



DCUSA CONSULTATION ONE

DCP 160 - Non-Half Hourly (NHH) Notional Capacity

DCP 160 was raised by UK Power Networks and seeks to revise Schedule 16 (along with appropriate CDCM and ARP Modelling changes) to introduce a notional spare capacity requirement to be applied to the average maximum demand when calculating NHH tariffs. The notional spare capacity should align with the same proportions which are calculated and allocated to Half Hourly (HH) tariffs.

1 PURPOSE

- 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.
- 1.2 This document is a consultation issued to Distribution Network Operators (DNOs), Independent Distribution Network Operators (IDNOs), Suppliers, Consumer Futures, ELEXON, Gemserv, any other interested Parties and the Authority in accordance with Clause 11.14 of the DCUSA, seeking industry views on DCP 160 '*Non-Half Hourly (NHH) Notional Capacity*' (Attachment 2).
- 1.3 Parties are invited to consider the questions set out in Section 6 below and submit comments using the form attached as Attachment 1 to dcusa@electralink.co.uk by **Friday, 17 April 2015**.

2 BACKGROUND TO THE DCP 160 – NON-HALF HOURLY (NHH) NOTIONAL CAPACITY CP

- 2.1 This change was initially derived from discussions at the Methodology Issues Group (MIG) sub-group that was set up to consider the differences in the cost allocation mechanisms for HH and NHH tariffs in the CDCM in 2011.
- 2.2 There was a number of other CPs which were also submitted as a result of the work of the MIG sub-group:
- DCP 130: 'Remove the discrepancy between Non Half Hourly (NHH) and Half Hourly (HH) Un-metered Supplies (UMS) tariffs'. This DCP was implemented on 1 April 2013.
 - DCP 165: 'Voltage Level Approach to Unit Charges in the CDCM'. This DCP was withdrawn.
 - DCP 179: 'Amending the CDCM Tariff Structure'. This DCP has been approved by Ofgem for implementation on 1 April 2015.
- 2.3 It is considered that the implementation of DCP 130 and DCP 179 has resulted in a

charging methodology which has significantly reduced any differences in the cost allocation mechanisms that are applied to any individual customer, regardless of whether that customer is settled on a HH or NHH basis i.e. the methodology should result (on average) in the same level of charges for the *same* customer regardless of whether that customer is settled HH or NHH.

- 2.4 DCP 160 seeks to go further than DCP 130 and DCP 179 by removing the differences in cost allocation mechanisms between HH and NHH charges for *different* customers with respect to the treatment of capacity.
- 2.5 The majority of the costs in the CDCM are converted to p/kWh unit rates by reference to a tariff groups' load characteristics (coincidence factor and load factor). However at network levels at or close to the voltage of connection, costs are converted to either capacity charges or fixed charges which are derived using aggregate capacity. In deriving these aggregate capacities the CDCM treats NHH and HH customers differently. Section 4 below provides a summary of the treatment of capacity in the CDCM, but at a very high level aggregate capacity for HH customers is derived by the summation of agreed capacities, whereas for NHH customers it is the sum of maximum demand. This consultation is seeking views on whether or not this different treatment is justified.

3 INTENT OF DCP 160 – NON-HALF HOURLY (NHH) NOTIONAL CAPACITY

- 3.1 DCP 160 was raised by UK Power Networks and seeks to revise Schedule 16 (along with appropriate CDCM and ARP Modelling changes) to introduce a notional spare capacity requirement to be applied to the average maximum demand when calculating NHH tariffs. The notional spare capacity should align with the same proportions which are calculated and allocated to HH tariffs.
- 3.2 The solution to this change recommends that for each NHH tariff group the average maximum demand used in the calculation of charges should be increased by a factor to allow for spare capacity. The factor proposed is the ratio between the average maximum demand and capacity from a similar HH tariff.

4 THE TREATMENT OF CAPACITY IN THE CDCM

4.1 There are three categories of costs allocated in the CDCM – these are Network Costs, Transmission Exit costs and Other costs. Network Costs apply to all distribution network levels, Transmission Exit costs apply only to the transmission level¹ whilst Other Costs apply partly to each distribution network level and partly to dedicated assets for each type of user.

4.2 Network costs at each network level are converted to a £/kW/yr by dividing the cost of the network level assets (£) by the exit flow (kW) at the time of system simultaneous maximum load (SMD) to produce a network level asset cost in £/kW, and then multiplying this by an annuity factor. Capacity is not relevant to this calculation.

4.3 Other Costs are allocated to each network level on the basis of ‘notional asset value’². For the purpose of calculating a notional asset value for each network level, the network level asset cost in £/kW is multiplied by an estimated load. The estimated load is not the pure SMD, but rather the ‘SMD adjusted for standing charge factors’³.

4.4 The ‘SMD adjusted for standing charge factors’ differs from the pure SMD by replacing, for each network level, the pure SMD with a diversified aggregate capacity calculated as follows:

- Start with the pure SMD.
- Remove the portion of SMD at each network level which is subject to standing charge factors for each tariff.
- Add, at each network level which is subject to standing charge factors, the diversified aggregate capacity. For NHH customers the aggregate capacity is the total annual kWh/load factor (i.e. max demand), whereas for HH customers the aggregate

¹ Transmission exit costs apply only to transmission level which is unaffected by the treatment of capacity for any CDCM tariff and so is not explained further in this consultation.

² A portion of Other Costs is also allocated to the Customer level by reference to the aggregate value of service models but this is not relevant to this consultation and is not explained further.

³ Standing charge factors in the CDCM represent the extent to which the network design and planning process takes account of the capacity of a particular customer.

capacity is the total agreed capacities of the HH customers (i.e. agreed capacities). The diversity factors applied to these aggregate capacities are determined by reference to the diversity factors input to the CDCM by the DNO, or in the case of LV where no such diversity factor is input, calculated within the CDCM⁴.

- 4.5 Having allocated Other Costs (£/yr) to each network level as described above, these costs are converted to a £/kW/yr at each network level by dividing by the SMD adjusted for standing charge factors.
- 4.6 The CDCM at this point has therefore calculated a £/kW/yr by network level for both Network Costs and Other Costs. For network levels more remote from the tariff groups' voltage of connection these £/kW/yr costs are converted to network level p/kWh rates to apply to each tariff primarily by reference to the tariff groups' load characteristics (coincidence factor and load factor). For network levels close to the voltage of connection the methodology converts these £/kW/yr costs to capacity rates (p/kVA/day) by reference to the network level diversity factor and an assumed power factor of 0.95⁵. In deriving capacity and fixed charges the relevant voltage levels for each tariff are defined by their standing charge factors.
- 4.7 The standing charge factors for NHH settled users are:
 - a) 100 per cent for the network level at which the end user is supplied; and
 - b) Zero for any further network level.
- 4.8 The standing charge factors for half hourly settled users at LV Sub are:
 - a) 100 per cent for the transformation level at which the supply is made to the end user;
 - b) 100 per cent for circuits at the next voltage level; and

⁴ Diversity factor for LV circuit is calculated as the sum of: [(aggregate capacity for NHH (max demand) + aggregate capacity for HH (agreed capacities))/SMD (NHH & HH)]

⁵ For each network level: [p/kVA/day from network model assets] = 100*[standing charge factor]*[network level £/kW/year]*[user loss factor]/[network level loss factor]*(1 – [contribution proportion])/[days in year]/(1 + [diversity allowance])*[power factor in network model]

c) Zero for any further network level.

4.9 The standing charge factors for other half hourly settled users are:

- a) 100 per cent for the voltage level of supply of the end user;
- b) 100 per cent for the next transformation level;
- c) 20 per cent for circuits at the next voltage level (including 132kV for HV users to the extent that 132kV/HV transformation is used); and
- d) Zero for any further network level.

4.10 For HH demand users, except unmetered users, the p/kVA/day unit costs are allocated to the capacity charge rate. For NHH demand users, again except unmetered users, the p/kVA/day unit costs are allocated to the fixed charge by multiplying the p/kVA/day rates by the average kVA/customer⁶.

5 WORKING GROUP ANALYSIS OF DCP 160 – NON-HALF HOURLY (NHH) NOTIONAL CAPACITY

5.1 The DCUSA Panel has established a DCP 160 Working Group which consists of Supplier, DNO and Ofgem representatives to consider the CP.

5.2 The Working Group considered the concept of ‘spare capacity’ for HH customers as being implicitly defined by the proposal as:

*where the sum of HH agreed capacity is x; and
the sum of the HH maximum demand capacity is y;
then the HH Spare Capacity is x/y.*

5.3 The intent of DCP 160 is to uplift the capacity allocated to NHH customers in the CDCM by this ‘spare capacity’ factor.

5.4 The Working Group queried whether the concept of spare capacity described above for HH customers was appropriate. A HH customer will request an agreed capacity from the

⁶ For this purpose, demand users in PC 1-4 are taken as a single group

DNO and the DNO will consider whether the network requires any reinforcement on the basis of this agreed capacity. The connection agreement will then formalise this agreed capacity and oblige the DNO to make it available to the customer. To the extent that a HH customer may not utilise the full amount of their agreed capacity, there is a question as to whether this unused element of agreed capacity is 'spare' capacity or whether it might be better described as 'reserved' capacity.

- 5.5 Currently for NHH tariffs a value for such 'spare' or 'reserved' capacity is not calculated as part of the charges, whereas HH tariffs are calculated based on the average capacity required. The CP states that this means that HH users are paying for spare network capacity while NHH users are not.

Q1: Do you consider the capacity requested by HH customers but not being utilised to be spare capacity or reserved capacity?

Q2: Do you agree with the proposer's view that HH customers are paying for spare capacity whereas NHH customers are not?

- 5.6 Part of the justification provided by the proposer of DCP 160 included the statement that *"all tariffs need to be derived on a consistent cost reflective basis for both existing as well as new tariffs"*.

- 5.7 The Working Group agrees that tariffs should be cost reflective, and also agrees that tariffs should ideally be derived on a consistent basis. However there may be instances where cost reflectivity may require that different approaches be used to derive tariffs. In such circumstances the question arises whether the tariffs should be derived in a manner that maintains cost reflectivity where there is a known inconsistency in the derivation of tariffs, or whether they should be derived on a basis which aligns the approach, but may result in a reduction in overall cost reflectivity of the end tariff.

Q3: Do you agree with the statement: **All tariffs need to be derived on a consistent cost reflective basis for both existing and new tariffs?**

- 5.8 The Working Group considered the treatment of capacity in the CDCM, as detailed in section 4 above and tracked the calculation used in the model for NHH customers and

concluded that NHH customers were paying for capacity within a NHH customers fixed charge.

5.9 The Working Group is interested in respondent's views on whether the elements of capacity allocated to HH and NHH customers through the application of the Standing Charge Factors is sufficient and whether a change is justified for NHH calculations in order to bring them in line with the treatment of HH calculations.

5.10 The Working Group sought information from the DNO members on the planning processes of DNOs. DNOs confirmed that in general:

- For Domestic housing schemes – designers would use a diversified maximum demand assumption to determine if the capacity can be accommodated on the network;
- A similar approach would apply for small non-domestic requests;
- For med-large connections designers will base their design on the capacity requested in conjunction with looking at the HH demand history on the sub-station, this ensures they do not overload the network.

5.11 The Working Group noted the above network design process and considered it alongside the approach utilised in the CDCM – where for NHH customer's aggregate capacity was derived on the basis of diversified maximum demand whereas for HH customers aggregate demand was derived on the basis of agreed capacities.

5.12 The Working Group considers that it appears that the cost allocation approach in the CDCM reflects reasonably well the differences in the planning process between HH and NHH customers. The possible exception to this would be PC5-8 (medium sized connections) where the DNO may base their design on the capacity requested. However, for this group of customers the Working Group notes that following the implementation of DCP 179, P272 and P300, those customers who are CT metered will become HH and billed on a site specific basis with a capacity charge consistent with other HH customers.

Q4: The planning process for domestic and small non-domestic customers is based on a

diversified maximum demand assumption, whereas for medium-large customers it is based on agreed capacity. Do you consider the current process correct for deriving NHH and HH tariffs as set out under the CDCM?

5.13 The CP suggests that there is spare capacity created by HH customers.

Q5: There is a perception that there is notional spare capacity created by HH customers. Is this correct?

5.14 The CP suggests that the notional spare capacity that should apply to NHH tariffs should align with the same proportions which are calculated and allocated to HH tariffs.

Q6: If you think that NHH customers should be picking up some proportion of this notional spare capacity, is the proportion suggested in this CP appropriate?

6 DCP 160 – Consultation One Questions

6.1 The following table provides a list of the consultation questions that the Working Group is seeking responses to.

Question Number	General Questions
1.	Do you consider the capacity requested by HH customers but not being utilised to be spare capacity or reserved capacity?
2.	Do you agree with the proposer's view that HH customers are paying for spare capacity whereas NHH customers are not?
3.	Do you agree with the statement: All tariffs need to be derived on a consistent cost reflective basis for both existing and new tariffs?
4.	The planning process for domestic and small non-domestic customers is based on a diversified maximum demand assumption, whereas for medium-large customers it is based on agreed capacity. Do you consider the current process correct for deriving NHH and HH tariffs as set out under the CDCM?
5.	There is a perception that there is notional spare capacity created by HH customers. Is this correct?

6.	If you think that NHH customers should be picking up some proportion of this notional spare capacity, is the proportion ⁷ suggested in this CP appropriate?
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6.2 Responses should be submitted using Attachment 1 to dcusa@electralink.co.uk no later than **Friday, 17 April 2015**.

6.3 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.

7 NEXT STEPS

7.1 Responses to the Consultation will be reviewed by the DCP 160 Working Group. The Working Group will then determine the progression route for the CP.

7.2 If you have any questions about this paper or the DCUSA Change Process please contact the DCUSA helpdesk by email to dcusa@electralink.co.uk or telephone 020 7432 3017.

ATTACHMENTS

- Attachment 1 – DCP 160 Response Form
- Attachment 2 – DCP 160 Change Proposal

⁷ The factor proposed is the ratio between the average maximum demand and capacity from a similar HH tariff.