, under the EDCM proposed by the DNOs, the revenue not recovered from exempted generators would instead be recovered from EDCM and CDCM demand customers (not non-exempted EDCM generators).

²⁶ This was more appropriate when it was assumed that pre-2005 generators would be compensated for unexpired capitalised O&M through the price control.

Table 2.3 – Assessment of Option 3

Advantages	Disadvantages
<ul style="list-style-type: none">• Preserves existing approach of EDCM despite exemption of some generators• Total charges for non-exempt DG estimated in April 2011 not affected – avoiding increase in total recovery for non-exempt DG under Option 1• No ongoing impact on charges as exempted generators' exemptions expire	<ul style="list-style-type: none">• EDCM and CDCM demand customers bear full "cost" of non-recovery from exempted generators – none is transferred to non-exempted generators• May not appropriately reflect costs to include notional O&M for exempted generators

Option 4 – Revised generation revenue target

Proposal

2.37. This option would amend the current generation revenue target to more closely reflect the reinforcement costs imposed on the network by generators. It could be used in conjunction with any of the above options.

2.38. The EDCM generation revenue target comprises EDCM DG's share (based on EDCM capacity as a total of all DG capacity) of the DG incentive revenue plus an allocation for the cost of pre-2005 DG O&M, as shown in this equation:

$$\text{EDCM generation revenue target} = [\text{DG incentive} + \text{notional } \pounds 1/\text{kW for O\&M for pre-2005 DG capacity}] * [\text{EDCM generation capacity} / \text{Total generation capacity of CDCM and EDCM generation}]$$

$$\text{where DG incentive revenue} = [80\% \text{ of the actual cost}^{27} \text{ of shared generation-led reinforcement} + \pounds 1/\text{kW incentive}] + \pounds 1/\text{kW for O\&M for post 2005-DG}$$

2.39. This option would amend this calculation so that the full cost of the generation-led reinforcement is used and remove the £1/kW incentive. It would no longer use the DG incentive revenue to calculate the target. This would also result in a simplified calculation:

²⁷ Technically, the cost is remunerated through a revenue entitlement over the following 15 years.

Generation revenue target = 100% of actual cost of generation-led reinforcement + £1/kW for O&M for all DG

Impact

2.40. This proposal is likely to reduce the size of the generation revenue target. Our preliminary analysis suggests that the £1/kW incentive rate is greater than 20 per cent of the actual shared cost of reinforcement, particularly when it is factored in that the £1/kW incentive is paid even where no reinforcement is triggered (this is further discussed below).

2.41. Therefore, the impact on total recovery from non-exempted generators would be a reduction. This would result in an increase in the amount recovered from EDCM demand and CDCM demand, although we think the effects of this on a per customer basis would be small or immaterial.

Analysis

2.42. This proposal may more accurately reflect the reinforcement costs imposed by generators as a group on the network.

2.43. The £1/kW incentive is intended to encourage DNOs to connect DG in the most efficient manner. It is paid regardless of whether reinforcement took place in each instance (although it is subject to a cap and collar at the end of the price control period). This means that under the current proposal, DG may as a group pay for costs that they have not incurred.

2.44. It is important to note that, under the current connection arrangements, generators may be encouraged to connect in areas that do not require reinforcement of the shared network, as they pay a proportion of this charge. However, under the current proposal, they will still as a group, pay £1 for each kW of capacity added. This option would amend this in the charging methodology, so that no reinforcement costs are recovered from generators, if they are not incurred.

2.45. While this option could more appropriately reflect costs for DG, it would also result in EDCM and CDCM demand customers paying the difference between the 20 per cent of shared reinforcement costs (if any) and the £1/kW incentive revenue. This revenue is not necessarily attributable to the costs imposed by demand customers either. However, we note that the ultimate benefits of incentivising the connection of DG are shared with demand customers, for example by offsetting demand thereby deferring reinforcements that customers will fund.

Table 2.4 – Assessment of Option 4

Advantages	Disadvantages
<ul style="list-style-type: none">• Charges may more appropriately reflect costs imposed by DG• Could help to offset some of the impacts on non-exempted DG arising from the exemption	<ul style="list-style-type: none">• Demand customers would pay the difference between the 20 per cent of shared reinforcement costs (if any) and the £1/kW incentive revenue – a cost they did not impose on the network

Option 5 – Revisit methodology

2.46. Should the options described above (either in combination or isolation) not be fit for purpose, then we consider that the remaining option is to reassess more fundamentally the methodology for charging non-exempted generators. This could include reassessing areas such as:

- how to calculate generation-led reinforcement charges (ie locational charges)
- whether a revenue target is required at all
- the costs signals that should be given to generators to encourage efficient use of the network
- the calculation of generation credits for eligible generators
- the calculation of sole use asset charges
- whether generators should pay other charges such as indirect costs
- whether an approach more similar to demand (eg basing part of the charge on the actual assets used²⁸) could or should be used

2.47. We are not inclined to support revisiting the methodology. We note that EDCM charges have been developed over a significant period of time and that a lot of thought and consultation has gone into the process. We are unsure if a significantly better methodology can be developed in a reasonable timeframe. Doing so would make it unlikely that EDCM charges for generators could be introduced on 1 April 2013, should we approve a revised method.

2.48. This does not close off the possibility that a better charging methodology for generators may be developed in the future. This may be particularly the case as the amount of generation on the distribution networks increases over time and different costs or levels of costs emerge. However this is likely to be a longer term objective.

²⁸ See issue 4 on page 51 of our EDCM consultation, available at <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=687&refer=Networks/ElecDist/Policy/DistChrgs>



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Table 2.5 – Assessment of Option 5

Advantages	Disadvantages
<ul style="list-style-type: none">• Would allow a more fundamental reassessment of EDCM DG charging	<ul style="list-style-type: none">• Likely to require a significant amount of time• Not certain a better methodology could be developed at this point in time• Would not improve certainty around future DG charges

3. Implementation arrangements

Question Box

Question 3.1: Do you think EDCM charges for non-exempted generators should apply from 1 April 2013? Why?

Question 3.2: Do you agree that the boundary change for generators should be deferred to coincide with the implementation of EDCM generator charging? Why?

Question 3.3: Do you have any comments on the suggested timetable for the reconsideration and subsequent approval of EDCM charges for DG?

Responses to our EDCM consultation

3.1. A significant majority of generators (or their representatives) that responded to our EDCM consultation expressed support for some form of delay or phasing of the introduction of EDCM generator charges. One respondent supported implementation from 1 April 2012, while another supported this only on the basis that it would not apply to pre-2005 generators and that their criticisms of scaling to a revenue target were addressed.

3.2. The reasons given for delaying the implementation of the methodology were primarily due to the concerns with the methodology that we outlined in paragraph 1.12-1.18, as well as to give time to address the arrangements for pre-2005 generators. The other reasons for delay (or in some cases phasing), were mainly in relation to the magnitude of some of the increases in post-2005 generator charges as well as the size of the charges that pre-2005 generations would have faced for the first time.

Revised implementation date

3.3. We explained in our decision of 6 September 2011 to approve the EDCM for demand charges that if we approved the EDCM for DG it would apply from 1 April 2013 or possibly later. Subject to the implementation of a time limited exemption for pre-2005 DG, our thoughts are that charges under the EDCM for non-exempted generators should apply from 1 April 2013.

3.4. We note that a significant concern raised by generators in their responses was around the application of use of system charges to pre-2005 generators. We expect that applying a time-limited exemption would help to mitigate this concern. We note that this would result in fewer generators paying use of system charges for the first time from 1 April 2013.

3.5. The additional time also provides an opportunity to reassess elements of the methodology in light of some of the concerns raised by generators that we outlined in Chapter 2.

3.6. We recognise the changes described in the above paragraphs mean that there continues to be uncertainty around what charges will apply when EDCM generation charges commences. However, there is to some extent a trade off – we received significant feedback that the EDCM should be delayed because of the pre-2005 issue and the other concerns raised. We aim to address concerns where possible, but this may cause some uncertainty until they are resolved.

3.7. To improve certainty, we will encourage the DNOs to ensure that indicative charges are published as soon as possible. Ideally, this would be by 1 April 2012, which would give a full years' notice if charges were implemented from 1 April 2013. We will also consider whether the responses to the possible conditions we raised in our consultation can be addressed prior to this date.

Boundary

3.8. We consider it appropriate to delay the boundary change for high voltage (HV) generators metered at the HV side of substations with a primary voltage level of 22 kilovolts or more, so that it occurs at the same time as the introduction of EDCM charges for generators. When we previously delayed the introduction of the EDCM from 1 April 2011 to 1 April 2012, we also delayed the boundary change.²⁹

3.9. We recognise that this will mean that sites affected by the boundary change that have both demand and generation meters will have charges for the former calculated by the EDCM and the latter by the CDCM (or the opposite in a minority of cases). We think that this is preferable to calculating the generation charge under the DNO's current EHV methodologies for what would only be an interim period. We understand that all generation tariffs under the CDCM are currently net credits.

Next steps

3.10. In this consultation, we set out some options for how EDCM DG charging might be modified in light of the impact of a time-limited exemption for some pre-2005 DG and responses to our EDCM consultation.

3.11. We seek stakeholders' feedback on these options, particularly whether they fairly balance the needs of generators and other users of the networks, as well as whether they enable the EDCM to meet the Relevant Objectives for DG charging. Please see Appendix 1 for details of who to send your response to.

3.12. Based on feedback to this consultation and ongoing analysis, as well a future decision on the implementation of time-limited exemption arrangements, we will consider whether and how to update our existing guidance on the principles and

²⁹ Decision on revised submission and implementation dates for the EHV Distribution Charging Methodology (EDCM) - (Reference number: 120/10), 22 September 2010 <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=651&refer=Networks/ElecDist/Policy/DistChrgs>

assumptions for EDCM charging. We may also provide feedback on the responses to the issues that we raised in our EDCM consultation of May 2011 in relation to DG charging³⁰, and other issues raised by DG during the EDCM consultation process.

3.13. Following this, we anticipate the DNOs would publish a consultation including indicative individual impacts on EDCM DG charges. This would help DG to understand the impacts on their charges before providing further comment.

3.14. Following DNO consultation, we envisage the DNOs would resubmit or amend their EDCM proposals for DG. We would aim for this to be done so that DG have the best part of a year to know their indicative charge before it would apply.

3.15. As per the previous EDCM proposals, we would then issue a further consultation on the DNOs' revised proposals. We would then aim to make a decision roughly six months in advance of the application of charges on 1 April 2013 (if we approve the methodology), again to provide sufficient notice of any changes in charges (or the quantum of charges for non-exempted pre-2005 generators).

3.16. The following table provides an indicative time frame for the way forward on EDCM DG charging. This timetable may change depending on the feedback we receive to this consultation and any changes required to the methodology, or due to other circumstances.

³⁰ These include issues such as credits for intermittent generators. We would also take into account any relevant conditions we made on the EDCM demand methodology, as to whether these should also apply to the EDCM DG methodology. See Issues 8-12 and 17-21 of our EDCM consultation, available at: <http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=687&refer=Networks/ElecDist/Policy/DistChrgs>

Table 3.1 – Indicative timeframe for EDCM DG charging

Date	Action
21 October 2011	Publish consultations on time-limited exemption and way forward on EDCM DG charging
5 December 2011	Consultation period closes for above consultations
January 2012	Decision on length of time-limited exemption Refinement of EDCM DG options and feedback to DNOs on options
February-March 2012	DNOs publish joint consultation on EDCM DG charging proposals, including individual impacts on DG
April-May 2012	DNOs submit revised EDCM DG methodology to Ofgem
May-June 2012	Ofgem consultation on DNOs' revised EDCM DG proposals
August-September 2012	Ofgem publishes decision on EDCM for DG
1 April 2013	Charges for non-exempt DG commence Revised EDCM/CDCM boundary for DG implemented

Appendix 1 - Consultation Response and Questions

1.1. Ofgem would like to hear the views of interested parties in relation to any of the issues set out in this document.

1.2. We would especially welcome responses to the specific questions which we have set out at the beginning of each chapter heading and which are replicated below.

1.3. Responses should be received by 5 December 2011 and should be sent to:

- Guy Donald
- Distribution Policy
- 9 Millbank London SW1P 3GE
- 0207 901 7430
- guy.donald@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them in Ofgem's library and on its website www.ofgem.gov.uk. Respondents may request that their response is kept confidential. Ofgem shall respect this request, subject to any obligations to disclose information, for example, under the Freedom of Information Act 2000 or the Environmental Information Regulations 2004.

1.5. Respondents who wish to have their responses remain confidential should clearly mark the document/s to that effect and include the reasons for confidentiality. It would be helpful if responses could be submitted both electronically and in writing. **Respondents are asked to put any confidential material in the appendices to their responses.**

1.6. Any questions on this document should, in the first instance, be directed to the contact above.

CHAPTER: Two

Option-specific

Question 2.1: Option 1 – Do you think that charges more or less appropriately reflect costs imposed by DG, following the removal of (some or all) pre-2005 DG?

Question 2.2: Option 2 – Do you think it is appropriate to include a generation-led reinforcement (locational) charge? What are the advantages and disadvantages of removing such a charge?

Question 2.3: Option 2 – This option may result in increased charges for generators currently in demand-dominated areas of the network, compared to those predicted under the EDCM. However, this could be matched by a decrease in potential volatility. What are your views on this potential trade off?

Question 2.4: Option 3 – Do you think that the EDCM should continue to calculate charges as if all generators continue to be charged? What is the reasoning behind your response?

Question 2.5: Option 4 – Is it appropriate for EDCM generators to recover their share (based on their capacity relative to CDCM) of the DG incentive revenue (ie 80 per cent of generation-led reinforcement costs plus £1/kW incentive revenue)? If not, how should this incentive revenue be recovered?

Question 2.6: Option 5 – Do you think it is better to revisit the methodology more fundamentally?

Question 2.7: Option 5 – What cost signals do you think generators have the ability to respond to?

General questions

Question 2.8: Do you have any other suggested modifications to the proposed methodology?

Question 2.9: Which of the options (if any, or including a combination) do you think would enable the EDCM for DG charging to fulfil the Relevant Objectives set out in the licence after the removal of exempt generators? Why?

Question 2.10: What is the most appropriate way of redistributing the unrecovered revenue from exempted generators to other users of the network?

CHAPTER: Three

Question 3.1: Do you think EDCM charges for non-exempted generators should apply from 1 April 2013? Why?

Question 3.2: Do you agree that the boundary change for generators should be deferred to coincide with the implementation of EDCM generator charging? Why?

Question 3.3: Do you have any comments on the suggested timetable for the reconsideration and subsequent approval of EDCM charges for DG?

Appendix 2 - Glossary

A

Allowed revenue

The amount of money that a network company can earn on its regulated business.

Authority

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

C

Common Distribution Charging Methodology (CDCM)

The CDCM is the name given to the common methodology for calculating use of system charges for customers connected to HV/LV distribution systems. It was developed by the DNOs under standard licence condition 50 and was implemented on 1 April 2010.

D

Distributed Generator/Distributed Generation (DG)

A generator or generation which is connected directly to a distribution network as opposed to the transmission network. The electricity generated by such schemes is typically used in the local system rather than being transported across Great Britain.

Distribution Network Operator (DNO)

One of 14 incumbent electricity distributors who have defined geographical distribution services areas and who are subject to standard licence conditions and charge restriction conditions in their Electricity Distribution Licences.

Distribution Price Control Review 5 (DPCR5)

DNOs operate under a price control regime, which is 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 has typically lasted five years. DPCR5 is the existing price control that commenced on 1 April 2010 and will end on 31 March 2015.


Distribution Use of System (DUoS) Charges

Charges paid for the use of the distribution network.

E

Extra High Voltage (EHV)

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



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Extra High Voltage Distribution Charging Methodology (EDCM)

The EDCM is the collective name given to each of the two common methodologies for EHV UoS charging submitted by the DNOs to us on 1 April 2011 for approval by the Authority under standard licence condition 50A.

H

High voltage (HV)

Term used to describe the parts of the distribution networks typically at a voltage level of at least 1kV and less than 22kV.

I

Indirect costs

The costs incurred undertaking activities which do not involve physical contact with system assets. Such costs include network policy; network design & engineering, project management; engineering management & clerical support; control centre; system mapping; call centre; stores vehicles & transport; IT & telecoms; property management; HR & non-operational training; operational training; Finance and Regulation; CEO etc.

K

Kilovolt (kV)

A unit of voltage (1,000 volts).

Kilovolt-ampere (kVA)

A unit of active power (1,000 volt-amperes). The values of network capacity and the loads flowing over a network are typically referred to in terms of kVA.

Kilowatt (kW)

A unit of power (1,000 watts).

Kilowatt hours (kWh)

A unit of energy equal to the work done by a power of 1000 watts operating for one hour.

P

Pre-2005 DG


DG whose contractual terms were agreed before 1 April 2005.

Post-2005 DG

DG whose contractual terms were agreed on or after 1 April 2005.

Primary substation

A substation at which the primary voltage is greater than HV and the secondary voltage is HV (covers 132/11kV substations).



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R

Reinforcement

Network development to increase capacity in order to relieve an existing network constraint or facilitate new load growth.

S

Sole use asset

As defined in the EDCM submission.

Shared asset

Assets on the distribution network that are not “sole use assets”.

Standard Licence Condition (SLC)

These are conditions that licensees must comply with as part of their licences. SLCs are 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.

Substation

An electrical substation is a subsidiary station of a distribution system where voltage is transformed from high to low or the reverse using transformers and/or where circuit switching takes place.

Super red time band

A DNO specific time band, defined for the purpose of calculating EDCM charges. The time band is seasonal representing a period when the network is highly loaded and the annual simultaneous maximum demand is likely to occur.

Sustainable development

Refers to economic development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

Appendix 3 - 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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Consultation Co-ordinator
Ofgem
9 Millbank
London
SW1P 3GE
andrew.macfaul@ofgem.gov.uk