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| **Assumptions** | | | | | | | | | |
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| **ID** | **DCUSA text reference** | **Assumption** | **Worksheet reference** | **Description** |  | **Type** | **Justification** | **Grouping** | **Proposed Solution** |
| 1 | Schedules 17/18 | Outputs to other models | CDCM; Outputs to other models | Schedule 16 does not define which parts of the CDCM should be taken as inputs to the EDCM and PCDM. Some of these inputs are defined in Schedules 17/18 – namely paragraphs 9.2 and 15.11 with respect to system simultaneous maximum load and the Diversity Allowance. Where are these defined, they are identified using table numbers from the existing models. We assume firstly that these table references will be updated in Schedules 17/18 to reflect the current table reference numbers, and secondly that the outputs exported to the EDCM and PCDM should match the outputs used by the existing models. For instance, system simultaneous maximum load should be exported to the EDCM before adjusting for standing charges (as per the existing CDCM table 2506) and not after adjusting for standing charges (as per existing CDCM table 2611) |  | Part 2 | Legal text change required to use new model references | CDCM - Housekeeping (minor) | **Quick Fix:**  Request CEPA/TNEI to update table references in the model to be used for 2020/21 charges to include the old table reference so that DNOs can still comply with the existing legal text (which specifies table references from the old model) when setting 2020/21 charges.  This requires the ‘System peak load, all unit rates, total’ in CDCM model section 106-c to include in its reference table number 2506, and the *‘Adjusted network model cumulative diversity factor’ in CDCM model section 102-A to include in its reference table number 2611.*  **Longer term solution:**  Define outputs to other models in CDCM legal text, and cross-reference these clauses of Schedules 17 and 19 to the new clauses in the CDCM |
| 2 | Schedule 17, Section 2 | FCP inputs | EDCM FCP; FCP inputs | The model assumes that this is only relevant to the calculation of the power flow inputs. |  | n/a | No change needed, correct assumption | No Action |  |
| 3 | Schedule 17, paragraph 6.2 | Power flow inputs | EDCM FCP; FCP inputs | The model assumes that demand flows are entered as a negative value and that generation flows are entered as a positive value. |  | n/a | No change needed, correct assumption. Note – we have suggested a change for LRIC but not FCP. Don’t think it matters in FCP as there is no reference to demand or generation dominance in this paragraph, where in LRIC there is. | No Action |  |
| 4 | Schedule 17, paragraph 6.2 | Generation and demand power flow inputs | EDCM FCP; Charge 1 (FCP) | The model assumes that where generation and demand power flow inputs are entered separately, these should be added together before carrying out the calculations described. |  |  |  |  |  |
| 5 | Schedule 17, paragraph 6.2 | Super-red rate calculation | EDCM FCP; Charge 1 (FCP) | The model assumes that the calculation of the super-red rate for all other connectees should have the open brackets before the terms R1 and R2 removed. |  | Part 2 | Clarification only | EDCM (FCP Only) – Housekeeping (minor) | Amend formula in clause 6.2 (after ‘For all other connectees’) to:  '[p/kWh super-red rate] = [parent charge 1 £/kVA/yr] \* (abs[A1] – (R1 \* [Average kVAr/kVA] / [Average kW/kVA])) / (SQRT(A1^2 + R1^2)) / [Super-red hours] \*100 + ([grandparent charge 1 £/kVA/yr] \* (abs[A2] – (R2 \* [Average kVAr/kVA] / [Average kW/kVA])) / (SQRT(A2^2 + R2^2)) / [Super-red hours] \*100)' |
| 6 | Schedule 17, paragraph 6.2 | Negative contributions | EDCM FCP; Charge 1 (FCP) | The model assumes that the sentence “Any negative contributions to the [p/kVa/day capacity charge] or the [p/kWh super-red rate] from the parent or the grandparent network groups are set to zero.” means that after calculating the network group, parent group and grandparent group elements of each charge, any of these that are negative are set to zero. |  |  |  |  |  |
| 7 | Schedule 17, paragraph 8.3 | DSM adjustment | EDCM FCP; Charge 1 (FCP), Import super-red | The model assumes that the DSM adjustment can be made to the charges as calculated in Schedule 17 Section 6, rather than to the “raw” FCP inputs in order to simplify the modelling. This is because the charges are ultimately linearly dependent on the FCP charge inputs. |  | n/a | No change needed; order of calculation in model and legal text does not align but with no impact on charges and so no need for change | No action |  |
| 8 | Schedule 17, paragraph 8.3 | Super-red DSM adjustment | EDCM FCP; Import super-red | The model assumes that “the DSM-adjusted remote (or parent and grandparent) element of the FCP charge 1 is applied to units consumed during the super-red time band” means that the super-red import charge is adjusted for DSM. |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend the last sentence of para 8.3: ‘The DSM-adjusted local element of the FCP charge 1 is applied to the *[Maximum]* Import Capacity *charge,* and the DSM-adjusted remote (or parent and grandparent) element of the FCP charge 1 is applied to *[units consumed during]* the super-red *unit rate [time band].’* |
| 9 | Schedule 17, paragraph 9.2 | Part-year adjustment | EDCM FCP; Capacities Transmission | The model assumes that the adjustment for part-year referenced in this paragraph will apply to both the kW/kVa parameter and maximum import capacity. |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend definitions after para 9.2:  ‘Total EDCM peak time consumption (in kW) calculated by multiplying:   1. The Maximum Import Capacity of each Connectee *(if necessary adjusted for Connectees connected for part of the Charging Year by multiplying by the proportion of the year for which the Connectee is expected to be connected)*; by 2. The forecast peak-time kW divided by forecast maximum kVa of that Connectee (adjusted for losses to transmission and, if necessary, for Connectees connected for part of the Charging Year *by multiplying by the proportion of the super-red period for which the Connectee is expected to be connected)* and aggregating across all EDCM Customer demand.’ |
| 10 | Schedule 17, paragraph 9.2 | kW/kVa part-year adjustment | EDCM FCP; Capacities | For a part-year adjustment to super-red kW/kVa, the model assumes that this is calculated by multiplying by the proportion of super-red hours as a customer and dividing by the proportion of the year as a customer |  | Part 2 | Clarification only | EDCM (LRIC and FCP) – Housekeeping (minor) |
| 11 | Schedule 17, paragraph 9.2 | Losses to transmission adjustment | EDCM FCP; Transmission | The model assumed the losses to transmission adjustment only applies to the kW/kVA parameter |  | Part 2 | Clarification only | EDCM (LRIC and FCP) – Housekeeping (minor) |
| 12 | Schedule 17, paragraph 10.3 | Part-year adjustment | EDCM FCP; Capacities | The model assumes that both chargeable capacity and the capacity eligible for GSP credits should be adjusted for part-year connected customers. |  | 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. | EDCM (LRIC and FCP) – Legal text and model mis-aligned | Amend definitions after para 10.3:  ‘Capacity eligible for credits (in kW) is the capacity that is made available by the generator under the agreement with the DNO, *if necessary adjusted for Connectees connected for part of the year by multiplying by the proportion of the year for which the Connectee is expected to be connected.’* |
| 13 | Schedule 17, paragraph 12.2 | Part-year adjustment to capacity | EDCM FCP; Capacities | The model assumes that the part-year adjustment to the capacity described here, and all other part-year adjustments to capacity, simply involve multiplying the capacity by the proportion of the days in which the customer is connected. |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend definitions under para 12.2:  ‘Total Pre-2005 EDCM DG capacity is the aggregate maximum export capacity of all non-exempt EDCM generators that connected before 01 April 2005, adjusted *(by multiplying by the proportion of the year for which the generator is expected to be connected)* for part-year connected generators. In the case of generators that have subsequently increased their maximum export capacity, the part of their capacity that was added after 1 April 2005 would be ignored.  Total 2005-2010 EDCM generation capacity is the sum of the maximum export capacities of all non-exempt EDCM generators that connected between 1 April 2005 and 31 March 2010, adjusted *(by multiplying by the proportion of the year for which the generator is expected to be connected)* for part-year connected generators.  Total Post-2010 EDCM generation capacity is the sum of the maximum export capacities of all non-exempt EDCM generators that connected on or after 1 April 2010, adjusted *(by multiplying by the proportion of the year for which the generator is expected to be connected)* for part-year connected generators. In the case of generators that originally connected before 1 April 2010 and have increased their maximum export capacity on or after 1 April 2010, the capacity that was added after 1 April 2010 should be included.  Total 2005-2010 CDCM generation capacity is the sum of the maximum export capacities of all non-exempt CDCM generators that connected between 1 April 2005 and 31 March 2010, adjusted, *(by multiplying by the proportion of the year for which the generator is expected to be connected)* for part-year connected generators.  Total Post-2010 CDCM generation capacity is the sum of the maximum export capacities of all non-exempt CDCM generators that connected on or after 1 April 2010, adjusted *(by multiplying by the proportion of the year for which the generator is expected to be connected)* for part-year connected generators’. |
| 14 | Schedule 17, paragraph 15.11 | Network asset rate calculation | EDCM FCP; Asset values | The model assumes that the network asset rate at each voltage level is calculated as the asset values for that voltage level divided by the product of maximum demand at the voltage level and the loss adjustment factor to that voltage level. |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend definitions after para 15.11:  ‘NAR L is the network asset rate at level L in £/kW based on the 500MW model *calculated as the asset values for that voltage level divided by the product of maximum demand at that voltage level and the loss adjustment factor to that voltage level’* |
| 15 | Schedule 17, paragraph 15.11 | Peak time active power consumption in (kW/kVA) | EDCM FCP; Import capacity | The model assumes that this is a customer specific parameter and is equal to the average forecast super-red kW/kVA. |  | Part 2 | Clarification only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend definitions after para 15.11:  ‘D is the peak time active power consumption *for each Connectee* in (kW/kVA). This is calculated as the *[historical peak-time] super-red* kW *import* divided by *[historical maximum]* kVA *capacity.’* |
| 16 | Schedule 17, paragraph 15.13 | NUFs for mixed import-export sites that are generation-dominated | EDCM FCP; Tariff inputs | The model assumes that the calculation described in this paragraph is carried out prior to NUFs being input into the model. |  | N/A | No change – point of interface into model is not a matter for the methodology | No action |  |
| 17 | Schedule 17, paragraph 16.1, 16.10 | Generation and transmission charge revenue | EDCM FCP; Import capacity | The model assumes that generation revenue should be explicitly deducted from the calculation of the EDCM Demand Revenue Target, whereas that transmission charges should be included in the overall revenue target and are therefore not deducted here. |  | N/A | No change – legal text is considered sufficiently clear as it stands | No action |  |
| 18 | Schedule 17, paragraph 17.1, 17.2 | Fixed charge calculation | EDCM FCP; Fixed | The model assumes that the formulae in Schedule 17 paragraph 17.2 can supersede the one for import charges in 17.1, as when the capitalised O&M percentage is 0%, the are equal. |  | n/a | No change – the legal text states at the end of the first section of para 17.2 ‘the calculation for the import fixed charge in paragraph 17.1 will not apply’, so this is considered explicit in legal text and not a modelling assumption. | No action |  |
| 19 | Schedule 17, paragraph 18.4-18.8 | Network use factor cap and collar | EDCM FCP; General inputs | The model assumes that this is calculated elsewhere and entered as an input. |  | n/a | No change – point of interface into model is not a matter for the methodology | No action |  |
| 20 | Schedule 17, paragraph 18.16 | Charging rate for indirect costs | EDCM FCP; import capacity | The model assumes that the reference to “for each connectee” is incorrect and that this in fact is a single rate across all connectees |  | 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. | EDCM (LRIC and FCP) – Legal text and model mis-aligned | Amend para 18.16:  ‘A p/kVA/day charging rate for indirect costs *[for each EDCM Connectee]* is calculated on the basis of historical demand at the time of the DNO Party’s peak and 50 per cent of Maximum Import Capacity of *[that] each* Connectee’ |
| 21 | Schedule 17, paragraph 18.17 | Multiplication by LDNO factor | EDCM FCP; Import capacity | The model assumes that the multiplication by the LDNO factor is the same as the scaling down by 50% as described in Schedule 17, Paragraph 26.11. Therefore, this multiplication is conditional on whether or not residual revenue is negative. |  | Part 1 | The legal text has historically been both internally inconsistent between paragraph 26.11 (which states that the 0.5 reduction should only apply if residual is negative) contradicts paragraphs 18.17 (which applies the 0.5 reduction regardless of residual) and 18.21 (which does not apply the 0.5 reduction at all). The model has been aligned with 26.11 but not 18.17 and 18.21 | EDCM (LRIC and FCP) – Legal text and model mis-aligned | **Quick fix:**  Amend definitions under para 18.6 to maintain existing assumption:  LDNO factor takes the value 0.5 is the EDCM Connectee is connected to an IDNO Party’s network *and residual revenue contribution rate as defined in paragraph 16.6 is positive,* and 1 otherwise.  Amend definitions under para 18.17 to maintain existing assumption:  LDNO factor takes the value 0.5 if the EDCM Connectee is connected to an IDNO Party’s network *and residual revenue contribution rate as defined in paragraph 16.6 is positive,* and 1 otherwise.  Amend definitions under paragraph 18.20:  Volume for scaling is calculated as the sum (0.5 + coincidence factor)\* import capacity *\*LDNO Factor LDNO factor takes the value 0.5 if the EDCM Connectee is connected to an IDNO Party’s network and residual revenue contribution rate as defined in paragraph 16.6 is positive, and 1 otherwise.*  Amend formulae and add definition to 18.21:  Import capacity based fixed adder in p/kVA/day = Fixed adder \* (0.5 + coincidence factor) *\* LDNO Factor LDNO factor takes the value 0.5 if the EDCM Connectee is connected to an IDNO Party’s network and residual revenue contribution rate as defined in paragraph 16.6 is positive and 1 otherwise.*  Amend paragraph 26.11  *…would be scaled down by a factor of 50 per cent, however, the scaling* [down will not apply where the residual revenue is negative] will only apply where the residual revenue contribution rate as defined in paragraph 16.6 is positive.  **For discussion:**  Is this the correct approach? It is logical that the residual charging application is not scaled down by 0.5 when the residual is negative (as this would result in an LDNO connectee paying more than an equivalent DNO connectee. But residual revenue being negative should note impact an LDNO connectee’s contribution to indirect costs, and only does so because… |
| 22 | Schedule 17, Paragraph 18.20 | Reference to Annex 3 | EDCM FCP; N/A | The model assumes that the reference to Annex 3 is a typo or legacy reference from a previous version. |  | Part 2 | Housekeeping Correction | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend definitions under para 18.20:  ‘EDCM NR and DOC capacity contribution is the sum of the import capacity based direct costs contribution from each EDCM Connectee *[(from annex 3)].* |
| 23 | Schedule 17, paragraph 18.20 | Reference to Annex 3 | EDCM FCP; N/A | The model assumes that the volume for scaling parameter is calculated incorrectly in this paragraph, and that this should in fact be equal to the volume for scaling as calculated in Schedule 17 Paragraph 18.17 |  | Part 1 | The model has historically been inconsistent with eh legal text. So arguably part two int hat 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. | EDCM (LRIC and FCP) – Legal text and model mis-aligned | Align definition of volume for scaling across para 18.20 and 18.17 |
| 24 | Schedule 17, paragraph 18.20 | FCP revenue estimate | EDCM FCP; Import super-red | The model assumes that the estimate of FCP recovery is made based on the super-red charge before it is adjusted as per Schedule 17 paragraph 19.7, in order to remove the change of a circular reference error. |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend definitions in para 18.20:  ‘Aggregate indirect cost contributions is the sum of the import capacity based and import sole use asset based indirect cost contribution *(before any adjustments under clauses 19.7 and 19.8)* from each EDCM Connectee.  SU recovery is the forecast notional recovery from the application of import fixed charges (before any rounding *or any adjustments under clauses 19.7 and 19.8)* for sole use assets relating to EDCM Connectees.  FCP recovery is the forecast notional recovery from the application of FCP charges (before any rounding *or any adjustments under clauses 19.7 and 19.8)* to all EDCM Connectees only. |
| 25 | Schedule 17, paragraph 19.5 | Rounding | EDCM FCP; Import capacity | The model assumes that this calculation is carried out before rounding |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend para 19.1: ‘The tariff application rules for the EDCM are the same as for the CDCM wherever possible. *Once all other calculations have been carried out,* each component of each tariff is rounded…’ |
| 26 | Schedule 17, paragraph 19.7 | Super-red adjustment | EDCM FCP; Import super-red | The model assumes that this calculation refers to the import capacity charge before bounding at zero, as otherwise it would never be negative. |  | n/a | No change needed – methodology follows logical order, with the step to bound being after this step | No action |  |
| 27 | Schedule 17, paragraph 19.7 | Part-year adjustment | EDCM FCP; Import super-red | The model assumes that the Average kW/kVA parameter referenced in this paragraph is the [Average kW/kVA] parameter without part-year adjustment |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend para 19.7: ‘If the EDCM import capacity charge (p/kVA/day) calculated above is negative and the Connectee’s average kW/kVA *[(adjusted for part year)]* is not equal to zero, the final EDCM super-red unit rate is adjusted as follows:’ |
| 28 | Schedule 17, paragraph 19.8 | Setting negative charges to zero | EDCM FCP; Import capacity, Import super-red | The model assumes that any negative import capacity charges or import super-red charges are set to zero before rounding. |  | n/a | Dealt with in solution to issue 40 | No action |  |
| 29 | Schedule 17, paragraph 19.9 | Transmission credits | EDCM FCP; Tariff inputs | The model assumes that “may include transmission credits” is wholly determined by the proportion eligible for credits, which is part of the input data. |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend para 19.9:  ‘Final EDCM export charges will have:   1. An export fixed charge on sole use assets (in p/day) 2. An export capacity charge (in p/kVA/day) *[, which might include transmission exit credits to qualifying generators.]* 3. An export super-red unit rate (in p/kWh) 4. An exceeded export capacity charge (in p/kVA/day)’ |
| 30 | Schedule 17, paragraph 20.6 | Exceeded export capacity charge | EDCM FCP; Exceeded export | The model assumes that no specific calculation is required for connectees with agreements with the DNO |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend para 20.6:  ‘(i) For Connectees other than those that have an agreement with the DNO, the terms of which require them, for the purposes of P2/6 compliance, to export power during supergrid transformer (SGT) outage conditions, the exceeded portion of the export capacity is charges at the same rate as the capacity that is within the Maximum Export Capacity.  *(ii)For Connectees which have an agreement with the DNO, the terms of which require them, for the purposes of P2/6 compliance, to export power during SGT outage conditions, the exceeded portion of the export capacity is charged a the capacity rate before the adjustment specified in clause 10.3 is applied.*  This is charged for the duration of the month in which the breach occurs.’ |
| 31 | Schedule 17, paragraph 20.9 | Exceeded import capacity charge | EDCM FCP; Exceeded import | The model assumes that this uses the import capacity charge before it is rounded but after it is bounded at zero to remove the negative values |  | n/a | Dealt with in solution to issue 40 | No Action |  |
| 32 | Schedule 17, paragraph 25.2 | LDNO discount calculation | EDCM FCP; LDNO calculations | The model assumes that, when calculating LDNO discounts, generation tariffs can have discounts other than 0% or 100% (as they do in the CDCM). |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend para 25.2:  ‘In each case, the discount applied to all CDCM tariff components. Discount percentages are capped *[to] at* 100 per cent.’ |
| 33 | Schedule 17, paragraph 25.2 | LDNO discounts for generators with no reactive power charge | EDCM FCP; LDNO calculations | The model assumes that LDNO discounts do not need to be calculated for the variants of the CDCM generation tariffs which do not have a reactive power charge. |  | Part 2 | Clarification Only | EDCM LRIC and FCP) – Housekeeping (minor) | Replicate clause 147 of Schedule 16 (which lists tariffs for discounts) at clause 25.3 of Schedule 18. |
| 34 | Schedule 17, paragraph 26.11 | LDNO scaling by 50% | EDCM FCP; Import Capacity | The model assumes that this refers to residual revenue as calculated in Schedule 17, Paragraph 18.8 and Schedule 17, Paragraph 18.20 |  | Part 2 | Clarification Only | EDCM (LRIC and FCP) – Housekeeping (minor) | Amend clause 26.11:  ‘For EDCM Connectees connected to the IDNO Party’s network, the capacity-based charge for the DNO Party’s indirect costs *(as per clause 18.18)* and the 20% share of residual revenue *(as per clause 18.20)* that is applies as a fixed adder, would be scaled down by a factor of 50 per cent, however, the scaling down will not apply where the residual revenue is negative.’ |