|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Assumptions** | | | | | | | | | |
|  |  |  |  |  |  |  |  |  |  |
| **ID** | **DCUSA text reference** | **Assumption** | **Worksheet reference** | **Description** |  | **Type** | **Justification** | **Grouping** | **Proposed Solution** |
| 1 | - | 132kV/EHV adjustment to NUFs | CDCM; Load & loss characteristics | An adjustment has been applied to NUFs based on the share of load going through 132kV/EHV.  This is not specified in the DCUSA, but has been implemented to reflect that some load from customers at the HV and LV levels will go through 132kV/EHV transformation and, consequently, not all customers use the EHV part of the network. This adjustment helps to avoid double counting volumes throughout the model. The legal text would benefit from clarification on how the charges should be adjusted for the share of load going through 132kV/HV. |  | Part 2 | Clarification only. Believe text description should refer to 132kV/HV. | CDCM - Housekeeping (minor) | Include a para 58A detailing network use factors. |
| 2 | Schedule 16, para 26 | Diversity allowance for 132kV/EHV | CDCM; Load & loss characteristics | It has been assumed that the diversity allowance for 132kV/EHV network level is equal to that for 132/EHV. |  | n/a | Change not necessary. Believe text description should refer to 132kV/HV | No Action | The legal text only specifies the need for diversity allowances at GSP, 132kV, EHV and HV and not at transformation levels; hence 132kV/HV is no different to e.g. 132kV/EHV |
| 3 | Schedule 16, para 32-37; 64; 66 | Direct input of service model asset values | CDCM; Inputs by customer type | It has been assumed that DNOs will calculate service model asset values by customer category internally, to be entered as an input to the CDCM. |  | Part 2 | Amendment to means of input; no impact on tariff calculation | CDCM - Housekeeping (major) | Replace para 32-36 with *'For each tariff, the DNO Party specificies a service model reflecting the typical dedicated assets operated for the benefit of an individual user on that tariff*' |
| 4 | Schedule 16, para 47 | Loss adjustment factor for 132kV/EHV | CDCM; Load & loss characteristics | It has been assumed that the loss adjustment factor for 132kV/EHV network level is equal to that for EHV/HV. |  | Part 2 | Clarification only. Believe text description should refer to 132kV/HV. | CDCM - Housekeeping (minor) | Add to para 47: 'For each network level, the DNO Party determines a single loss adjustment factor to transmission relating to Exit Points from its network at that level. These loss adjustment factors should be representative of average losses at the time of system simultaneous maximum load. *Losses for 132kV/HV network level are assumed to be equal to losses for the EHV/HV network level*' |
| 5 | Schedule 16, para 53 | Reactive power discounts | CDCM; Volume adjustments | It has been assumed that reactive power charges are not discounted for LDNO discounts, despite not being explicitly mentioned as being treated in this way in the legal text (e.g. paragraph 99 does not mention reactive power). |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Amend para 53 'The volume forecasts *for active units, capacity and reactive units* for portfolio tariffs…' |
| 6 | Schedule 16, para 62 | Volumes subject to charges | CDCM; System peak demand | It has been assumed that peak load that matches ‘volumes subject to charges’ is comprised of three elements: 1. Calculation of peak load based on kWh charged to unit rates. 2. Calculation of peak load based on kVA charged to capacity and exceeded capacity charges. 3. Calculation of peak load based on estimated maximum load used to calculate fixed charges. This would benefit from a clarification of the legal text. |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Amend para 62: 'For demand users*, volumes subject to charges in respect of each network level is calculated as the sum of: (i) peak load based on kWh charged to unit rates; (ii) peak load based on kVA charged to capacity and exceeded capacity charges; and (iii) peak load based on estimated maximum load used to calculate fixed charges, taking into account [account is taken of]* differences between the diversity allowance in the network model and the diversity of each customer group *[in order to ensure that the estimated load matches the volumes subject to charges in respect of each network level]*.' |
| 7 | Schedule 16, para 70 c ii | Correction factor for customers with 0 coincidence to peak, or no load characteristic data. | CDCM; Pseudo-load coefficients | The correction factor calculated in Section 106-G (row 118) makes an assumption that if either the result of step 1 or coincidence factor is zero, then a correction factor of 1 should be used.  This is done to control for missing data (which results in step 1 being zero) and for customers that have zero coincidence (which would result in the correction factor being zero). Both cases would result in a pseudo-load coefficient of zero (and therefore unit rates of zero) if not controlled for. This modelling assumption this imposes is that these customers are assumed to have a flat load during the red period. |  | Part 2 | Clarification only. Believe text description should refer to section 105-G | CDCM - Housekeeping (minor) | Amend para 70 (c) (ii): 'calculate a correction factor for each user type as the ratio of the coincidence factor to load factor, divided by the result of the calculation above*, except where either the load factor or the calculation above is zero in which case the correction factor should be set to one.*' |
| 8 | Schedule 16, para 70 c iv | Aggregation of pseudo-load coefficient for UMS customers | CDCM; Pseudo-load coefficients | It has been assumed that the aggregation of pseudo load coefficients for UMS customers applies only to steps 1 and 2 of paragraph 70 c. That is, step 3 (which is described in Schedule 16, paragraph 70 c iii), is not subject to aggregation with respect to UMS customer categories. This interpretation was approved by a majority of DNOs. It was noted that this part of the DCUSA text was vague and should be clarified. |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Amend para 70 (c) to only apply to metered customers (e.g. 'the pseudo load coefficient*for each metered customer group* is calculated as follows:' Add para 70 (d) which will apply to unmetered customers: '*The pseudo load coefficient for each unmetered customer group is calculated as follows: (i) For each unmetered customer group, calculate the ratio of coincidence factor to load factor that would apply if units were uniformly spread within each time band, based on the estimated proportion of units recorded in each relevant time pattern regime that fall within each distribution time band and the assumption that the time of system simultaneous maximum load is certain to be in the red or black (as appropriate) distribution time band; (ii) Calculate a single correction factor for all unmetered customers groups as the volume weighted average of the ratio of the coincidence factor to load factor, divided by the result of the calculation above;* (iii)...' |
| 9 | Schedule 16, para 71 | Unit rates for generation | CDCM; Initial unit rates | Paragraph 71 does not include a term to transform average load into load at system peak. The principle of the methodology is that users are charged based on their contribution to peak demand. Based on equivalent formulae elsewhere in the DCUSA text (e.g. Schedule 16, paragraph 68), it would be reasonable to suspect that the pseudo load coefficient should be applied at this point: also reflecting the fact that assets peak at times other than when the system peaks. It has therefore been assumed that the pseudo load coefficient should be included in the formulae in paragraph 71.  This treatment was approved by a majority of DNOs. It was implemented under the understanding that a change proposal would be raised at a future date to address the omission in the legal text. |  | Part 1 | The model has historically been inconsistent with the legal text. So arguably part two in that we are just aligning legal text to model. But also arguably part one as, if the model were aligned to the legal text previously, this would have an impact on charges. | CDCM - Legal text and model mis-aligned | Add term to multiply by pseudo load coefficient in both formulae under para 71: '[p/kWh from network model assets] = –100\*[network level £/kW/year]\**[Pseudo Load Coefficient]\**[user loss factor]/[network level loss factor]\*(1 – [contribution proportion])/[days in year]/24 [p/kWh from operations] = –100\*[transmission exit or other expenditure £/kW/year]\**[Pseudo Load Coefficient]\**[user loss factor]/[network level loss factor]/[days in year]/24' |
| 10 | Schedule 16, para 72A | Equalisation of LV Network and equivalent non half-hourly charges | CDCM; Initial unit rates | There are several different ways that the intention of paragraph 72A could be implemented.  In equalising average charges for LV Network tariffs with the equivalent non half-hourly volume-weighted average charges, the following assumptions have been made: 1. UMS customers falling under profile class 1 are excluded from the adjustment. 2. “Equivalent” is interpreted to imply that charges should be equalised for a given time band distribution. That is, for the purposes of the adjustment, LV Network customers should be assumed to have the same time band distributions as a weighted average of the equivalent non-half hourly customers. 3. “Volume-weighted” should be interpreted as being weighted according to peak load based on average pseudo load coefficients by network level.  As such, equalisation is implemented as an adjustment to the pseudo load coefficient (as opposed to initial unit rates, for instance). |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Amend para 72A: 'An additional set of correction factors is applied to the LV Network Domestic and LV Network Non-Domestic Non-CT tariffs and the non-half-hourly-settled tariffs for profile classes 1 to 4, so as to ensure that the average charges produced by the LV Network Domestic tariff *in respect of each distribution time band* are equivalent to a volume-weighted *(based on peak load)* average of the *[non-half hourly-settled tariffs for profile classes 1 and 2] 'domestic unrestricted', 'domestic two-rate' and 'domestic off peak (related MPAN)' tariffs*, and the average charges produced by the LV Network Non-Domestic Non-CT tariff are equivalent to a volume-weighted average of the *[non-half-hourly-settled tariffs for profile classes 3 and 4] 'small non-domestic unrestricted', 'small non-domestic two-rate' and 'small non-domestic off peak (related MPAN)' tariffs*.' |
| 11 | Schedule 16, para 74 | Standing charges for “off-peak (related MPAN)” tariffs | CDCM; Capacity charges | ‘Domestic Off Peak (related MPAN)’ and ‘Small Non Domestic Off Peak (related MPAN)’ user categories do not receive standing charges, but have standing charge factors of 100% at the LV circuit level. We assume that standing charges for related MPANs are paid by the main MPAN, so this treatment is intended to avoid double charging. The legal text could benefit from a clarification of this point. |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Remove para 82 and amend para 81: 'For the *LV HH metered, LV Sub HH Metered and HV HH Metered tariffs [listed below],* the unit costs calculated by the formula above are allocated to the capacity charge. The exceeded capacity charge for half hourly settled demand users, except unmetered users, is calculated using the same formula, but with the customer proportion set to zero. *For the Domestic Off Peak (related MPAN) and Small Non-Domestic Off Peak (related MPAN) tariffs, the fixed charges are set to zero. For all other tariffs the unit costs calculated by the formula above are allocated to the fixed charge.'* |
| 12 | Schedule 16, para 80 | LV diversity factor | CDCM; System peak demand | In undertaking the calculation described in paragraph 80, the following assumptions have been used: • Where the legal text refers to ‘agreed import capacity’ forecast import capacity plus exceeded capacity has been used. It has been assumed that the legal text will be updated to reflect this.  • “Domestic Off Peak (related MPAN)” and “Small Non Domestic Off Peak (related MPAN)” have been excluded from the calculation of maximum demand. This is because these are related MPAN categories whose maximum demand would be captured under other customer categories. • System peak load has been calculated using the pseudo-load coefficient, instead of a standard load coefficient as this is consistent with the treatment of system peak load in the rest of the model. |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Amend para 80: 'The diversity allowance for the LV circuit level is defined as the amount by which the aggregate maximum demand load determined for that network level exceeds the estimated demand at the time of system simultaneous maximum load. The aggregate maximum demand is calculated by aggregating *[agreed]* import capacities *(both agreed and exceess)* for half hourly settled users, and estimated capacities for non half hourly settled user groups *excluding the 'domestic off peak (related MPAN) and small non-domestic off peak (related MPAN)' groups*. *The simultaneous maximum load is calculated by aggregating a contribution for each customer group, determined from the volume forecast for each unit rate multiplied by the pseudo load coefficient for that unit rate.*' |
| 13 | Schedule 16, paragraphs 85-86 | Service model replacement costs | CDCM; Service model | It has been assumed that service model asset values should not be charged for, and should only be used as a proxy for allocating operating and maintenance expenditure. In general, the text could benefit from better explanation of how costs should be allocated to service models. |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Amend para 85: '*[Other expenditure]**Operation and maintenance costs associated with service model assets* allocated to the LV customer and HV customer network levels are included in the fixed charge for each tariff where there is such a tariff component' |
| 14 | Schedule 16, Paragraph 87a | Reactive power charge “unrestricted unit rate” | CDCM; Reactive power charges | The legal text should clarify what “unrestricted unit rate” should mean. Discussions with the Expert Panel suggested that this implies using the formulae set out in paragraphs 68 and 71, except using a load coefficient rather than a pseudo load coefficient. |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Include formulae for the calculation of 'unrestricted unit rates' in para 87: '(a) Calculate what the contribution to a single unrestricted unit rate in p/kWh from each network level would be: *[p/kWh from network model assets] = 100\*[network level £/kW/year]\*[user loss factor]/[network level loss factor]\*[load coefficient]\*(1 – [contribution proportion])/[days in charging year]/24 [p/kWh from operations] = 100\*[transmission exit or other expenditure £/kW/year]\*[user loss factor]/[network level loss factor]\*[load coefficient]/[days in charging year]/24*' |
| 15 | Schedule 16, Paragraph 99/125 | Reactive power charge discount for generation | CDCM; Volumes adjustments | Paragraphs 99/125 do not state whether reactive power charges should be discounted for generation. It has been assumed that they are not discounted and that the legal text should be updated to reflect this. |  | Part 2 | Clarification only | CDCM - Housekeeping (minor) | Amend para 99: 'For generation users, the unit rate element*s* *(p/kWh and p/kVArh)* are [(p/kWh) is] not discounted' |