

**DETERMINATION BY THE GAS AND ELECTRICITY MARKETS AUTHORITY
OF A DISPUTE UNDER SECTION 23 OF THE ELECTRICITY ACT 1989 - The
charges for the provision of three points of connection between a
Customer and the distributor's electricity distribution system.**

1. INTRODUCTION

- 1.1. The Gas and Electricity Markets Authority¹ ("the Authority") has been asked by [REDACTED] ("the Agent"²), working on behalf of [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] [REDACTED] ("the Customers"), to determine a dispute between the Customers and [REDACTED] [REDACTED] ("the Company"). The dispute concerns the costs for reinforcement works, as contained in the connection offer, associated with the provision of three points of connection between the Company's electricity distribution system and [REDACTED] [REDACTED] ("the Premises").
- 1.2. The dispute has been referred to us for determination under section 23 of the Electricity Act 1989 ("the Act"). We are required to determine such disputes once a customer has asked us to do so.
- 1.3. Copies of the submissions by the Customers and the Company in relation to this dispute are attached as Appendices 1 and 2 (respectively) to this Determination. The responses to the parties' submissions and further comments are also contained in these appendices. A note of the oral hearing is contained in Appendix 3.

¹ In this document the terms the "Authority" and "we" are used interchangeably

² On 16 October 2012 we received a letter of authority from the Customers stating that the Agent had been authorised to progress the request for determination on their behalf.

2. STATUTORY OBLIGATIONS

- 2.1. Any dispute arising under sections 16 to 21 of the Act between an electricity distributor and a person requiring a connection may be referred to us under section 23 of the Act for determination.
- 2.2. Section 16(1) of the Act, places an obligation on an electricity distributor to connect any premises to its distribution system if the owner or occupier (or authorised supplier acting on his behalf) requests it.
- 2.3. Section 19 of the Act provides that where any electric line or electrical plant is provided by an electricity distributor in pursuance of section 16(1) of the Act, the electricity distributor may require any expenses reasonably incurred in providing it to be defrayed by the person requiring the connection to such extent as is reasonable in all the circumstances.
- 2.4. The Electricity Safety, Quality and Continuity Regulations 2002 ("the ESQCR") specify the safety standards, power quality and supply continuity requirements with which electricity distributors, amongst others, have to comply. Regulation 27, paragraph 3 requires electricity distributors to maintain the voltage at supply terminals on their networks within certain ranges depending on the voltage level of the supply terminal.

3. LICENCE OBLIGATIONS

- 3.1. Standard Licence Condition (SLC) 13 of the Electricity Distribution Licence ("the Licence") requires that electricity distributors have a Connection Charging Methodology in force, which has been approved by the Authority. If the licensee is a Distribution Services Provider ("DSP") the Connection Charging Methodology must include the Common Connection Charging Methodology ("the CCCM"). The CCCM describes the methodology under which customers should be charged for a connection to a DSP's distribution network. One of the objectives contained in the Licence is that:

"compliance with the methodology results in charges which reflect, as far as is reasonably practicable (taking into account of implementation costs), the costs incurred by the licensee in its Distribution Business³."

- 3.2. Paragraph 5.1 of the CCCM requires DSPs to provide connecting customers with a connection offer that represents the lowest overall capital cost solely to provide the capacity required by the customer. This is known as the Minimum Scheme.
- 3.3. Paragraph 5.25 of the CCCM requires that when reinforcement is driven by thermal capacity or voltage the Security Cost Apportionment Factor ("the Security CAF") is used to apportion costs between the DSP and customer. The Security CAF is calculated using the following formula:

$$\text{Security CAF} = \frac{\text{Required Capacity}}{\text{New Network Capacity}} \times 100\%$$

- 3.4. Paragraph 5.24 of the CCCM contains definitions for terms relating to the Security CAF. This includes the definition for New Network Capacity.

4. FACTS OF THE CASE

- 4.1. We consider the following to be the facts of the case, based on the assessment of the information submitted to us by the parties to this determination.
- 4.2. On 7 October 2011 the Customers requested one new Point of Connection ("POC") for one 190kVA hydro generator and an upgrade, at two existing POCs, from single phase to three phase with an increase to 100kVA import capacity.

³ Paragraph 13.3(c) of the Standard Conditions of the Electricity Distribution Licence

- 4.3. On 3 November 2011 the Company provided the Customers with a single offer for the three POCs with a total connection charge of £480,490.37. A breakdown of the charge provided by the Company is in Appendix 2.
- 4.4. The connection offer consisted of upgrading and reinforcing the existing single phase overhead line to a three phase overhead line. The line was located in a valley and crossed the property of several landowners. The connection offer also involved relocating a section of the reinforced line from its current location, the costs for dismantling the existing overhead line that would become redundant and the replacement of four high voltage to low voltage pole mounted transformers where the route has been modified.
- 4.5. To calculate the connection charge the Company apportioned the costs of the reinforcement⁴ between the Customers and the Company using the Security CAF. The Customers' Required Capacity is 190kVA. The reason for the network reinforcement was the network voltage headroom capacity required to connect the generator and keep the network within voltage limits. As this reinforcement had been sized to fit the voltage headroom capacity required by the Customers' generator, the Company set the New Network Capacity as 190kVA. This resulted in all the reinforcement costs being apportioned to the Customers, as shown below:

$$\text{Security CAF} = \frac{\text{Required Capacity}}{\text{New Network Capacity}} \times 100\%$$

$$\text{Security CAF} = \frac{190\text{kVA}}{190\text{kVA}} \times 100\% = 100\%$$

- 4.6. On 27 February 2012 the Customers accepted the connection offer and the first staged payment of £22,981.86 was made to the Company. We

⁴ In paragraph 5.16 of the CCCM, reinforcement is defined as assets installed that add capacity (network or fault level) to the existing shared use Distribution System.

understand that the Customers accepted this offer with the intention of disputing the costs.

- 4.7. On 15 August 2012 the dispute was referred to us for determination.
- 4.8. On 23 January 2013, at the request of the Customers, an oral hearing was held. Both parties submitted evidence to the hearing. The note from the oral hearing, follow up questions asked by us and answers from the parties are included in Appendix 3.
- 4.9. As of 20 May 2013 both demand connections had been completed and energised and the works for the generation connection have been completed but not energised. The Customers have paid a total connection charge of £480,490.37.
- 4.10. Both the Customers and the Company have made submissions to us with respect to this determination and these are included in Appendices 1 and 2 respectively. A note from the oral hearing is included as Appendix 3.

5. POINTS OF DISPUTE

- 5.1. We consider that we have been asked to determine on -
 - whether the scheme proposed by the Company is the Minimum Scheme, and
 - whether the Company's apportionment of the reinforcement costs using voltage headroom required by the generator is in accordance with the CCCM.
- 5.2. The points of dispute below are drawn from the statements of facts made by both parties, the oral hearing, and responses to additional questions we posed to both parties.

Minimum Scheme

- 5.3. The Customers provided a proposed route that they considered to be the Minimum Scheme on 21 September 2011. The Company stated that it initially considered the Minimum Scheme to be a sole use three phase overhead line for the Customers that connected to a point on the existing 11kV three phase network. The Customers informed the Company that, in their view, local landowners would not provide necessary land rights for two overhead lines in the valley. The Company noted that the Customer's proposed route involved two overhead lines being present in the valley. As such the Company believes its 3 November 2011 connection offer, which consists of one overhead line being present in the valley, to be the Minimum Scheme.
- 5.4. The Customers are disputing whether the 3 November 2011 connection offer provided by the Company represents the Minimum Scheme.
- 5.5. As part of this dispute the Customers also believe that they should not be charged for the dismantling of existing assets and the costs of replacing four pole mounted transformers along the route, while receiving no credit for scrap value or allowing the Company to avoid expenditure on asset replacement. The Customer stated that it did not appear fair to require them to pay all of the costs of connection that arise from the Company replacing an ageing piece of infrastructure. In response the Company said that the current line was built in the 1960s and was fit for purpose. The Customer disagreed with the Company's observation that the line was from the 1960s and stated that many poles dated from the 1950s.
- 5.6. The Customers have queried why the costs for tree cutting have increased, from those included in the original quote, when a detailed breakdown of costs was provided. In response to a question asked following the oral hearing, the Company said that this was due to tree cutting costs being embedded in other cost categories previously. The Company stated that credit would be provided to the Customers where the Customers completed some of the work themselves.

- 5.7. In the oral hearing the Customers disputed being required to pay an Operation and Maintenance (O&M) charge.

Apportionment of costs

- 5.8. The Customers dispute whether the Company calculated the apportionment of the reinforcement costs in accordance with the CCCM. They consider New Network Capacity, used in the Security CAF apportionment calculation, should not include network capacity required to accommodate voltage rise caused by a connecting customer.
- 5.9. To support this position the Customers highlighted that the CCCM definition (Paragraph 5.24) of New Network Capacity, the denominator in the Security CAF, does not refer specifically to voltage rise, only voltage drop.

“New Network Capacity:

the secure capacity of the Relevant Section of Network following Reinforcement. This is our [the DSP’s] assessment of the resultant capacity and will be considered in respect of thermal capacity, voltage drop and upstream restrictions and compliance with our relevant design, planning and security of supply policies. The equipment ratings to be used are the appropriate operational rating at the time of the most onerous operational conditions taking account of seasonal ratings and demand.”

- 5.10. The Company has stated it recognises that the current definition of New Network Capacity in the CCCM is not explicit regarding the treatment of voltage rise.
- 5.11. The Customers have outlined that they consider that the load and generation connections should have their costs apportioned separately.

- 5.12. The Company stated that even though voltage rise was not named specifically in the definition of New Network Capacity, it was a relevant consideration when assessing secure network capacity for the purpose of compliance with security of supply and design and planning standards as provided for in the definition. The Company also considers that as the size of reinforcement is dictated by the generator, the connection costs should be apportioned based on the capacity used by this connection.
- 5.13. In its response to the questions asked following the oral hearing, the Company stated that to apportion costs in the manner identified by the Customers would result in existing connected customers paying a significant proportion of the reinforcement costs, despite these costs being driven by the Customers and providing no capacity for further generation.

6. CONSIDERATION OF EVIDENCE

- 6.1. We have carefully considered the submissions and supporting evidence from both parties, as set out in Appendices 1 and 2 and summarised in this Determination. We have also considered the submissions provided in the oral hearing held on 23 January 2013.
- 6.2. We have obtained independent expert advice from consultants in relation to the Minimum Scheme and the voltage headroom capacity of that scheme.

Minimum Scheme

- 6.3. Various options were considered by the Company to provide the connection. These included -
- a dedicated, sole use three phase line back to a point on the existing 11kV three phase network,
 - upgrading, reinforcing and partial rerouting of the existing single phase overhead line to a three phase overhead line, and

- the above options with the use of an automatic voltage regulator.
- 6.4. A dedicated sole use line was initially considered by the Company to be the Minimum Scheme. This option, in agreement with the Customers, was not considered feasible due to anticipated difficulty obtaining land rights and planning permission. The Company considered the reinforcement and partial rerouting of the existing overhead line was therefore the most feasible Minimum Scheme. The revised route was based on a route suggested by the Customers. This route was not used in its entirety as it partly involved two parallel spans of overhead line.
- 6.5. Use of an automatic voltage regulator was investigated by the Company. The Company found that, whilst it would result in a smaller conductor size, overall the costs of connection would increase.
- 6.6. These options and one additional option⁵ were considered in the assessment of the Minimum Scheme. Our assessment concluded that, given planning and land access problems, the reinforcement and partial rerouting of the existing overhead line represented the most feasible Minimum Scheme.
- 6.7. The Company responded to questions asked following the oral hearing about the Customers' dispute over being charged for the replacement of four pole mounted transformers. The Customers stated their connection did not require new transformers and that the Company could have reused the existing assets. The Company responded that this option was chosen to ensure that there was no risk to security of supply resulting from damage during the removal and reinstallation of the existing transformers. We requested further information following the oral hearing on this point. The Company stated that relocating and reusing transformers of this type and age had caused problems in the past. It stated that moving the transformers could damage the fixings or disturb the sediment, making the transformer unusable. It also stated that extra

⁵ Undergrounding and reinforcing the line was also considered

time, effort and potentially cost would be required to carefully remove this type of transformer.

- 6.8. The Company responded to a question asked following the oral hearing about the Customers' dispute over the payment for the removal of existing assets, whilst receiving no credit for scrap value or deferring asset replacement. The Company stated that, for it to obtain permission from local landowners, only one overhead line could be present in the valley, meaning that existing sections of line no longer in use would need to be removed. The Company also said that paragraphs 5.33 and 5.34 of the CCCM state that no credit would be provided to connecting customers for scrap value of assets removed or for deferment of asset renewal expenditure.
- 6.9. The Customers explained in an email dated 5 June 2013 that they carried out all the tree felling on the Premises themselves which was approximately half of the felling required for the whole project. The Customers stated in the same email that they still believed the cost attributed to the tree felling on the other properties was excessive. The Company explained, in response to a question asked following the oral hearing, that although the tree cutting costs shown in the breakdown provided to the Customers in July 2012 (£15,180) were higher than those given in a breakdown provided in February 2012 (£11,000), the reason for this was that some tree cutting costs were embedded in other cost categories in the earlier breakdown. There was not an increase in tree cutting costs per se. The Company has stated that appropriate credit would be given to the tree cutting that was carried out by the Customer.
- 6.10. Paragraph 5.12 of the CCCM states that the DSP can charge a customer an O&M charge on assets that are requested by a customer, and which are over and above the Minimum Scheme. The Company has stated that its connection offer is the Minimum Scheme. As such, the Customers should not be required to pay an O&M charge. The cost breakdown provided by the Company does not contain an O&M charge.

Apportionment of costs

6.11. The Company has apportioned all of the costs of reinforcement to the Customers. This was based on the assumption that the generation connection will use all of the new voltage headroom capacity created on the network.

6.12. One of the Relevant Objectives of the CCCM, as stated in paragraph 13.3 (c) of the licence, is that:

"compliance with the charging methodology results in charges which reflect, as far as is reasonably practicable (taking account of implementation costs), the costs incurred by the licensee in its Distribution Business"

6.13. The definition of New Network Capacity in the CCCM is not explicit with regard to the treatment of voltage rise when considering the new capacity created on the network. The definition does refer to voltage drop and "relevant design, planning and security of supply policies".

6.14. In its submissions, the Company referred to the ESQCR as one of the policies that governs the voltage levels that can be safely and legally accommodated on its network.

6.15. The driver for the capacity of the reinforcement in this instance is the mitigation of the voltage rise caused by the generation connection. The Company stated that the capacity required by the demand connections could be accommodated with less reinforcement.

7. DISCUSSION AND CONCLUSIONS

Minimum Scheme

7.1. Both the Company and our assessment, informed by our consultants, identified a new dedicated three phase overhead line, connecting back to the existing three phase network to the Premises, as the Minimum

Scheme. Two of the other options considered were unfeasible. These options were a sole use asset and the route proposed by the Customers. They both involved two overhead lines in the valley and we understand land rights for two lines would be difficult to obtain. The other two options considered the use of an automatic voltage regulator and undergrounding the line, result in higher costs than the connection offer provided by the Company. As such we consider the connection offer provided by the Company, on 3 November 2011, to be the Minimum Scheme as it represents the overall least capital cost for a scheme that could be feasibly be delivered. We also consider it was reasonable for the Company to charge the Customers for the dismantlement of the surplus line, as this was necessary to obtain the land rights to make the connection the Customers required.

- 7.2. Based on the risk of damage to the existing transformers, their likely reduced reliability and the fact that they are near the end of their projected operational life, we consider that it is reasonable for the Company to use new transformers. The CCCM currently states explicitly that no credit is allowed for the deferment of asset renewal expenditure.
- 7.3. We recognise the Customers' view that there should be credit for expenditure avoided by the Company or scrap value from removed assets. However, the Company is required to comply with the rules as they stand and the CCCM is clear on these points. We therefore consider that the Company has charged the Customer for the new transformers and dismantling the surplus line in accordance with the CCCM.
- 7.4. We consider there may be items of cost within the Company's quote, such as the tree felling, where the costs allocated appear to be higher than indicated in the methodology. However, equally there are other line item costs that appear lower than our estimate would indicate. We acknowledge that some costs may appear as separate line items whilst others are embedded in other cost lines. We do not consider that the costs associated with the tree felling have resulted in the total costs for the project to exceed those that we would consider to be reasonable. We

would however expect the Company to provide greater clarity on cost items and proper justification for any cost items that are not set out in their charging methodology. We would also expect the Company to provide the necessary recompense for any tree felling the Customers have completed which it has assured us it will. We would expect this recompense to reflect fairly the costs avoided by the Company.

- 7.5. Based on our consideration of the submission, we have seen no evidence that an O&M charge has been charged to the Customers.
- 7.6. Based on the evidence provided by the Company and the Customers, advice received from our consultants and our assessment of the case, we consider that the 3 November 2011 connection offer represents the Minimum Scheme and charges for the proposed reinforcement works are reasonable.

Apportionment of costs

- 7.7. We recognise that the current definition of New Network Capacity in the CCCM is not explicit on the treatment of voltage rise.
- 7.8. The Company referred to the consideration of relevant design, planning and security of supply policies in the definition.
- 7.9. The ESQCR is a Statutory Instrument that requires DSPs to maintain the voltage at supply terminals on their networks within +10% or -6% for low voltage supply terminals and $\pm 6\%$ for 11kV supply terminals. These requirements govern what voltages DSPs can permit on their networks. We consider that the ESQCR, a Statutory Instrument, may be considered as a "relevant design, planning and security of supply [policy]" for the purpose of calculating New Network Capacity. Therefore we consider that the capacity of assets sized to remain within ESQCR voltage limits may be considered as New Network Capacity for the purposes of calculating the Security CAF.

7.10. We believe this approach is supported by paragraph 5.7 of the CCCM, which states that:

"The factors taken into account by us [the DSP] to calculate the Connection Charge will include, but are not limited to: industry standards governing the Distribution System"

7.11. We recognise that, due to the current wording in the CCCM, other interpretations as to the treatment of voltage rise could exist.

7.12. The Security CAF is dependent on what proportion of the New Network Capacity is used by a customer. The load flow analysis found that no further generation can be connected at the Premises without compromising the ESQCR voltage limits. We therefore consider that the Customers' generation uses 100% of the voltage capability of the New Network Capacity and the Company was not acting unreasonably when apportioning 100% of the reinforcement costs to the Customers.

7.13. We acknowledge that the current definition of New Network Capacity is not clear on the treatment of voltage rise. We are aware that the Connections Charging Methodology Forum (CCMF) had discussed this issue in December 2012. We note that a Distribution Connection and Use of System Agreement (DCUSA)⁶ modification proposal, DCP172, has been submitted to, and will be reviewed by, an industry working group. This modification proposal is seeking to clarify the consideration of voltage rise when determining New Network Capacity. We will consider any such modification on its merits.

7.14. We note that in July 2011 we determined⁷ a dispute relating to the apportionment of costs for reinforcement. In this case we determined that costs should be apportioned based on the driver for the

⁶DCUSA is a multi-party contract between the licensed electricity distributors, suppliers and generators. It is concerned with the use of the electricity distribution systems to transport electricity to or from connections to them. The DCUSA replaced numerous bi-lateral contracts, giving a common and consistent approach to the relationships between these parties in the electricity industry. One of these contracts is the CCCM.

⁷<http://epr.ofgem.gov.uk/Pages/EPRInformation.aspx?doc=http%3a%2f%2fepr.ofgem.gov.uk%2fEPRFiles%2fErratum+letter+correcting+error+in+Determination+concerning+dispute+of+the+provision+of+an+electricity+connection+to+the+Cu.pdf>

reinforcement. Similarly, in the case now considered, the driver for the reinforcement is the generation connection. Therefore we consider that the costs of reinforcement should be apportioned on the basis of the of the capacity required by the connection which drives the reinforcement.

- 7.15. Based on our consideration of the evidence provided by the parties, advice received from our consultants, and our assessment of the case, we consider that the Company has not apportioned the costs for reinforcement contrary to the CCCM.

8. DETERMINATION

- 8.1. The Authority finds that the Company's connection offer of November 2011 constituted the Minimum Scheme and that the costs for reinforcement have not been apportioned incorrectly. We also expect that the Company provides fair recompense to the Customers for any tree felling costs avoided as a result of the Customers completing part of the work.
- 8.2. This document constitutes a notice stating reasons for our decision for the purpose of section 49A of the Act.



Andrew Burgess

Associate Partner, Transmission and Distribution Policy

Duly authorised on behalf of the Gas and Electricity Markets Authority

14 June 2013

APPENDIX ONE – Customers evidence

Statement of facts

Question 1

Please explain exactly what is in dispute in this case. Please provide details of the quote provided to you by the Company, attaching any relevant documentation.

The dispute and all relevant information were provided within the original request for a determination; the original request was dated 5th July 2012. The attachments were of varying dates but all included within the original submission.

Extract from note agreed with customer and agent, dated 29/11/12:

Ofgem understanding

"You are disputing that the proposed connection is the minimum scheme. You consider that the minimum scheme is to add an additional wire to the existing two wire line from [REDACTED] to [REDACTED]. You also consider that if the minimum scheme is broadly in line with [REDACTED]'s proposals it should not include the removal of a section of the existing two wire line from [REDACTED] to [REDACTED] or the replacement of any of the transformers at the properties mentioned in 3.d, above, or the new 'tapoff' at [REDACTED] cottage.

Customer response

"We are disputing that the scheme as proposed is the minimum cost scheme. (to [REDACTED] and [REDACTED]). Our first observation is that each of the 3 connections are small capacity, metered at low voltage and capable of being connected to the uprated line. However, [REDACTED] have maintained from the outset that they were not prepared to countenance up-rating the 2 wire line to 3 wire in order to provide the required connections. Noting the condition, age and location of the existing line we would understand that [REDACTED] would wish to replace the line and in a new location. Therefore, if we consider that the minimum scheme is broadly in line with [REDACTED] proposals we confirm that it should not include the costs for works that are not associated with the connections to [REDACTED] and [REDACTED]."

Ofgem understanding

"You are disputing the apportionment of costs. You consider that the replacement of the existing two wire line is reinforcement and that the costs should be split between the customer and the DNO. (Note: we will need you to provide a full explanation of how you believe costs should be apportioned and why as part of our initial questionnaire."

Customer response

"We are indeed disputing the apportionment of costs based on the fact that the reinforcement aspect of the project should be cost apportioned between the

customer(s) and the DNO. Again we would be pleased to detail our rationale as to why we believe that [REDACTED] have incorrectly apportioned costs, noting that we have undertaken this exercise utilising the limited information provided to date by [REDACTED]."

Question 2

Where applicable, please provide a description of the works this dispute relates to, attaching any relevant paperwork. Please explain the requirement for three connections and the status of the agreed connections.

The dispute and all relevant information were provided within the original request for a determination; the original request was dated 5th July 2012.

The work associated with the new hydro scheme is to facilitate the export connection of the [REDACTED] generation connection.

The work associated with the fisheries schemes is to provide additional capacity and thus to extend the capacity of the existing (single phase) supplies that are already in existence to [REDACTED] and [REDACTED].

Extract from note agreed with customer and agent, dated 29/11/12:

Ofgem understanding

There is an existing small demand connection at [REDACTED]. This is supplied by a two-wire 11 kV line from [REDACTED] to the [REDACTED] site. (Note: we will need you to confirm the capacity of this connection, and you can do this when you respond to our initial questionnaire)

Customer response

There is existing small demand connections at [REDACTED] and [REDACTED]. Both are single phase 'load' connections connected to the existing single phase 2 wire line and will both be replaced by 100kva pole mounted transformers.

Ofgem understanding

The customer has requested two 100kVA demand connections at [REDACTED] [REDACTED] (one of which will replace the existing small demand connection), and a 190 kVA export/small demand connection at [REDACTED]. (Note: we will need you to confirm the size of the demand required at [REDACTED])

Customer response

[REDACTED] has requested the 2 small single phase connections, as detailed above, to be up-graded to 100KVA . A new generation connection has also been requested for [REDACTED] (a totally separate company but run by the same family).The connection requested will supply the 190KW hydro export scheme.

Ofgem understanding

[REDACTED]'s proposed connection scheme is to:

- a. Remove the existing two wire line from [REDACTED] to [REDACTED]
- b. Remove a section of the existing two wire feeder from [REDACTED] to [REDACTED] Sectionalizer
- c. Install a new three wire line from [REDACTED] to [REDACTED]. This will go directly from [REDACTED] to [REDACTED] and then follow the route of the existing two wire line from [REDACTED] to [REDACTED]
- d. Replace the existing 'tapoffs' and transformers at [REDACTED] [REDACTED] [REDACTED], [REDACTED] and [REDACTED]
- e. Install new transformers at [REDACTED] for the demand and export connections requested (note: if we do not have this already, we will get further details from [REDACTED] regarding this proposal)

Customer response

To the best of our knowledge the proposals from [REDACTED] are detailed on their plan dated 3/11/11. To remove any confusion or ambiguity it may be beneficial for Ofgem to confirm with [REDACTED] exactly their intentions, what costs have been included and what cost, if any, are to be borne by [REDACTED]. Obviously we would be happy to provide a plan detailing our interpretation of the minimum scheme and costs that should be borne by both party prior to undertaking the cost apportionment calculations.

Question 3

Please explain how you have escalated your complaint with the Company. Please provide your complaint ID (if you have one) and details of any correspondence attaching any relevant documentation. (Note: Ofgem expects that any dispute has been escalated through the Company's formal dispute resolution procedure and that this avenue has been exhausted prior to it being referred to Ofgem for determination.)

Complaint ID : [REDACTED]

Contact : Mr [REDACTED] and Mr [REDACTED]

Details of dispute escalation : Dispute culminated in the request to and production of a 'close down letter' from [REDACTED] and this was included in the pack associated with the original request. The close down letter was signed by Mr [REDACTED] (Director) and dated 7th June 2012.

Question 4

Please outline what you believe to be the minimum scheme for these connections. As part of your answer please specifically highlight areas of the accepted offer that you consider are part of the minimum scheme.

The original quotation for a 100kW turbine was provided by [REDACTED] as fully fundable by the client and valued at £268k. The subsequent quotation in November 2010 was for a 200kW hydro scheme and 2 load connections, was valued at £480k (an increase of approximately £213k) and, in theory, included apportioned cost associated with reinforcement of the network. In practice the whole of the costs were apportioned to the customer. The reinforcement works and associated dismantlement etc - whilst ensuring that [REDACTED] built a co-ordinated and efficient network is clearly being built and funded at the sole cost to the customer. This is unacceptable.

Clearly the alternative (within the [REDACTED] area) is to insist on numerous and multiple long service connections which are clearly being built by [REDACTED] to the detriment of the environment and the cost of the client.

I would refer you to the letter dated 29th November relating to our interpretation of the minimum cost scheme as it relates to this project. I would also refer you to the attached plan and supplementary paper.

Referring to the cost breakdown provided by [REDACTED] on 25/7/12 we would suggest that the costs are considered to be high, compared with those provided within the original quotation.

With regard to the individual items :-

3.3 /7.36 - should not be included because they refer to works that are not applicable to the new connections.

3.4/7.36 - should be included but costs are high.

4/tree cutting - have been increased since the original cost breakdown and costs are high.

5/ 2 wire dismantlement cost - should not be included whilst there is no credit given for the costs for the equipment recovered.

6/ 4 x single phase S/S mods -should not be included because they refer to works that are not applicable to the new connection.

Question 5

Please confirm the capacity of the current demand connection at [REDACTED].

The 2 existing connections to [REDACTED] (1&2) are both off separate single phase 25KVA transformers connected to a single phase 2 wire 11kV distribution. We understand that the connections will probably be rated at 100amps, single phase.

Question 6

Please confirm the demand capacity required as part of the 190kVA export connection required for [REDACTED].

The export capacity for the single hydro turbine is 190kW. By implication (and industry standard) this will be a 3 phase machine requiring a 3 phase connection.

Question 7

Please provide evidence to support your belief that the cost apportioned to your customers has been calculated incorrectly. Where possible please differentiate between where you believe that the Company's methodology been applied incorrectly and where you believe that the methodology itself is incorrect.

[REDACTED] have taken the apportionment calculations, as identified within the CCMS, and used their interpretation for the DG component that will ensure that DG customers will always pay 100% of any reinforcement costs. The Security CAF Apportionment calculations within the CCMS are quite specific and relate to both load and DG projects.

The CAF Apportionment calculation within the CCMS also relate to reinforcement occasioned by voltage drop and voltage rise issues.

With regard to the [REDACTED] projects the 'required load' (nominator) is easily identifiable in both the load and DG projects. The issue therefore relates to the

New Load following Reinforcement (the denominator) within the Security CAF, as applied (separately) to the load and DG projects.

It is our opinion that [REDACTED] has taken a stance and interpretation that is considered to be unacceptable and outside of the spirit and letter of the Charging Statement as it was originally envisaged and proposed.

Noting that we have found it extremely difficult to gain cost breakdowns, CAF calculations and circuit ratings out of [REDACTED] we can only use our best guess at costs associated with any particular items of plant.

To support this point we would also refer you to the 'close down' letter signed by Mr [REDACTED] (7th June 2012) in which he still refuses to provide the capacity of the new line, but states that :-

"The rating of the new conductor has been designed to a minimum to 'provide the required capacity only for the DG connection at the [REDACTED] development".
I, personally, consider this to be an abuse of monopoly position and I would state again that [REDACTED] has been obstructive and provocative throughout this project.

With regard to the load aspect of this determination [REDACTED] have stated that since they consider the 'driver' to be the DG aspect of the connection they consider that the load component should not receive any benefit under the existing rules and therefore refuse to apply the CAF Rules for the load component. Thus the full costs for both the DG and load elements of the 3 connections are deemed to be fully chargeable to the customers.

This is considered to be incorrect in both application and methodology.

Also, with regard to methodology the CCMS it is a concern that there is no allowance credited to a customer (within the current Charging Statement) for replacement of dismantled assets (lines, cables and equipment) or for the actual dismantlement costs even where there is a clear benefit to the DNO in the replacement of those assets due to age condition and/ or location.

Question 8

Please detail the cost you believe should be borne by both parties under what you believe to be the minimum scheme and if costs are apportioned as you believe they should be. Please provide justification to support your proposed minimum scheme and cost apportionment.

Please see associated plan and justification sheet together with the explanation provided under question 4 above.

In order to provide accurate costs and accurate cost apportionment calculations we will require additional information from [REDACTED]. Should Ofgem instruct [REDACTED] to divulge the information required we would welcome the opportunity to provide our finalised cost breakdown and CAF calculations.

Question 9

Please include any other facts relevant to the case.

As a member of the CCCF I have attempted to use my office to not only debate the issues behind the CAF Rules appertaining to the connection of DG but also

the reinforcement costs associated with 2 wire to 3 wire reinforcement. To date this has been to no avail.

■■■■■■■■■■ (and Ofgem and all of the other DNO's) are aware that there are various interpretations of the CAF Rules appertaining to distributed generation. As part of the early discussions with ■■■■ regarding these projects we forwarded examples of the methodology being utilised in ■■■■ which, essentially, are aligned with the existing CAF Rules.

■■■■ have decided that they will use their own interpretation.

Customer views on cost apportionment

Original 'stand alone' DG connection for ■■■■■ Hydro

The quotation was for 100kW of export generation, was dated November 2010 and, at the discretion of ■■■■ did not connect to the existing 2 wire line and hence did not provide any element of reinforcement. The cost was £268k; this giving a good indication of the costs without reinforcement and CAF.

Minimum Cost Scheme & Co-ordinated and economical electricity distribution system

The premise of the minimum costs scheme must be tempered with the requirement on ■■■■ to provide an efficient and co-ordinated system. The suggestion from ■■■■ that they can build multiple overhead circuits up the valley and immediately adjacent to each other (and duplicating the existing arrangement) quite simply is unacceptable and contrary to the requirements to provide an efficient and co-ordinated system.

A serious consideration must be that - potentially long 'sole use, sole funded services' running adjacent to existing lines are likely to be cheaper than lines that are reinforced with shorter services. The former, of course do not provide a 'co-ordinated and efficient electricity network.

Application Dates

- The applications for the 2 new 'load' connections for ■■■■■ and the 1 x ■■■■■ (DG) connections were made at the same time.
- The requested/required capacity is 190KW for the DG Export
- The requested/ required capacity is 2 x 100KW for the load connections

New Circuit Rating

- The new line was originally stated as being 150mm Al
- Latterly this has been revised and subsequently the new line is stated as being 100mm Al with the last few spans at 50mm.
- Within the 'closing letter' from ■■■■■ he refused to provide a new circuit rating.
- Since these will have different ratings let us assume that the correct conductor is 50mm Al and the rating is 3.7MVA

CAF Apportionment Rules

It is not possible to 'add' the capacity together to determine the total required capacity due to the inclusion of the high cost threshold for DG projects. Also this would not be acceptable from the client's point of view. Therefore the ONLY way forward is to separate out the costs and undertake separate CAF calculations for the segregated load and export connections.

However, to simplify the project cost calculations it may be acceptable to derive the costs for the minimum cost scheme and (in this case) half those costs based on 190KW export and 200kW load .

The next issues with the CAF Rules as they stand at this time is that :-
 Whilst originating from within the Common Charging Statement actually they are being interpreted differently within the DNO community .
 For DG connections there is the added financial disadvantage in that CAF calculation requires the inclusion/application of both :

- the high cost DG factor and
- the O&M factor

both increase the capital costs to DG developers.

Generation Connection (200kva)

Total cost for project as per original quotation £480,000 (**Not accepted**)
 Assume £300k for load connection and an additional £180k for generation connection.

Assume new circuit rating of 'x' 3wCu = 6MVA (?)

| Ref | Item | Description | Estimated S16 Quote |
|------------|--|--|----------------------------|
| 1 | 11kv Non Contestable (Sole Use) | 1 x 200kva Pole mounted S/S LV U/G Service | 20,000 |
| 1a | Non-Contestables - PoC, Design, Witness Test etc | | 11,000 |
| 2 | 11kv Non Contestable Reinforcement works | Rebuild / Reconstruct 65 spans 11kv O/H line @ £6k /span (additional over and above load connection costs) | 180,000 |
| 3 | | Total Cost of Reinforcement Works | 180,000 |
| 4 | | Generation (Capped for Apportionment at £200/kW) | 40,000 |
| 5 | | Apportioned Sum- Customers Contribution $200/6000 * £40000k$ | 1333 |
| 6 | | Apportioned Sum - ■ Contribution (40000-1333) | 38667 |
| 7 | | Reinforcement Costs in | 140000 |

| | | | |
|----|-----------------------------|---|---------|
| | | excess of High Cost threshold (3-4) | |
| 8 | | Generation Costs subject to HCT [plus 20% O&M as per 5.15 CCMS] | 168,000 |
| 9 | 11kv Final Connection | Inc in 2 above | |
| 10 | 11kv Dismantlement | Inc in 2 above | |
| | | | |
| | | | |
| 11 | Total Customer Contribution | 1+1a+5+8 | 200,333 |

5.25 The 'Security CAF' is applied, where the costs are driven by either thermal capacity or voltage (or both) as assessed against the relevant standard. This rule determines the proportion of the Reinforcement costs that should be paid by you as detailed below.

$$\text{Security CAF} = \frac{\text{Required Network Capacity}}{\text{New Network Capacity following Reinforcement}}$$

Load Connection (2 x 100kva)

Total cost for project as per original quotation £480,000 (Not accepted)
 Assume £300k for load connection and an additional £180k for generation connection.

Assume new circuit rating of 32mm 3wCu = 3MVA (?)

| Ref | Item | Description | Estimated S16 Quote |
|------------|--|--|----------------------------|
| 1 | 11kv Non Contestable (Sole Use) | 2 x 100kva Pole mounted S/S's LV U/G Services | 60,000 |
| 1a | Non-Contestables - PoC, Design, Witness Test etc | | 11,000 |
| 2 | 11kv Non Contestable Reinforcement works | Rebuild / Reconstruct 65 spans 11kv O/H line @ £6k /span | 229,000 |
| 3 | | Total Cost of Reinforcement Works | 229,000 |
| 4 | | Generation (Capped for Apportionment at £200/kW) | N/A |
| 5 | | Apportioned Sum-Customers Contribution 200/3000*£229k | £15,266 |
| 6 | | Apportioned Sum - SP | 213,734 |

| | | | |
|----|-----------------------------|--|--------|
| | | Contribution (229000 - 15,266) | |
| 7 | | Generation Costs in excess of High Cost threshold (3-4) | N/A |
| 8 | | Generation Costs subject to HCT [plus 20%O&M as per 6.26 CCMS] | N/A |
| 9 | 11kv Final Connection | Inc in 2 above | |
| 10 | 11kv Dismantlement | Inc in 2 above | |
| | | | |
| | | | |
| 13 | Total Customer Contribution | 1+1a+ 5 | 86,266 |

5.25 The 'Security CAF' is applied, where the costs are driven by either thermal capacity or voltage (or both) as assessed against the relevant standard. This rule determines the proportion of the Reinforcement costs that should be paid by you as detailed below.

$$\text{Security CAF} = \frac{\text{Required Network Capacity}}{\text{New Network Capacity following Reinforcement}}$$

Email chain regarding tree felling costs - [REDACTED]

Ofgem email - 05/06/2013

During the oral hearing it was noted that the costs for tree cutting increased when the Company provided a breakdown of costs. We also noted that you may have been able to complete the works yourselves and that the Company would provide a credit in that case. I was hoping if you could confirm whether or not the costs for tree cutting are still a point of dispute.

[REDACTED] response - 05/06/2013

We carried out all the tree felling on [REDACTED] ourselves which I would say is circa half of the felling required for the whole project. We still believe that the cost attributed to tree felling on other properties is excessive.

APPENDIX TWO – Company’s evidence

Statement of facts

1. Please explain exactly what is in dispute in this case, attaching any relevant paperwork to back up your argument.

This dispute concerns the application of a charge for reinforcement by [REDACTED] [REDACTED] ([REDACTED]) to facilitate a connection of Distributed Generation (DG) and additional load at [REDACTED]. The DG export capacity required is 190 kW and the additional load amounts to 2 X 100 kW supplies.

The specific points in dispute are as follows:

- a) Minimum Scheme / requirement to develop an economic system - the initial correspondence provided by [REDACTED] ([REDACTED] and [REDACTED]) identified that the minimum scheme solution to provide the required connection of 110kW DG export capacity would necessitate the construction of a dedicated and new OHL 11kV circuit which would connect into the existing distribution system at pole 6 at [REDACTED] [REDACTED] (drawing No. 2) POC=[REDACTED]. This solution was ultimately rejected as a viable solution for the formal quotation [REDACTED] as a result of landowner consenting difficulties.
- b) [REDACTED] considers that only the DG element of this connection project should be considered to be subject to the Cost Apportionment Factor (CAF) rules. [REDACTED]’s rationale for this is that the fundamental driver for the reinforcement is the DG connection. If the connection was required solely for the purposes of connecting the requested load, the design and costs of the resultant reinforcement would be reduced.
- c) [REDACTED] calculation of the DG CAF is based on the following logic: (i) the reinforcement has been sized to fit the requested export capacity of the connecting DG; (ii) in this circumstance voltage rise constraints dictate that following completion of the reinforcement works only 190kW of DG can be accepted at the POC; and (iii) there is no other

existing DG connected within the Relevant Section of the Network. As a result of these factors, the CAF has been determined to be as follows:

$$\text{CAF} = \frac{\text{Required Capacity}}{\text{New Network Capacity}} \times 100\%$$

$$\text{CAF} = \frac{190}{190} \times 100\%$$

$$= 100\%$$

Therefore and in accordance with the Common Connection Charging Methodology, ■ considers that the customer should pay the full cost of the reinforcement works.

■ recognises however that the treatment of voltage change in the Common Connection Charging Methodology is not expressly clear. For example the definition of 'New Network Capacity' refers to voltage drop rather than voltage rise. ■ notes and supports the ongoing work being progressed within the ENA Connections COG and the Common Connection Charging Methodology Forum on this matter. Nevertheless, ■ considers that its treatment of voltage rise is consistent with the principles of the existing methodology, highlighting that the New Network Capacity is fully utilised by the customer. In addition, due to the reinforcement costs exceeding the threshold of £200 per kW applicable in respect of DG connections (CCM, paragraph 5.15), the costs in excess of this level have been charged in full to the customer.

d) The Question of Betterment - The customer's representative has suggested that the existing 11 kV line is already more than 60 years old and that some credit should have been given in recognition of avoided replacement costs. In line with its policy ■ is satisfied that the existing line is fit for purpose and there are no current plans to rebuild it. However, in recent months the single phase line in question has been subject to plans for some light refurbishment work identified during inspection to remove some minor defects. There is no definite

timescale for the completion of these works and as a result they have not yet been formally costed.

2. Where applicable, please provide a description of the works this dispute relates to attaching any relevant paperwork.

Please refer to Appendix 1 which comprises 6 detailed drawings showing the works to be carried out together with 2 overview diagrams.

A point of connection will be provided from pole 12 (drawing No. 1) on the existing 3-phase main 11kV overhead line (OHL) that is fed from [REDACTED] primary substation on circuit 22. Seven spans of the existing single phase 11kV OHL that comes from pole 12 and feeds [REDACTED], will be upgraded to 3-phase 50mm sq conductor. A new 3-phase 11kV 100mm sq conductor will be connected to existing pole 6 at [REDACTED] (drawing No. 2) and proceed up the valley to new pole 67 (drawing No 5), where it then feeds a new two span section of 11kV 50mm sq conductor that supplies a 200kVA pole mounted transformer. This in turn supplies the 400V LV import/export connection for the new DG connection ([REDACTED]) and a new seven span section of 11kV 50mm sq conductor that supplies a 200kVA pole mounted transformer. This in turn supplies the 400V LV import connection for [REDACTED] ([REDACTED]).

The new section of 3-phase 11kV conductor that will be connected to existing pole 6 at [REDACTED] and proceeds up the valley to new pole 67, will be connected to the existing single phase network at the following points to supply all the existing customers that were originally fed from the single phase network that will be removed:

1. A new two span section of 11kV single phase OHL to supply existing customer at [REDACTED] ([REDACTED]) from new pole 5. (drawing No. 2)
2. A new span of 11kV single phase OHL to supply existing customer at [REDACTED] [REDACTED] from new pole 28. (drawing No. 3)
3. Extend existing 400V LV OHL to supply existing customer at [REDACTED] [REDACTED] ([REDACTED]) from new pole 30. (drawing No. 3)

4. Extend existing 400V LV OHL to supply existing customer at [REDACTED] [REDACTED] from new pole 34. (drawing No. 3)
5. A new two span section of 11kV single phase OHL to supply existing customers between existing pole 40 ([REDACTED] [REDACTED]) and existing pole 22 ([REDACTED] [REDACTED]) from new pole 44. This proposed connection point at pole 44 cannot be utilised due to the discovery of nesting badgers in this area, we are currently awaiting the results of a new overhead line survey which will indicate the new connection point. (drawing No. 4)
6. Extend existing 400V LV to supply existing customer at [REDACTED] ([REDACTED]) from new pole 64. (drawing No. 4)

We will be removing twenty four spans of existing 11kV single phase OHL 0.025" Cu conductor from existing pole 5 at [REDACTED] to existing pole 22 at [REDACTED] inclusive of the two spans to [REDACTED]. We will also be removing forty seven spans of existing 11kV single phase OHL from existing pole 17 at [REDACTED] to existing pole 68 at [REDACTED]

These works are shown diagrammatically within Appendix 1 - Proposed route drawings.

3. Please provide full details of the current and proposed network configuration including attaching relevant electrical single line diagrams and geographic maps or diagrams.

See attached supporting documentation (Appendix 2) for copies of the current and proposed electrical single line and Appendix 1 containing geographic maps and diagrams.

4. Please provide full details of the loads and generators to be connected.

After a number of iterations (as detailed within the timeline presented in Appendix 3), the customer has requested a distributed generator connection with a maximum export to the DNO's network of 190kW at 0.95 Lead to 0.95 Lag, inclusive of a small 3-phase turbine house load connection (assumed to be in the region of 10kVA) at [REDACTED].

The customer has also requested two separate load connection upgrades from single phase to 3-phase with a maximum import of 100kVA (145A/phase at 400V).

5. Please provide details and a breakdown of the quote you provided to the Customers, attaching any relevant documentation or correspondence

We enclose a copy of our formal quotation letter dated 3th November 2011 and corresponding signed acceptance and supporting letter from [REDACTED] [REDACTED] (Appendix 4).

The following breakdown was provided to [REDACTED] on 26 July 2012 in the format that he requested.

| CCCM Ref | Description | Quantity | Costs |
|-----------------|-----------------------------------|-----------------|-----------------|
| 7.13 | Assessment & Design Approval Fees | 1 | £5,000 |
| 7.39 | Wayleave & Survey Fees | n/a | £10,210 |
| 7.36 | HV PTE Outage works | 1 | £3,170 |
| 7.36 | Other LV UG works | 1 | £2,731 |
| 7.36 | LV OHL works | 1 | £3,924 |
| 7.36 | HV OHL Outage works | 1 | £16,661 |
| | Tree Cutting Costs | 1 | £15,180 |
| | 2-wire 11kV Dismantlement costs | 5,600m | £35,019 |
| | 4 x single phase S/S mods | 4 | £21,453 |
| 7.31 | Spans of 3-wire 11kV new build | 80 | £330,159 |
| 7.33 | [REDACTED] Generation 200kva S/S | 1 | £8,830 |
| 7.27 | [REDACTED] Generation Service | 35m UG | £4,198 |
| 7.33 | [REDACTED] 100kva S/S | 1 | £7,488 |
| 7.27 | [REDACTED] Service | 15m UG | £2,797 |
| 7.33 | [REDACTED] 100kva S/S | 1 | £7,488 |
| 7.27 | [REDACTED] Service | 75m UG | £5,399 |
| 7.40 | Generation Commissioning | 1 | £784 |
| | | | £480,491 |

6. Please describe and explain the cost apportionment calculation that was used when determining the cost to be charged to the customer. Please provide justification for applying the cost apportionment factor in this way.

The cost apportionment was calculated in accordance with the principles laid down within the Connection Charging Methodology.

The following charges relate to Reinforcement, the costs of which are apportioned between ■ and the customer: £385,729.

HIGH COST PROJECT THRESHOLD - £200/kW

Paragraph 5.15 of the Connection Charging Methodology states that, for generation connections, Reinforcement costs in excess of the high-cost project threshold of £200/kW should be charged in full to the customer. It follows therefore that, of the total Reinforcement costs, only £38,000 (200x190) is capable of being apportioned. The remainder (£347,729) is payable by the customer in full.

COSTS TO BE APPORTIONED

Paragraphs 5.16 to 5.28 of the Connection Charging Methodology deal with those costs (Reinforcement costs) which are apportioned between ■ and the customer.

The Reinforcement costs are apportioned using one of two Cost Apportionment Factors (CAFs) depending on the factor driving the requirement for Reinforcement. In this instance voltage rise issues are the driver and on that basis the Security CAF has been used to determine the appropriate apportionment as follows:

$$\text{CAF} = \frac{\text{REQUIRED CAPACITY}}{\text{NEW NETWORK CAPACITY}} \times 100\%$$

$$\text{CAF} = \frac{190 \text{ KW}}{190 \text{ KW}^*} \times 100\%$$

$$\text{CAF} = 100\%$$

* Voltage rise constraints dictate that only 190kW of generation export can be accepted at the point of connection. As there is no existing generation

connected within the Relevant Section of the Network it was determined that the New Network Capacity following completion of the works is 190kW. As the Required Capacity is equal to the New Network Capacity it follows that the customer is required to pay 100% of the costs of Reinforcement.

In accordance with the Connection Charging Methodology the costs of providing the Extension Assets (to connect the customer's generation and load requirements) have been charged in full to the customer.

7. Please provide details of the connection options considered and evidence that the minimum scheme was selected.

A number of connection options were considered in relation to this scheme that culminated in the quotation (██████████) issued on 3 November 2011. A feasibility study (██████████) was issued on 12/07/11 for the new 11kV OHL to be built as an on-line upgrade from single phase to 3-phase to enable the connection of a 110kW hydro generator at the required location. At the request of Mr ██████████ at a meeting on 22/8/11, both on-line and off-line options were presented and issued to Mr ██████████ on 6/9/11. In summary the on-line option was costed at £532k and the off-line option at £367k. Upon confirmation from Mr ██████████ that the proposed off-line build was the most cost effective solution and that the proposed route was acceptable in principle to all the local landowners (new local landowners agreed route map was sent to ██████████ on 21/09/11) a formal application was received on 20/9/11 (ref ██████████). ██████████, the applicant, provided ██████████ with an application for the connection of an 180kW hydro generator at the required location. The requisite modelling study confirmed that a new design was required for the off-line build to accommodate the 180kW requested. This new design confirmed that a 100mm sq conductor was required to accommodate the voltage rise. It was then established that the new design incorporating 100mm sq conductor could cater for a generation connection of 190kW and that the off-line build solution was still the most cost effective. This was verbally communicated with Mr ██████████ and he confirmed that the formal quotation should be issued based on a generation connection of 190kW.

In addition, [REDACTED] have also considered designing the new scheme with the inclusion of an AVR to try and reduce the volt rise caused by the generator. The AVR design would work in reducing the volt rise caused by the generator and to do this it would have to be installed at a point 3.8km along the new OHL route. Although the introduction of the AVR would work the cost is considerably more expensive than the formal quotation offered as the minimum scheme under [REDACTED]. The inclusion of an AVR within this design would add a cost in the region of £120k, whereas the saving in reducing the size of the proposed conductor (100mm sq to 50mm sq) would only be £75k.

8. Please provide a cost breakdown for the full cost of the proposed minimum scheme.

Please see cost breakdown contained within question 5.

Email chain regarding renewal of transformers – [REDACTED]

Ofgem email - 16/05/2013

Can you provide some information on what will happen or what has happened to the four pole mounted substations that were being modified along the route?

[REDACTED] response - 22/05/2013

I understand that small secondary transformers of this type that were replaced as part of the works required by the connection would have been taken to a depot for temporary storage prior to subsequent disposal.

Ofgem email - 28/05/2013

1. What is the age of the replaced transformers?
2. What Health Indices do they transformers have and what is the normal expected life of these assets?
3. If these assets were not at the end of their life, why are you not going to re-use them?
4. If it was due to off-supply times for the four customers, please could you state what the different off-supply times would be for:
 - a. The use of new transformers
 - b. Reusing the existing transformers and associated kit
5. We understand you have used new transformers and that the existing have been removed prior to disposal. Please confirm what you mean by disposal. Will they get reused permanently, kept as spares/standby or scrapped?

[REDACTED] response - 03/06/2013

1. What is the age of the replaced transformers?

The ages of these transformers are not recorded on our systems, but are likely to be in the region of 30-40 years old.

2. What Health Indices do they transformers have and what is the normal expected life of these assets?

We do not apply a Health Index methodology for these assets. The general life expectancy for this type of asset would be in the region of 40 years, but replacement would normally depend on visual assessment of condition.

3. If these assets were not at the end of their life, why are you not going to re-use them?

Experience has shown that the re-use of this type of small single phase transformer can be problematic. If we were to try and re-use these transformers on the day of the actual outage, we would possibly encounter the following problems:

1. By disturbing both the electrical and mechanical connections/fixings, they may fail and the transformer would then be unusable.

2. Extra time and effort would be involved in the careful removal of this type of transformer.
 3. There would be a high risk of sediment disturbance within the transformer oil tank, due to the removal and re-erection process, which may also make the transformer unusable. As a result the customer would be off-supply for the time period required to source another suitable transformer, transport it to site, install, commission and make live. At additional cost, a diesel generator could be used to maintain the supply to the customer in the event of an extended period before a replacement transformer was installed.
4. If it was due to off-supply times for the four customers, please could you state what the different off-supply times would be for:
- a. The use of new transformers: Three of the new transformers were changed over as part of the first major [REDACTED] outage (1 day) and the remaining new transformer was changed over as part of the second major [REDACTED] outage (1 day).
 - b. Reusing the existing transformers and associated kit: Please see our response to question 3 above.
5. We understand you have used new transformers and that the existing have been removed prior to disposal. Please confirm what you mean by disposal. Will they get reused permanently, kept as spares/standby or scrapped?

They would be scrapped.

APPENDIX THREE

Note from the oral hearing, held 23 January 2013

Oral hearing - [REDACTED] (the customer) and [REDACTED] (the company)

| | | |
|---|--------------------------|---------------------------|
| Brief summary of the proceedings of an oral hearing requested by the customer | From | [REDACTED] |
| | Date and time of Meeting | 23 January 2013 1400-1615 |
| | Location | Ofgem, Glasgow |

1. Present

| | |
|------------|-----------------------------|
| [REDACTED] | Customer |
| [REDACTED] | Customer |
| [REDACTED] | Customer's agent |
| [REDACTED] | Company |
| [REDACTED] | Company |
| [REDACTED] | Decision-Maker |
| [REDACTED] | Legal support |
| [REDACTED] | Policy support |
| [REDACTED] | Technical support |
| [REDACTED] | Policy support |
| [REDACTED] | Case officer and note taker |

- 1.1. Ofgem ([REDACTED]) provided an introduction to the process and order of proceedings. Parties were informed that this was a forum in which they could verbally explain their cases but it was not expected to be an opportunity to introduce evidence not previously submitted.
- 1.2. Apologies were made by [REDACTED] for not being able to chair the hearing in person in Glasgow due to the impact of the weather on travel.
- 1.3. Parties were informed that if at any point they were unable to clearly hear one another they should inform the Decision-Maker.
- 1.4. All parties present introduced themselves and explained their roles in the determination.

2. Customer's statement

- 2.1. The customer outlined the various elements of their complaint. The dispute relates to an offer from the company, dated 3 November 2011, to connect two load connections and one generation connection at [REDACTED].
- 2.2. The customer considers that the offer to make these connections is not the minimum cost scheme and that the costs have not been apportioned correctly.

- 2.3. They stated that the current Cost Apportionment Factor (CAF) rules, as they relate to distributed generation (DG), are interpreted differently by different Distribution Network Operators (DNOs). They stated that this issue is being looked at by the Commercial Operations Group (COG) and the Common Connection Charging Methodology Forum.
- 2.4. The customer stated that four DNOs use the thermal rating of the reinforced line as the denominator when applying the CAF. The customer also stated that the company's use of voltage as the denominator was contrary to wording of the Common Connection Charging Methodology (CCCM), which does not refer to voltage rise. They explained that in certain situations involving DG, such as in this case, applying the CAF in this manner would result in the customer paying 100% of the cost of reinforcement.
- 2.5. The customer explained that they believe the two load connections should receive some credit under the CAF.
- 2.6. The customer stated that this interpretation of the rules was counter to the intent when they were formulated. The customer believes that this interpretation of the rules will disincentivise the connection of DG.
- 2.7. The customer explained that they also dispute the design of the minimum scheme proposed by the company. The customer indicated that they provided an alternate route along with their written statement of facts.
- 2.8. The customer also disputes some of the cost items included in the proposed minimum cost scheme. The customer considers that it should not be charged for the dismantlement of existing assets whilst receiving no credit for scrap value or being charged for the replacement of four pole mounted transformers. The customer also disputes the amount being charged for tree cutting whilst commenting that this amount increased in the detailed cost breakdown provided by the company.
- 2.9. The customer disputes the inclusion of an operation and maintenance charge.
- 2.10. The customer also disagrees that this scheme comes under the high cost threshold of £200/kW. The customer stated that if the total reinforcement costs (DG and demand) were to be treated under the CAF Apportionment for distributed generation then, by inference, the 'high cost threshold clause' would be applied to that part of the works that were occasioned by the demand works/costs. The customer also stated this would be contrary to the application of the CCMS Rules.
- 2.11. The customer also noted that they had experienced some difficulties dealing with the company, in obtaining a cost break down that could be analysed under section seven of the CCCM and a figure for the thermal rating of the reinforced line.
- 2.12. The customer stated that as a more general point, it did not appear fair to require them to pay all of the costs of connection that arise from the company replacing an ageing piece of infrastructure that would be owned by

the company and used by the company's other customers. The customer stated that they were happy to pay a proportion of the costs.

Response to questions posed by Ofgem prior to/during the hearing

1. In advance of the hearing, the customer provided a cost breakdown for the costs which they consider are associated with the minimum scheme, as apportioned in the way they consider appropriate. The customer takes the view that they should pay £232,567 of the costs⁸.
2. The customer explained that the connections can be made simultaneously and that the sites and contractors are ready to receive the connection. As the civil works have already been completed the customer is eager for the connection to be made. The original date for connection was 15 October 2012.

Does the customer consider that the company's approach is not consistent with their CCCM?

3. The customer stated that the company's interpretation is inconsistent with that of some other DNOs. Additionally, as voltage rise is not explicitly mentioned in the CCCM, the company should not take it into account when apportioning costs.

Can the customer clarify if they are disputing the assets proposed by the company or the costs applied to the customer as part of the proposed minimum scheme?

4. The customer responded that they were disputing both.

3. Company's statement

- 3.1. The company explained that they are aware of the debate in relation to apportionment and DG that is ongoing in industry forums. The company believe that they are applying the rules as they stand, although they recognise that the CCCM is not explicit in the treatment of voltage rise. However, the company pointed out that it is implicit in terms of the security of supply and other standards to be taken into account in assessing secure network capacity, that are referenced in the definition of "New Network Capacity" in the CCCM
- 3.2. The company believe they have provided the customer with an offer that represents the minimum cost scheme. They stated that a number of alternatives were considered, including a new sole use asset. This was not a viable solution due to difficulties with obtaining land rights for the new line. The use of an automatic voltage regulator was also considered but its use would be more expensive than the current connection offer.
- 3.3. The company stated that the driver for reinforcement is the generation connection. A lighter construction would be used to accommodate the demand connections alone. The company explained that the proposed

⁸ This detailed breakdown has been provided to the company for comment following the hearing.

connection offer had been sized to fit the 190kW required by the generation connection. The company said that the maximum demand capacity of the new line was 3.2MW. They also explained that further generation could not be connected unless additional demand was subsequently connected. If future applications for connection were received that made use of this capacity then the Electricity (Connections Charges) Regulations 2002 (ECCR) would apply under paragraph 5.35 of the CCCM. This would result in a rebate for the customer.

- 3.4. The company explained that as the reinforcement costs to accommodate the requested DG export capacity were in excess of the high-cost project threshold of £200/kW, the customer is liable to pay the excess costs as part of the connection charge. The company also explained that where the costs of reinforcement are driven by thermal capacity or voltage then the 'Security CAF' will be applied. As the required DG export capacity and the new network available DG capacity are both 190kW, the costs of reinforcement are all apportioned to the customer.
- 3.5. The company explained that under the CCCM there is no credit for the value of equipment recovered as part of a connection and there is no credit for the value of any deferment of asset renewal.
- 3.6. The company said that the current line is fit for purpose, although it may undergo some light refurbishment in association with the planned rebuild of the main line, was built in the 1960s, and that pending those works it would replace assets on such spur lines in the event of failure..
- 3.7. The company concluded by saying that they understand the customer's concerns but they have provided the minimum cost scheme, charges have been levied in accordance with the CCCM and that the ECCR will apply in this instance.

Response to questions posed by Ofoem prior to the hearing/during the hearing

1. The existing network is currently single phase and the DG and demand connections require a three-phase connection.
2. The thermal rating for the reinforced section of line is 3.2MW (based on the summer rating of the line).

If the current policy is to replace on failure, does that mean the assets on the spur line must have stopped working before replacement?

3. The company answered yes, this could be the case as a result of tree fall etc. Additionally the line would be replaced if customers reported problems and it was identified that the line was not fit for purpose.

What was the nature of the discussion with local landowners that led to the original offer being dismissed?

4. The company responded that the customer informed ■ that local landowners were against the idea of two overhead lines in the valley.

Please confirm that ECCR will apply for future demand connections and apply to further DG, if new demand connections made.

5. The company confirmed that the ECCR could apply for future demand connections. Further reinforcement would be required to connect new DG schemes to the network unless new load connections were made.

As generation is the driver for reinforcement, could the existing network supply the requested load?

6. The company responded that in principle the thermal capacity was sufficient for the requested load. However, as a three-phase connection has been requested a new line was required.

Was voltage control at the customer site considered and if not, why?

7. The company responded that it had not considered this at the time. However, it believed that a smaller conductor with active voltage control at the customer site would not have been viable due to the low existing load on the network.

As the CCCM does not explicitly refer to voltage rise, can you expand on why you have included it.

8. The company responded that the definition of new network capacity (NNC) in the CCCM gives a list of relevant factors to be taken into account in assessing secure capacity that implicitly includes voltage rise (for example design and security of supply policies) and as such it should be included when deciding the NNC.

Can you provide the Health Index of the section of line that will be replaced?

9. The company responded that they would respond to this question in writing following the hearing.

4. Break

5. Customer's comments

- 5.1. The customer disagrees that the minimum scheme has been provided.
- 5.2. The customer does not accept that the generation connection is the sole driver for reinforcement.
- 5.3. The customer agrees with the costs charged under the company's interpretation of the CAF but do not agree that it is the correct interpretation

as other DNOs have a different interpretation and this was not the policy intent of the rules.

- 5.4. The customer disagrees with the company's observation that the line was from 1960s and stated that many poles in fact date from 1950s.
- 5.5. The customer was not aware that the company had considered a voltage regulator.
- 5.6. The customer does not accept that the thermal rating of the new line is 3.2MW. The customer believes that the thermal rating is 3.7MW.
- 5.7. The customer believes that as a result of the company's approach, DG projects would always be over the £200/kW threshold. The customer stated that this threshold was disadvantageous to DG customers.
- 5.8. The customer stated that they are fully prepared to pay part of the connection charge but it considered it unfair for it to be required to pay all of it.

6. ■ comments on customer statement

- 6.1. The company stated that they understand the customer's position and appreciate that the costs are high in relation to the DG output.
- 6.2. The company explained that they have striven to abide by the rules as they stand, that the schemes proposed were designed to meet the customer's requirements by means of the Minimum Scheme at least overall capital cost and that they have always abided by the CCCM. The company also stated that they must keep the voltage within statutory limits.
- 6.3. The company does not consider it likely that the four DNOs which the customer referred to would use thermal capacity for their CAF calculations for DG connections regardless of circumstances.
- 6.4. The company stated that they have an obligation to provide the minimum cost scheme overall to meet their obligations to both connecting and connected customers. The company commented that if a larger conductor had been installed, costs would have been apportioned but this would not represent the minimum cost scheme.
- 6.5. The company also commented that the denominator and numerator in the CAF calculation would not necessarily always be the same, and that it just happened in this case that the two were the same. In certain circumstances the least cost scheme would allow further DG customers to connect and costs would be apportioned accordingly.

7. Ofgem further clarifications

Do references to substations in fact mean pole mounted transformers?

- 7.1. The company confirmed that that is correct, and that they are referred to as Pole Top Equipment (PTE) by the company.

Can you explain why the four new substations are needed and why the existing transformers cannot be connected?

7.2. The company indicated that they would like to respond to this question in writing.

Is there any possibility of using an alternate route?

7.3. The company indicated that this was possible and that they would respond to this question in writing.

Company response to questions posed on 24 January 2013 following the oral hearing

1. *Comments on the Customer's Agent's interpretation of how the costs should be apportioned*

For both load and generation [REDACTED] has applied an apportionment factor based on his view of the load capacity of the new line following reinforcement (3.7 MVA). He has also split the costs of the reinforcement works 50/50 between demand and generation, with no explanation as to why this should apply, and despite the reinforcement being driven by the generation requirements. In addition, he has excluded costs associated with the required works for other customers that he considers to be not relevant to the Customer's connection.

Our comments on these points are as follows

- I. [REDACTED] has used a thermal capacity of 3.7 MVA. We do not agree with this figure as the thermal rating used as the denominator in any apportionment calculation for load connections should be the minimum rating of the assets upstream of the connection requested. In this case the minimum rating of the assets between the connection and the Primary substation is 50mm² AAAC conductor that has a summer rating of 3.2MVA. The winter rating of this conductor is 3.9MVA.
- II. Apportionment of reinforcement costs 50/50 between generation and demand

We do not agree with [REDACTED] assumed 50/50 split of reinforcement costs between generation and demand. As we have pointed out in our previous submission, the reinforcement costs of this project are driven by the generation requirements, and there is therefore no justification for splitting the reinforcement costs in this way. In addition, this assumed split serves to inappropriately reduce the impact of the full cost charging for reinforcement relating to DG connections prescribed by the common connection charging methodology.

- III. Zero apportionment of costs to modify other customers' installations

These works are necessitated by the proposed scheme and as such they are part of the works for which a connection charge is appropriate. [REDACTED] has also assumed that the section of existing single phase overhead line serving these customers is retained, contrary to the clear understanding of the customer and ourselves that land rights would not be forthcoming if there were multiple HV overhead lines following completion of the works.

- IV. "Who pays?"

In addition, we think that it should be borne in mind that the Customer's view of how the reinforcement costs should be allocated would lead to a

significant proportion of of these costs being met by other connected customers, despite these costs being driven by the Customer's DG requirements, with no additional capacity created for other DG exports on this line.

2. Comments on other DNOs' interpretation of the charging methodology (cost apportionment factor for reinforcement to deal with voltage rise for a DG connection).

Paragraph 5.25 of the CCCM refers to the application of the Security CAF "where the costs are driven by either thermal capacity or voltage (or both) as assessed against the relevant standard". In our view this, together with compliance with planning and other standards referenced in the definition of New Network Capacity, is consistent with applying generation capacity in both the numerator and denominator of the apportionment calculation where (as in this case) it is voltage rise that is driving the reinforcement needed.

In addition, paragraph 5.15 states that for generation connections, reinforcement costs in excess of the high cost project threshold of £200/kW is chargeable in full as part of the connection charge.

3. Health Index rating for sections of line to be replaced.

We have not yet completed our assessment and will respond to this question by 6 February.

4. Justification for replacement of modification of the four substations/transformers that will be replaced as part of this connection offer.

In order to provide surety of supplies to other existing customers, reduce the risk of damage to equipment in removing the substations from the existing line and then reinstalling on the new line, the works in the connection offer included installation of 4 new pole mounted transformers (substations) and associated equipment at those locations.

5. Comments on the route suggested by the customer's agent and why ■■■'s proposed route is the minimum scheme.

■■■'s proposed route was itself based on the route proposed by the customer on 21 September 2011 following a meeting with him on 22 August 2011. The customer asked ■■■ to base its design on his overhead line drawings (attached to this note) which took into account the customer's understanding of the views of local landowners, including that there should be only one HV overhead line remaining in the valley upon completion of works. ■■■'s re-design included some minor adjustments to the route for a more effective electrical infrastructure solution, and the revised drawings were sent to the customer on 27 October 2011, shortly before the formal connection quotation issued on 3 November 2011.

As set out in the original submission, this project evolved over a period of some 2 years, and ■■■ has consistently endeavoured to provide a least cost solution within the constraints of the customer's requirements and other relevant factors such as wayleaves, as set out in out in more detail in the original submission.

In our view, the main drawback of the customer's proposed route is that it retains the existing HV overhead lines serving existing customers A, B, C and D, despite confirmation that the landowners concerned did not want multiple HV overhead lines. As explained above, the customers' proposed route of September 2011 was designed to negate the need for multiple HV overhead lines.

Customers' comments (in red) on Company responses

1. Comments on the Customer's Agent's interpretation of how the costs should be apportioned

For both load and generation [REDACTED] has applied an apportionment factor based on his view of the load capacity of the new line following reinforcement (3.7 MVA). He has also split the costs of the reinforcement works 50/50 between demand and generation, with no explanation as to why this should apply, and despite the reinforcement being driven by the generation requirements. In addition, he has excluded costs associated with the required works for other customers that he considers to be not relevant to the Customer's connection.

1. We would remind Ofgem that [REDACTED] refused to provide the ratings and therefore we used generic information. We are happy with that generic information.
2. We have used a 50/50 split based on demand and generation capacity; as they were requested. We would also stress that both the fish farming and hydro-electric generation businesses are in need of the upgrade works. Indeed, a three phase connection quote was applied for in relation to the fish farm businesses circa 10 years ago (copy correspondence can be provided if required).

Our comments on these points are as follows

- V. [REDACTED] has used a thermal capacity of 3.7 MVA. We do not agree with this figure as the thermal rating used as the denominator in any apportionment calculation for load connections should be the minimum rating of the assets upstream of the connection requested. In this case the minimum rating of the assets between the connection and the Primary substation is 50mm² AAAC conductor that has a summer rating of 3.2MVA. The winter rating of this conductor is 3.9MVA. See 1 above.
- VI. Apportionment of reinforcement costs 50/50 between generation and demand

We do not agree with [REDACTED] assumed 50/50 split of reinforcement costs between generation and demand. As we have pointed out in our previous submission, the reinforcement costs of this project are driven by the generation requirements, and there is therefore no justification for splitting the reinforcement costs in this way. In addition, this assumed split serves to inappropriately reduce the impact of the full cost charging for reinforcement relating to DG connections prescribed by the common connection charging methodology.
See 2 above
- VII. Zero apportionment of costs to modify other customers' installations

These works are necessitated by the proposed scheme and as such they are part of the works for which a connection charge is appropriate. [REDACTED] has also assumed that the section of existing single phase overhead line serving these customers is retained, contrary to the clear understanding of the customer and ourselves that land rights would not be forthcoming if there were multiple HV overhead lines following completion of the works.

1. There is no justification for charging [REDACTED] for undertaking works that are of no relevance to the main [REDACTED] schemes.
2. Whilst the customer accepted that the concept that '2 lines' are neither reasonable or acceptable we do not accept that all of the dismantlement cost (for facilitating an economic and efficient distribution network) should be recharged to the customer.
3. At no time did [REDACTED] refer back to the customer with a cheaper scheme (as suggested by [REDACTED]). It is accepted by the customer that routes were discussed and we believe that it was thereafter incumbent on [REDACTED] to revert to the customer to refine the route and define the minimum cost scheme.
4. We would again emphasise that we do not have a problem with [REDACTED] undertaking any additional work on their circuits but AT THEIR COST.

VIII. "Who pays?"

In addition, we think that it should be borne in mind that the Customer's view of how the reinforcement costs should be allocated would lead to a significant proportion of these costs being met by other connected customers, despite these costs being driven by the Customer's DG requirements, with no additional capacity created for other DG exports on this line.

1. We would suggest that the costs would be apportioned in the manner approved by the Common Charging Methodology Statement.
2. Reinforcement (demand and generation) costs would be calculated and reside exactly where the CCMS has ruled that they should be allocated.
3. We would remind Ofgem that [REDACTED] have chosen a different approach to the treatment of generation charges than most of the other DNO's.

2. Comments on other DNOs' interpretation of the charging methodology (cost apportionment factor for reinforcement to deal with voltage rise for a DG connection).

Paragraph 5.25 of the CCCM refers to the application of the Security CAF "where the costs are driven by either thermal capacity or voltage (or both) as assessed against the relevant standard". In our view this, together with compliance with planning and other standards referenced in the definition of New Network Capacity, is consistent with applying generation capacity in both the numerator and denominator of the apportionment calculation where (as in this case) it is voltage rise that is driving the reinforcement needed.

As stated, this is the view of [REDACTED] and not [REDACTED] and the majority of the other DNO's. Furthermore this was not as was originally envisaged in 2007 when the CCMS was 're-visited by Work Study Group 4'.

It must be questioned by Ofgem as to why the majority of the other DNO's, whom are also bound by the CCMS, have taken a differing approach to the CAF Rules enshrined with the Common Statement?

In addition, paragraph 5.15 states that for generation connections, reinforcement costs in excess of the high cost project threshold of £200/kW is chargeable in full as part of the connection charge. M

1. We fully accept this point and would suggest that in view of the charges being experienced by DG Developers this now requires urgently re-visiting.
2. We would also point out that since 50% of the [REDACTED] projects are for demand connections this is another reason that the demand connections MUST be separately calculated (and excluding from the £200/kw threshold charges).

4. Health Index rating for sections of line to be replaced.

We have not yet completed our assessment and will respond to this question by 6 February.

Our inspection of the poles indicates that 54 out of the 66 poles are nearly 60 years old. We would like confirmation in due course that this consistent with the health index. The ages of the poles being replaced are as follows:

31 dated 1954
23 dated 1955
1 dated 1975
2 dated 1986
1 dated 1993
1 dated 1994
5 dated 2001
2 dated 2008

We appreciate that the line may be currently fit for purpose but for how much longer? The customer finds it concerning, particularly having fish farming businesses reliant upon electricity for the use of pumps and the subsequent survival of livestock, that [REDACTED]'s policy is to replace on failure.

At what age would an ancient asset such as this normally be renewed? We understand that in the Scottish Borders near St Boswells there is currently an ongoing renewal programme of existing infrastructure.

Please give examples of lines which are a similar age or older than that under consideration in the [REDACTED]

5. Justification for replacement of modification of the four substations/transformers that will be replaced as part of this connection offer.

In order to provide surety of supplies to other existing customers, reduce the risk of damage to equipment in removing the substations from the existing line and then reinstalling on the new line, the works in the connection offer included installation of 4 new pole mounted transformers (substations) and associated equipment at those locations.

1. There is no justification for charging [REDACTED] for undertaking works that are of no relevance to the main [REDACTED] schemes.
2. Whilst we accept and support the premise that the construction of 2 lines is not reasonable we do not accept that the cost for replacing old transformers on an old for new basis (for facilitating an economic and efficient distribution network) should be recharged to the customer.
3. Noting that [REDACTED] secures :
 - A brand new 3 wire line serving numerous other customers in place of an ancient and rapidly decaying asset constructed in the 1950s.
 - A circuit that is removed from the precarious location within the woodlands.
 - No costs to [REDACTED] or dismantling the existing 2 wire line.
 - No costs for replacing the 4 existing s/s's.
 - Recovered / dismantled assets at scrap value.
 - Noting that the s/s's that are replaced are nothing to do with [REDACTED] or [REDACTED] businesses.

6. Comments on the route suggested by the customer's agent and why [REDACTED] proposed route is the minimum scheme.

[REDACTED]'s proposed route was itself based on the route proposed by the customer on 21 September 2011 following a meeting with him on 22 August 2011. The customer asked [REDACTED] to base its design on his overhead line drawings (attached to this note) which took into account the customer's understanding of the views of local landowners, including that there should be only one HV overhead line remaining in the valley upon completion of works. [REDACTED]'s re-design included some minor adjustments to the route for a more effective electrical infrastructure solution, and the revised drawings were sent to the customer on 27 October 2011, shortly before the formal connection quotation issued on 3 November 2011.

1. The route was indeed based on the premise that 2 lines up the same valley would not be appropriate or acceptable and on the route suggested by the customer. It should be emphasised, however, that the customer had to suggest a route for the line in the first instance on account of [REDACTED]'s reluctance to provide a suggested route for the line.
2. At no point after the customer suggested the route for the line did [REDACTED] refer back to the customer with a cheaper scheme (as suggested by [REDACTED]), which may have been acceptable to the landowners. We believe that it was incumbent on [REDACTED] to revert to the customer to try and refine the route and define the minimum cost scheme. Had a cheaper scheme been suggested the customer would have naturally asked the landowners if they would accept wayleaves in relation to it.
3. Whilst the customer accepts that the concept of '2 lines' is neither reasonable or acceptable we do not accept that all of the dismantlement cost (for facilitating an economic and efficient distribution network) should be recharged to the customer.
4. There has been no effort on the part of [REDACTED] to minimise cost to the customer by entering into discussions as to what part of the design would be fully fundable and what costs would/could be accepted by [REDACTED]; clearly this would have made a difference to the negotiations for the eventual wayleave consents.

5. Also see also the comments under 1-3 below.

As set out in the original submission, this project evolved over a period of some 2 years, and [REDACTED] has consistently endeavoured to provide a least cost solution within the constraints of the customer's requirements and other relevant factors such as wayleaves, as set out in out in more detail in the original submission.

- 1) We have not submitted all of the correspondence appertaining to this project. We have not noted the meetings, e-mails, phone calls and abortive work undertaken in order to get this to the stage in both the connections process and the dispute resolution process that we have now reached. The fact that it has taken 2 years is indeed an indictment to problems and difficulties that have been encountered.
- 2) We are not intending to make further comment or submission on this other than to refer Ofgem to the original correspondence such that they can evaluate the validity of the above comment from [REDACTED]!

In our view, the main drawback of the customer's proposed route is that it retains the existing HV overhead lines serving existing customers A, B, C and D, despite confirmation that the landowners concerned did not want multiple HV overhead lines. As explained above, the customers' proposed route of September 2011 was designed to negate the need for multiple HV overhead lines.

- 1) The dedicated line was not achievable and would be detrimental in the provision of an efficient and co-ordinated distribution network, however, at no time did [REDACTED] refer back to the customer with what may have been a cheaper scheme (as suggested by [REDACTED]) and ask them to check the viability of such scheme with the landowners. We again state that it was thereafter incumbent on [REDACTED] to revert to the customer to refine the route and define the minimum cost scheme.
- 2) We would suggest that it is difficult for any 'lay person' to interpret any grid proposals plan and thereafter define exactly what proportion of the total costs is chargeable to their scheme and what work should be undertaken at cost to [REDACTED]
- 3) We would again emphasise that we do not have a problem with [REDACTED] undertaking any supplementary work on their circuits, provided that they do so at their own cost.

General Comment from [REDACTED].

I first contacted [REDACTED] of [REDACTED] in March 2010 -nearly three years ago . At no point can I pretend that [REDACTED] have been helpful. In fact, I would suggest that they have been positively obstructive. I have felt that because of [REDACTED]'s perpetual delaying tactics they just do not want this scheme to happen.

Because of [REDACTED] s persistence and because we felt we were out of our depth we have employed [REDACTED] to help us find a way forward which

would otherwise have ground to a halt. Without professional help, I just do not know how any renewable business can succeed in securing a fair and reasonable grid connection from [REDACTED]. Indeed, many people would have thrown their hands in the air and given up, and I think that [REDACTED] by being so very difficult, hope that customers will do that.

I cannot stress strongly enough that Ofgem needs to have a set of guidelines (which incorporate the rules that apply to grid connections) so that customers, who want to build hydro schemes, have an easier route than we have had, to securing a fair and reasonable grid connection.

Company response to questions posed on 30 January 2013 following the oral hearing

1. *Can you provide the Health Index of the section of line that will be replaced?*

Starting with the HI information, we have carried out a condition based assessment of assets on the spur line since the oral hearing. Although there is no overarching category of overhead HV lines for HI reporting purposes, poles are recognised as a separate category. The data we have collected is summarised in the table below.

We should point out that although a significant number of poles are shown as being in the HI5 category, unless there are equipment failures before then the timescale for refurbishment work on this spur line will still be driven by the planned rebuild of the main line in 2014.

| Spur Line | Asset | HI Category | Number | |
|------------------|--------------|--------------------|---------------|------------|
| 1. Condition | Insulators | HI.1 | 69 | |
| | | HI.2 | 3 | |
| | | HI.3 | 3 | |
| | | HI.5 | 1 | |
| | Pole | HI.1 | 2 | |
| | | HI.3 | 39 | |
| | | HI.5 | 35 | |
| | Pole (Plumb) | HI.1 | 47 | |
| | | HI.3 | 29 | |
| | Steelwork | HI.1 | 7 | |
| | | HI.3 | 63 | |
| | | HI.4 | 5 | |
| | | HI.5 | 1 | |
| | | | | 304 |

Turning to your remaining 3 questions our responses to these are shown below.

2. *Estimate of maintenance and replacement costs avoided due to this reinforcement. Please also indicate how you reached this estimate.*

Based on the condition based assessment referred to above, indicative costs to refurbish the line are as follows

Refurbishment per km: 6km x £3.78k = £23k

Pole Replacement: 35 x £1.6k = £56k

Total: £79k

Please note that more detailed spur line refurbishment costs will not be known until 2014 when rebuilding work on the main line is scheduled to take place.

It should also be noted that although [REDACTED] may save asset renewal expenditure as a result of the works to provide the new 3 phase overhead line the condition based information above was not available at the time the connection quotation was prepared. In addition, the Common Connection Charging Methodology (paragraph 5.34) says that no credit is given in the connection charge for the value of any deferment of asset renewal expenditure.

3. *Justification for the removal of the existing line supplying [REDACTED], [REDACTED], [REDACTED] and [REDACTED]. Please also justify charging the customer for the dismantlement of these assets.*

We set out in our previous response that it was made clear to both the customer and ourselves that the local landowners from whom land rights would be needed were against the idea of multiple HV overhead lines in the valley. This was taken into account in the design and routing of the scheme, including the dismantling of the existing lines serving these premises. The costs involved were charged to the customer as they are costs necessitated by the required connection.

4. *justify the increase in costs associated with tree cutting after providing the customer with a cost breakdown.*

Although the tree cutting costs shown in the breakdown provided to [REDACTED] in July 2012 (£15,180) were higher than those given in a breakdown provided in February 2012 (£11,000), the reason for this is that some tree cutting costs were embedded in other cost categories in the earlier breakdown. There was not an increase in tree cutting costs per se. Also, the customer has since indicated that he may be able to carry out some of the tree cutting himself, in which case an appropriate credit will be given.