



DCUSA Consultation

DCP 087 - Smoothing Load Characteristics and Peaking Probabilities in the CDCM

1 PURPOSE

- 1.1 The Distribution Connection and Use of System Agreement (DCUSA) is a multi-party contract between electricity Distributors, 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.
- 1.2 This document is a consultation issued to all DCUSA Parties, DCMF members and the Authority in accordance with Clause 11.14 of the DCUSA seeking industry views on DCP 087 'Smoothing Load Characteristics and Peaking Probabilities in the CDCM'.
- 1.3 Parties are invited to consider the proposed drafting set out as Appendix A and submit comments using the form attached as Appendix B to DCUSA@electralink.co.uk by 22 July 2011.

2 SUMMARY

- 2.1 The intent of this CP is to improve the cost reflectivity and reduce the year on year volatility of tariffs calculated by the Common Distribution Charging Methodology (CDCM) by specifying that some of the most volatile input data (load characteristics (coincidence factors, load factors, non-half hourly multi-rate use of timeband rate one, non-half hourly multi-rate Use of timeband rate two) and peaking probabilities) are calculated using a 3-year rolling average which is more representative of the customer's typical consumption pattern.

3 DCP 087 – SMOOTHING LOAD CHARACTERISTICS AND PEAKING PROBABILITIES IN THE CDCM

- 3.1 DCP 087 has been raised by Western Power Distribution following discussions at the Distribution Charging Methodology Forum (DCMF) and in Workstream C of the Common Methodology Group (CMG) on reducing volatility in CDCM tariffs.
- 3.2 The intent of this CP is to improve the cost reflectivity and reduce the year on year volatility of tariffs calculated by the CDCM by specifying that some of the

most volatile input data (load characteristics and peaking probabilities) are calculated using a 3-year rolling average which is more representative of the customer's typical consumption pattern.

- 3.3 It is anticipated that the CP will have the effect of smoothing the annual volatility surrounding these inputs to the CDCM whilst the use of a rolling average will ensure that trends over time are captured. It will also ensure that the period used to derive the inputs is common across all Distribution Network Operators (DNOs).

4 WORKING GROUP ASSESSMENT

- 4.1 The DCP 087 Working Group comprises representatives from DNOs, Suppliers and Ofgem.
- 4.2 The Working Group considers the business justification and market benefits of implementing the CP are sound. It considers that DCP 087 will have the effect of smoothing the annual volatility surrounding these inputs to the CDCM whilst the use of a rolling average will ensure that trends over time are captured.
- 4.3 The Working Group considers that DCP 087 will deliver a more consistent approach to the derivation of these inputs to the CDCM. The change proposal will therefore allow the CDCM to better meet the DCUSA objective (and DNO Licence objective) of facilitating competition in the generation and supply of electricity and will produce charges that are more reflective of the costs incurred by the DNO.

5 DNO DATA ANALYSIS

- 5.1 Three sets of data have been used during the analysis. Each set of data used in the analysis is based on either a two or three year average depending on the availability of data to the DNOs.
- 5.2 Analysis has been provided by the majority of the DNOs and the Working Group considers it is sufficient to support this change proposal. DCP 087 proposes using a three year rolling average on the basis that it is more appropriate as it will better smooth out the effects of exceptional years (e.g. extreme cold weather or severe recession) that could otherwise still have a

large impact on the stability and cost reflectivity of the resulting tariffs.

Workstream C Analysis

- 5.3 The analysis provided with the CP (<http://www.dcusa.co.uk/Extranet/CP.aspx?id=105>) has been carried out by Workstream C of the CMG and investigates the volatility of load characteristics and peaking probabilities between the two annual sets of CDCM tariffs for 2011/12 and 2010/11.
- 5.4 The spreadsheets show the impact that the changes in these volatile input items between 2010/11 and 2011/12 would have on CDCM tariffs if they were made in isolation. The analysis also shows the impact on CDCM tariffs if an average value were used instead.
- 5.5 The analysis shows that the items that this proposal looks to smooth can indeed be volatile between years and that using an average approach reduces this volatility.

Working Group Analysis 1

- 5.6 Whilst the original Workstream C analysis shows that there could indeed be volatility between years in individual tariff rates it did not consider the materiality of the monetary impact on customer annual tariffs. Hence, the second set of analysis, attached as Appendix B, has been carried out by the DCP 087 Working Group. This makes comparisons between a base case set of data (using the April 2010 CDCM inputs) and a 'smoothed version' by adding in turn the smoothed version of the data sets identified in the DCP 087 proposal i.e.:
- Coincidence factors;
 - Load factors;
 - NHH proportion of units recorded in each timeband; and
 - Peaking probabilities.
- 5.7 Having calculated the smoothed CDCM inputs for the above, five CDCM cases were prepared using the original April 2010/11 models as the base case:
1. The base case;
 2. Base case plus smoothed coincidence factors;

3. Base case plus smoothed load factors;
4. Base case plus smoothed NHH proportion of units recorded in each timeband; and
5. Base case plus smoothed peaking probabilities.

5.8 The Working Group looked for maximum, minimum and average tariff disturbances in terms of the amount of network revenue recovered and the £/MPAN/year across NHH use of time bands, coincidence factors, load factors and peaking probabilities.

5.9 The following table summarises the results of the analysis.

	Max £/MPAN/year (corresponding % change in network revenue)	Min £/MPAN/year (corresponding % change in network revenue)	Average £/MPAN/year
NHH Use of Time Band	£982.53 (0.49%)	-£9,345.54 (-0.62%)	-£9.28
Coincidence Factors	£3,703.36 (2.68%)	-£29,401.85 (-1.98%)	-£48.69
Load Factors	£11,688.00 (3.49%)	-£3,586.77 (-0.24%)	£20.90
Peaking Probabilities	£982.53 (0.35%)	-£2,989.56 (-1.34%)	-£3.58

5.10 The maximum figures in the table above are defined as the maximum tariff change across all tariffs and all DNOs. The minimum is the largest negative tariff change across all tariffs and all DNOs. The average is calculated by taking the mean tariff movement for each DNO and then averaging these values across all DNOs. A spreadsheet containing a summary of all data received is attached as Appendix C.

5.11 The likely reasons of the high and low values were analysed and discussed by the Working Group. The reasons for the values experienced included:

- The shifting of the peak period by one half hour;
- Large percentage changes having only a very small absolute impact;
- Conversely, very small percentage changes having a large absolute impact; and
- The inventory size for unmetered supplies customers (e.g. small number of MPANs being used for large portfolios of unmetered supplies leading to a large absolute change in per MPAN tariffs).

- 5.12 Overall the Working Group considered that the impacts could be explained, were in line with expectations, and that the data received was sufficient to determine that impacts are broadly consistent across DNOs.

Working Group Analysis 2

- 5.13 The analysis thus far examined the impact of changes to the four parameters in isolation. The Working Group considered that further analysis was required in order to understand the impact on customer tariffs when changes to all four parameters are made together, as this would be more reflective of the changes that would occur during the DNO's charge setting process. Appendix D contains both the request for information and the responses received.
- 5.14 The Working Group has analysed these responses and summarised them in Appendix E. The outcome of the analysis is that in 88% of occurrences, using smoothed inputs to the CDCM model results in less tariff volatility.
- 5.15 In addition, in the 12% of occurrences where more volatility was seen, the average variance between the smoothed and annual inputs was only 0.8%, with a maximum difference of 4.5%. This compares with an average and maximum difference of 2.7% and 64.9% respectively in cases where using a single year of data produces more volatile tariffs.

6 CONCLUSIONS

- 6.1 The working group has concluded that that the analysis provided supports the change proposal and that moving to updating the relevant CDCM inputs on a 3 year average basis would be beneficial for the following reasons:
- The original supporting analysis provided with the change proposal clearly showed that using a single year of data for these inputs could lead to significant year-on-year disturbance in individual tariff components and that moving to an average basis reduced this disturbance.
 - The first piece of data analysis produced by the working group (see appendix B & C) showed the impact of moving to an averaged basis for each of the relevant inputs, and whilst in some cases the impact was large, it could be seen that when expressed as a percentage of annual charge it was much less significant. Furthermore in all of these cases the impact was

lower than would have been the case had a single year of data be used instead.

- The second piece of data analysis produced by the working group (see appendix D & E) showed conclusively that when all of the relevant CDCM inputs were updated together on an averaged basis rather than on a single year basis, the volatility of tariffs and annual charges reduced in 88% of cases and was not significantly adversely affected in the remainder of cases.

7 ASSESSMENT AGAINST THE DCUSA OBJECTIVES

- 7.1 Members consider that CDCM Objectives 2 and 3 will be better facilitated by the implementation of the CP. Clause 43 of Schedule 16 of DCUSA currently states that in determining load characteristics for categories of demand users, the DNO should analyse meter and profiling data received for a recent 12 month period. The load characteristics referred to are given in Clause 42 and for each category of demand user relate to:
- Load factors [CDCM table 1041];
 - Coincidence factors [CDCM table 1041]; and
 - The estimated proportion of units recorded in each relevant time pattern regime that fall within each distribution time band [CDCM tables 1061/1062].
- 7.2 These inputs can be quite volatile year-on-year and therefore the use of a single 12 month period for calculating them could lead to volatile tariffs coming from the CDCM.
- 7.3 Clauses 48 and 49 of Schedule 16 of DCUSA relates to the peaking probabilities [CDCM table 1069] in respect of each network level and each distribution time band. Peaking probabilities can also be quite volatile year-on-year leading to more volatile tariffs. The CDCM is also silent on how frequently peaking probabilities should be refreshed or the time span over which the data should be derived.
- 7.4 Volatile tariffs do not support the facilitation of effective competition in the generation and supply of electricity since smaller market participants with a

narrow portfolio of customers may be more exposed to the effects of volatile DUoS tariffs than larger market participants with a broad portfolio of tariffs. This is because overall DUoS tariffs are constrained by the DNOs allowed revenue such that large swings in individual CDCM tariffs will, all else being equal, naturally result in compensating changes to all other CDCM tariffs. It is also the case that the impact on larger market participants with a broad portfolio of tariffs could also be significant.

- 7.5 Volatile data inputs that may relate to exceptional single years of data may also impair the cost reflectivity of the resultant tariffs.
- 7.6 This CPI will have the effect of smoothing the annual volatility surrounding these inputs to the CDCM whilst the use of a three rolling average will ensure that trends over time are captured. The change proposal will also ensure that the period used to derive the inputs is common across all DNOs. The change proposal will therefore allow the CDCM to better meet the CDCM objectives of facilitating competition in the generation and supply of electricity and producing charges that are reflective of the costs incurred by the DNO.
- 7.7 For the reasons outlined above the Working Group also considers that General Objective 2 will be better facilitated by the implementation of the CP.

8 LEGAL TEXT

- 8.1 The proposed legal drafting is attached as Appendix A.
- 8.2 The Working Group welcome respondent's views on the legal drafting and in particular whether "reasonable endeavours" is appropriate or whether the legal drafting should be more specific in terms of the time period to be used in the calculations. In addition, how should DNOs deal with the situation in which the specified data is not available, and how should this be reflected in the legal drafting?

9 IMPLEMENTATION

- 9.1 The proposed implementation date for DCP 087 is 01 April 2012. To enable this implementation date to be met, a decision on this modification proposal is required as soon as is reasonably practical, but no later than 01 November

2011. An early decision will better facilitate competition by providing earlier certainty of the change to the basis of tariff setting. The deadline of 01 November 2011 is recommended to allow for the change to be included in the indicative tariffs for 2012/13, which will be set and published by 31 December 2011.

10 CONSULTATION

10.1 The Working Group is seeking views on the below questions:

- Do you understand the intent of the CP and are you supportive of its principles?
- Do you consider that the proposal better facilitates the DCUSA CDCM and General objectives? Please give supporting reasons.
- The Working Group welcome respondent's views on the legal drafting and in particular whether "reasonable endeavours" is appropriate or whether the legal drafting should be more specific in terms of the time period to be used in the calculations. In addition, how should DNOs deal with the situation in which the specified data is not available, and how should this be reflected in the legal drafting?
- Are there any alternative solutions or matters that should be considered?
- The proposed implementation date is 01 April 2012 subject to Authority Consent being granted by 01 November 2011. Are you supportive of the proposed date?

10.2 Responses should be submitted using Appendix F to DCUSA@electralink.co.uk no later than 22 July 2011.

10.3 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.

11 NEXT STEPS

11.1 Following the end of the consultation period the responses will be reviewed by the Working Group. The Working Group will finalise the drafting of the CP and submit its final report to the Panel. Following Panel approval, the Change Proposal will be issued to all DCUSA Parties for voting and, following the vote,

issued to Ofgem for final determination.

Activity	Date
Definition Phase	21 March – 10 August
Change Report Agreed	17 August Panel
Party Voting	22 August - 13 September
Authority Determination	15 Sept – 27 October
Implementation	01 April 2012

11.2 If you have any questions about this paper or the DCUSA Change Process please contact the DCUSA Help Desk by email to DCUSA@electralink.co.uk or telephone 020 7432 3011.

12 APPENDICES

- Appendix A – Proposed legal text;
- Appendix B – Working Group Analysis 1 (Implementation impact calculated separately for each of the four parameters);
- Appendix C – Summary of Appendix B;
- Appendix D – Working Group Analysis 2 (Implementation impact calculated for aggregate effect of all four parameters);
- Appendix E – Summary of Appendix D; and
- Appendix F – Response form.