

# DCUSA Request For Information (RFI)

## DCP 283

### The calculation of generation credits in the CDCM

Date Raised: *12 October 2016*

Proposers Name: *Johannes Nowak*




Company Name: *MVV Environment Services Limited*






Company Category: *Supplier*

#### Purpose of this Request For Information:

DCP 283 seeks to amend the calculation of credits for embedded generation to more closely reflect the benefits they bring to Distribution Network Operators.

This document is a Request for Information issued to DCUSA Parties and any other interested Parties in accordance with Clause 11.14 of the DCUSA seeking industry views on DCP 283.

	<p>The Workgroup recommends that this Change Proposal should:</p> <ul style="list-style-type: none"> <li>• proceed to Request for Information</li> </ul> <p>Parties are invited to consider the questions set in section 10 and submit comments using the form attached as Attachment 1 to <a href="mailto:dcusa@electralink.co.uk">dcusa@electralink.co.uk</a> by <b>13 January 2016</b>.</p> <p>The Working Group will consider the RFI responses and determine the appropriate next steps for the progression of the Change Proposal (CP).</p>
	<p>Impacted Parties: Distribution Network Operators, Embedded Generation and Suppliers</p>
	<p>Impacted Clauses: Schedule 16 (CDCM)</p>

Contents		 Any questions?
1. Summary	3	Contact: Code Administrator
2 Governance	3	 DCUSA@electra link.co.uk
3 Why Change?	3	 020 7432 2859
4 Working Group Assessment	6	Proposer: Johannes Nowak
5 RFI Questions	7	 <a href="mailto:johannes.nowak@mv.v.de">johannes.nowak@mv.v.de</a>
		 0207 432 3008

## 1. Summary

### What?

- 1.1 The Distribution Connection and Use of System Agreement (DCUSA) is a multi-party contract between electricity Distributors and electricity Suppliers and large Generators. Parties to the DCUSA can raise Change Proposals (CPs) to amend the Agreement with the consent of other Parties and (where applicable) the Authority.

### Why?

- 1.2 DCP 283 has been raised by MVV Environment Services Limited and suggests two changes that could improve the cost reflectivity of generation credits for embedded generators. More cost reflective credits for generators will place incentives on embedded generation that reflect the benefits they bring to network operators.

### How?

- 1.3 The proposed solution is to:
- award credits at the voltage of connection; and
  - exclude the customer contributions discount in the assessment of credits for embedded generators in the Common Distribution Charging Methodology (CDCM).

## 2 Governance

### Requested Next Steps

- 2.1 Following a review of the RFI responses, the Working Group will work to agree on the detail of the consultation and submit the consultation for review and comment by parties.

## 3 Why Change?

### Background of DCP 283

- 3.1 This CP address two issues with the calculation of credits within the CDCM; the principle of applying credits at the voltage of connection and the discounting of credits to take account of customer contributions for demand customers. These issues are considered separately below:

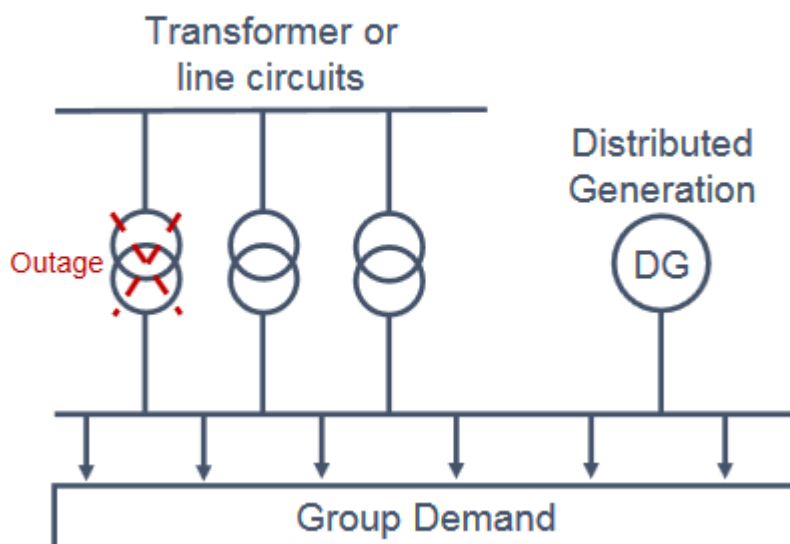
#### **Credits at the voltage of connection**

- 3.2 The principle applied within the CDCM is that credits are applied for voltage levels above the voltage level of connection. For demand, costs are taken into account down to the voltage of connection. The rationale for applying credits above the voltage level of connection was set down when the CDCM was developed and was justified as the benefit of reduced reinforcement was

perceived to be higher up the network. The requirement was set out in an Ofgem decision document in 2008<sup>1</sup> within Appendix 2 which outlines the principles and assumptions to be used when setting out the CDCM. The relevant assumption is set out in 1.51 which states:

*“1.51. The network is assumed to be demand dominated. Credit will be provided for offsetting demand on the distribution network above the voltage of connection “*

- 3.3 The Ofgem decision is based on Engineering Recommendation P2/6 as supported by ETR 130 Application Guide for Assessing the Capacity of Networks Containing Distributed Generation and applies to both intermittent and non-intermittent generation.
- 3.4 The basic principle of P2/6 and ETR130 is that embedded generation can offset the need for network capacity depending on the reliability of the generator and its setup. A simple example where an embedded generator offsets the need for a transformer is shown in the diagram below:



- 3.5 The more reliable the generator is the more the Distribution Network Operator (DNO) can rely on it for network planning purposes. P2/6 sets out the reliability factors (labelled “f” factors) for different types of generation. Where a generator is intermittent, an additional persistence factor is also taken into account.
- 3.6 When assessing the ability of an embedded generator to offset network capacity, P2/6 refers to a demand group. The demand group is not specified as a network level and the assumption within the CDCM is that the benefit will be realised at the next voltage level up (e.g. for a Low Voltage (LV) circuit the benefit will be realised at the Low Voltage Substation (LVS) transformer).

<sup>1</sup> [Ofgem decision document - Delivering the electricity distribution structure of charges](#)

## **High Voltage**

- 3.7 At High Voltage (HV), DNOs typically exclude HV connected generators when considering the network required to meet the demand for a new customer. However, at the substation, they take account of any embedded generation and consequently less capacity may be required at the substation and voltage levels above. This principle suggests that the current principle within the CDCM of applying credits to the voltage levels above the voltage of connection is correct as the benefit to the DNO is only realised at higher voltage levels. We do not propose to amend the methodology for credits for HV generators.

## **Low Voltage Substation**

- 3.8 Embedded generators who connect directly at LVS do not currently get a credit for avoiding the use of the LV substation. However, the principle that the benefit is realised at the substation where the capacity can be reduced holds true even though the generator is connected directly to a LVS and it is therefore appropriate that LVS generators should receive the benefit at the voltage of connection. However, as the generator will only benefit the DNO if it can be relied on, we propose to extend the credits to the voltage of connection for non-intermittent generation only.

## **Low Voltage**

- 3.9 Embedded generation connected to the low voltage network are not particularly visible to DNOs. When a DNO is planning the LV network, they are more likely to assess the maximum demand at the local substation with some consideration of any large generation that may be connected. At the LV network the presence of generation will be more diverse and therefore some of the benefits will be realised at the level of connection in addition to the higher voltage levels. We propose to take account of generation credits at the voltage of connection for LV connected generation by allocating a proportion of the demand costs at the voltage of connection as a credit to non-intermittent embedded generation at LV. We suggest a 75% sharing factor for the proportion of the LV demand charge that should be allocated to LV connected generation, but suggest that this value would need further consideration by the Working Group.

## **Treatment of customer contributions**

- 3.10 Within the CDCM, demand charges are reduced by the customer contribution to take account of the amount paid up front when a customer connected. This customer contribution for demand is also applied to the calculation of generation credits. The impact of the application of customer contributions is to reduce the level of credits.
- 3.11 When a generator connects to the network, one of the benefits that is realised by the DNO is a reduced flow on the local network. This allows further demand customers to connect without the need for reinforcement and therefore they will need to make less or no customer contribution when they connect. Consequently, applying the customer contributions to generation credits, reduces the cost reflectiveness of the credit that is provided to embedded generation under the CDCM.

## 4 Working Group Assessment

### DCP 283 Working Group Assessment

- 4.1 The DCUSA Panel established a Working Group to assess DCP 283. This Working Group consists of DNO, Supplier, National Grid and Ofgem representatives. Meetings were held in open session and the minutes and papers of each meeting are available on the DCUSA website – [www.dcusa.co.uk](http://www.dcusa.co.uk).

#### Credits at the voltage of connection

- 4.2 The principle applied within the CDCM is that credits are applied for voltage levels above the voltage level of connection. This in line with the P2/6 standard.
- 4.3 The Working Group is seeking parties' responses to the question:

**When Demand or Generation customers connect at LV/LVS/HV do DNOs adopt a higher standard than P2/6?**

#### High Voltage

- 4.4 The Working Group discussed whether it is appropriate to not give credits for the avoidance of the HV network to generators that connect at HV. The proposer does not believe that that any costs are avoided by DNOs at the HV network level when a generator connects at HV. We would like to confirm whether the parties agree with this.
- 4.5 The Working Group is seeking parties' responses to the question:

**Do DNOs potentially avoid any costs under their network planning standards at the HV network level when a generator connects at the HV level.**

#### Low Voltage Substation

- 4.6 Under the current charging arrangements, generators receive a credit for avoiding costs on behalf of DNOs at voltage levels above the voltage of connection. For a LVS connected generator, this means that the generator receives a credit for the HV network. The proposer suggests that there is no real difference between a generation customer that connects directly at the LVS level or directly to the LV level.
- 4.7 The Working Group has identified that one such difference is where a generator is connected to a LV substation that is sole use. The Working Group would like to ascertain whether parties can identify the proportion of LVS customers that have a sole use LV substation and if so, what this proportion is.
- 4.8 The Working Group is seeking parties' responses to the question:

**Can DNOs identify the number of LVS generators with sole use substations and if so, what is the proportion that is sole use?**

#### Low Voltage

4.9 The P2/6 standard sets down minimum requirements for DNOs when planning their network. The network requirements are set relative to the Group Demand which is defined as follows:

*“The DNO’s estimate of the maximum demand of the group being assessed for ER P2/6 compliance with appropriate allowance for diversity. The Group Demand at grid supply points must be consistent with the demand data submitted to a transmission company under the terms of the GB Grid Code.”*

4.10 The charging methodology effectively assumes that the Group Demand is at voltage level. This is implied within the methodology as the only benefit factored into the calculation of credits is at the next voltage level up. The Working Group would like to ascertain whether parties use the demand at the LV substation when assessing the benefit of embedded generation that connects at LV or whether the Group Demand is considered at a more granular level (i.e. using a subset of the LV network).

4.11 The Working Group is seeking parties’ responses to the question:

**How do DNOs calculate the Group Demand at LV for planning purposes, particularly whether it is measured at the LV substation or as a subset of the LV network?**

4.12 The proposer also identified that at the LV voltage level, the level of demand and therefore the required network capacity is uncertain due to the limited infrastructure to monitor powerflows. The Working Group would like parties to confirm via a short statement their approach to planning the LV network and how they factor in embedded generation, if at all.

4.13 The Working Group is seeking short statements from parties’ in response to the question:

**How do DNOs plan their LV network?**

## 5 RFI Questions

5.1 The Working Group is seeking industry views on the following RFI questions:

Question Number	Question
1	When Demand or Generation customers connect at LV/LVS/HV do DNOs adopt a higher standard than P2/6? Please provide your rationale
2	Do DNOs potentially avoid any costs under their network planning standards at the HV network level when a generator connects at the HV level?

3	Can DNOs identify the number of LVS generators with sole use substations and if so, what is the proportion that is sole use?
4	How do DNOs calculate the Group Demand at LV for planning purposes, particularly whether it is measured at the LV substation or as a subset of the LV network?
5	Please provide a short statement on how DNOs plan your LV network?

5.2 Responses should be submitted using Attachment 1 to [dcusa@electralink.co.uk](mailto:dcusa@electralink.co.uk) no later than, 13 January 2017.

5.3 Responses, or any part thereof, can be provided in confidence. Parties are asked to clearly indicate any parts of a response that are to be treated confidentially.

### Attachments

- Attachment 1 – Response Form
- Attachment 2 – Change Proposal