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| **Cadent Final Determination** | | | |
| **FDQ Query** | | | |
|  | | **SQ Reference number** | CADENT\_FDQ\_  18 | |
|  | | **Priority** | High | |
|  | | **Document Name** | FD modelling suite | |
|  | | **Topic/Activity:** | Disaggregation errors | |
|  | | **Question:** |  | |
|  | | As discussed in the two recent cost bilaterals we have noticed significant variation of unit costs across GDNs, within categories we would expect similar u/c’s (with some regional difference, e.g. Ln factor differential). However, looking at them, there is far more variation than we would expect, a prime example is connections where Scotland unit cost is circa 10% of another network.    Looking at the files we have subsequently identified 5 issues relating to the disaggregation of allowances in the Allowances files (i.e. Allowances\_File\_GD\_noRPEs and Allowances\_File\_GD\_incRPEs) and in the PCD files (Allowances\_PCD\_VD\_noRPEs and Allowances\_PCD\_VD\_incRPEs).  We are unsure if these corrections do resolve the range and request that you look at these urgently and consider the implications of the outcome based on latest corrected totex and these errors (assuming you confirm them).  **Error 1: Disaggregation weightings**  There is an error in the calculation of weightings in the normalisation files (sheet “Cal\_SubAdjCostShares”) which feeds the disaggregation of the totex allowance in the Allowances files.  In rows 180 to 235, where the file intends to add Gross Exclusions to the Gross Company Submitted Totex (modelled component), the values for the connections add back (to uplift to a central case) in row 222 is already in net. This is then further reduced by the application of the net to gross ratio - effectively reducing the connections add back twice by the net to gross ratio. As a result, the weighting for the connections lines is too low and this results in the allowances for connections being c. £9m too low.  This error has arisen in the Out\_Exclusion sheet in the normalisation files, where a unique formula has been applied to connections and reinforcements to convert the add back to the net number\*. This correction was previously needed as at DD, the add back was added directly to the Allowances files which are on a net basis. As the add back is no longer being added directly to the Allowances files, the connections and reinforcement add backs in the Out\_Exclusion sheet can remain in gross.  \*Note, the net to gross ratio for reinforcements is 1 so is it largely unaffected by this error.  **Error 2: Disaggregation – Transport & Plant and Other Capex**  There is a transposition error in the “Out\_SubAdjCostShares” sheet in the normalisation file, where the order of Transport & Plant and Other Capex has changed from that in the “Cal\_SubAdjCostShares” sheet. As a result, the weightings for Transport & Plant and Other Capex have been switched. E.g. see rows 462 and 463 in sheet “Cal\_SubAdjCostShares” and rows 65 and 66 in sheet “Out\_SubAdjCostShares”.  The table below shows the impact of errors 1 and 2.The numbers below are post efficiency and therefore please note the small impact on the overall totex allowance due to the balance of expenditure changing between opex, capex and repex.    **Error 3: Disaggregation of connection allowances**  The calculation to disaggregate connections allowance in the PCD files (Allowances\_PCD\_VD\_noRPEs and Allowances\_PCD\_VD\_incRPEs) is incorrectly using percentage splits based on the base case in our business plan tables, rather than the central case we provided in May 2020. (E.g. for EoE see rows 27 to 30 in Cal\_Disag\_Capex – note this affects all of our networks and feeds sheets Cal\_PCD, Cal\_PCD\_Ratchet and Cal\_PCD\_Final).  The uplifts for the central case only apply to new housing, existing and non-domestic connections and do not apply to FPNES. By using the base case splits, too much of the connections allowance is allocated to FPNES and too little to the other Connection PCDs.  To estimate the impact of correcting this issue, we calculated the appropriate uplifts to the base case by taking the gross add back in the Normalisation files (in the Cal\_Connections sheets) and dividing by the gross base case for new, existing and non-domestic connections only. We then applied this uplift to the relevant base case lines (new, existing and non-domestic) before calculating the appropriate split to apply to the modelled allowance.  We estimate correcting this issue will reduce the amount to allocated to FPNES by £3.63m and increase the amount allocated to the other connection PCDs by £3.63m.  The tables below show the estimated impact on FPNES.    **Error 4: Connections unit costs**  The PCD unit cost models (“PCD\_VD\_UnitCostModel\_noRPEs” and “PCD\_VD\_UnitCostModel\_incRPEs”) are using the incorrect connections workloads to estimate the unit costs in sheet “Cal\_SubWorkloadsAdj”. Currently, all of the connection workloads (including FPNES) in the file are uplifted for the central case, whereas only existing, new and non-domestic connection workloads should be uplifted.  In addition, there is a related issue in the synthetic cost file, where all of the connection workloads, including FPNES, have been uplifted by a similar amount to the uplift in the normalisation file. This is also incorrect, and a higher percentage uplift should have been applied to the new and existing housing, and non-domestic workloads and no uplift to FPNES. We have not yet estimated the impact of this error on the regression.  **Error 5: Disaggregation of allowances in the PCD files**  The disaggregation calculations in the PCD files (Allowances\_PCD\_VD\_noRPEs and Allowances\_PCD\_VD\_incRPEs) are incorrectly mixing post-efficiency numbers with pre-efficiency numbers. This error occurs in the “Cal\_PCD” and “Cal\_PCD\_Ratchet” sheets and arises due to the PCD model introducing outputs directly from other models which are pre-frontier challenge e.g. it is using data from the Technical Assessment and Non-Regression models (see sheets Inp\_TechAssessCostsAdj and Inp\_NonRegressAdj).  This issue is spread across the opex, capex and repex PCDs and we have listed the lines that we consider affected.   * “Specific line items” in rows 11-42 * Opex: Gas Holder Demolition * Opex: Work Management Other * Opex: SIU * Opex: Total Business Support * Capex: “TA-Separately assessed projects” * Capex: Capital Projects * Capex: PSUP * Capex: Electric Vehicles * Capex: SIU * Capex: Other Capex – NARM * Capex: Other Capex – Non-NARM * Capex: TA – Non-NARM * Repex: Other Repex-NARM   We also note that the calculation for Capex: TA-Non-NARM should exclude Electric Vehicles, but it is currently including it. | | |
|  | | **Confidential** | No | |
|  | | **FDQ raised by** | Kate Haycock | |
|  | | **Date Sent** | 6 January 2021 | |
|  | | **Response Due Date** | 11January 2021 | |
|  | | **Attachments:** | | |
|  | | **Response to Cadent:**  Error 1: We agree that there appears to be an inconsistency in the application of the net:gross calculation for connections (and reinforcement). We will amend the formulas for connections and reinforcement in the Out\_Exclusions sheets in the Normalisation files to correct this error.  Error 2: We agree that this is an error. We will update the Cal\_SubAdjCostShares sheet in each of the Normalisation files to wtich the order of Transport & Plant and Other Capex, so that they are consistent with the Out\_SubAdjCostShares sheet.  Error 3: We agree that this is an error. We will amend the Allowances\_PCD\_VD files to pull in the connections and reinforcement addbacks and update the formulas in the Cal\_PCD and Cal\_PCD\_Ratchet sheets accordingly.  Error 4: We agree that this is an error. We will amend the PCD\_VD\_UC file update the formulas in the Cal\_SubWorkloadsAdj sheet to remove the uplift from the FPNES workloads. Likewise, we will also ensure the uplift is applied consistently in the Capex\_SUC file.  Error 5: We agree that there is an inconsistency in the data used in the Cal\_PCD and Cal\_PCD\_Ratchet sheets. We will add in an additional Inp\_FrontierShift sheet, which will pull in the indices from the Allowances\_File. We will then multiply these through for the line items which are currently pulling through on a pre-frontier shift challenge basis. We will amend the formula for formula for Capital Projects PCD to exclude electric vehicles. | | |
|  | | **Further response**  Thank you for your response and confirmation that the above errors will be corrected. With regard to error 4, could you please confirm that you will correct the new housing, existing housing and non-domestic connection workloads as well as the FPNES workloads in the PCD files and GD2 Synthetic Cost file, as they are currently too low by virtue of calculating the P50 volume adjustment with reference to FPNES.  For example, currently the P50 adjustment factor in the GD2\_Synthetic Cost file (sheet Inp\_WorkloadUpdates) is:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Current P50 adjustment factor** | **2021/22** | **2022/23** | **2023/24** | **2024/25** | **2025/26** | | EoE | 1.334 | 1.335 | 1.336 | 1.337 | 1.338 | | Lon | 1.388 | 1.389 | 1.390 | 1.392 | 1.393 | | NW | 1.260 | 1.261 | 1.261 | 1.262 | 1.263 | | WM | 1.150 | 1.151 | 1.151 | 1.152 | 1.152 |   However, this has been calculated with reference to all connection costs including FPNES. We estimate that removing FPNES from this calculation increases the workload adjustments for new-, existing housing and non-domestic connections to:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Corected P50 adjustment factor** | **2021/22** | **2022/23** | **2023/24** | **2024/25** | **2025/26** | | EoE | 1.369 | 1.369 | 1.369 | 1.369 | 1.369 | | Lon | 1.408 | 1.408 | 1.408 | 1.408 | 1.408 | | NW | 1.330 | 1.330 | 1.330 | 1.330 | 1.330 | | WM | 1.174 | 1.174 | 1.174 | 1.174 | 1.174 |   **Response**  We confirm the following corrections will be made:   * in the GD2 Synthetic cost file, we will replace the adjustment factors with the proposed ones (which we could replicate) and remove the adjustment for FPNES; * in the PCD\_VD\_UnitCostModel files, we will update connections workloads in line with the correction above; * in the Allowances\_PCD\_VD files, we will update the calculation of the shared in Cal\_Disag\_Capex using the suggested adjustment factors to reflect the central case (error 3). | | |