Guidance

RIIO-ED2 Business Plan Data Template (BPDT) instructions and guidance

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This document sets out the instructions and guidance for completing Business Plan data templates, required as part of the process of setting RIIO-ED2.

This document is for people who are filling out the Business Plan data templates and want to know general and specific guidance for reporting Business Plan data. It explains the scope of the Business Plan data templates, what to consider when completing them, and where to find more information.

Contents

Associated Documents

RIIO-ED2 Sector Specific Methodology Decision Overview

https://www.ofgem.gov.uk/system/files/docs/2020/12/ed2_ssmd_overview.pdf

RIIO-ED2 SSMD Annex 1: Delivery Value for Money Services for Customers

https://www.ofgem.gov.uk/system/files/docs/2020/12/riio_ed2_ssmd_annex_1_delivering_value_for_money_services_for_customers.pdf

RIIO-ED2 SSMD Annex 2: Keeping Bills Low

https://www.ofgem.gov.uk/system/files/docs/2020/12/riio_ed2_ssmd_annex_2_keeping_bills_low.pdf

RIIO-ED2 SSMD Annex 3: Finance

https://www.ofgem.gov.uk/system/files/docs/2021/03/riio_ed2_ssmd_annex_3_finance_0.pdf

Enhanced Engagement Guidance

https://www.ofgem.gov.uk/system/files/docs/2020/07/ed2_enhanced_engagement_guidance.pdf

1. Introduction

Purpose

1.1   This document sets out the instructions and guidance for completing the Business Plan data templates (BPDTs) that support the submission of the electricity distribution network operators (DNOs) Business Plans. The BPDTs should be completed in accordance with these instructions and the definitions provided in this document.

1.2   The BPDTs comprise a set of templates (in MS Office Excel format) for reporting business plan data. They consist of a number of data entry sheets together with various summaries and are one element of the wider suite of information required to be provided to Ofgem to enable informed price control allowances to be set.

1.3   The BPDTs and these instructions provide a framework for the collection and provision of consistent information, in order to avoid varying interpretations of definitions and reporting requirements. These instructions are provided to ensure consistency of information contained in the BPDTs.

1.4   The BPDTs should be consistent with Business Plans submitted by DNOs and provide additional information and detail in support of them. These instructions do not set out the process for when draft and final Business Plans should be submitted or provide guidance on what should be included in Business Plans.

1.5   These instructions should be read alongside the RIIO-2 Business Plan Guidance Document and the Priorities and Work Plan of the RIIO-2 Challenge Group.

1.6   These instructions do not change any definitions or obligations contained within the electricity distribution licence applicable to the DNOs. In the event of any potential or perceived conflict between the licence conditions and these instructions, the licence conditions shall take precedence.

2. General Instructions for Completing the BPDT

Section Summary

This instruction and guidance document ('the instructions') provide a framework for the collection and provision of consistent information to support the well-justified business plans submitted by distributed network operators' (DNOs). The output from this process will be the DNOs completed business plan data templates (BPDT). Ofgem will use the information provided in the BPDT information to assist its assessment of the well-justified business plan submissions for RIIO-ED2

Reporting Arrangements

2.1   DNOs must provide the complete BPDTs in excel format.

2.2   DNOs must complete the BPDTs in full. If information is incomplete, the DNO should provide a clear explanation for why that is the case.

2.3   If DNOs have queries about the data template, or discover any errors following the completion of their BPDTs, they should raise those with Ofgem, as soon as possible, by email to RIIOED2@ofgem.gov.uk

2.4   Any resubmission of the BPDTs shall only to be made by agreement between Ofgem and the DNO and, in any such instance, the BPDTs should be resubmitted in full. Resubmission of the BDPTs must be accompanied by a letter signed by a Director of the DNO.

2.5   DNOs are required to risk assess their December 2021 final Business Plan submissions. More information on this is provided at section 5.1 of the latest version of Ofgem's Data AssuranceGuidance (DAG)[1]. Companies are expected to submit an irregular NetDAR alongside the main BP submissions.

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[1] https://www.ofgem.gov.uk/system/files/docs/2016/01/dag_guidance_document_v1.3_clean.pdf

2.6   Following the publication of our Methodology Decision in December 2020, Draft
        Business Plans were submitted to Ofgem and the Challenge Group on 1st July 2021,
        with Final Business Plans to be submitted on 1st December 2021.

BPDT Structure and data entry

2.7   The BPDTs have been separated into the following sections:

  • General tables: The Cover, Change Log and Navigation. Fixed Data tables are
    included to provide constant figures to be referenced whilst populating the BPDT
    tables.
  • Finance tables: Tables I1 to F8 collect financial information.
  • Summary tables: RPEs and Ongoing Efficiency, SI1, S1 to S3 and C1s provides a
    summary of key information including costs.
  • Activity tables: Tables C2 to CV39 collect cost and volume data for activities.
  • Asset volume tables: Tables V1 to V5 and AP1 collect asset volume changes and
    annual age profile information.
  • Memo tables: Tables M1 to M30 collect additional data to support deliverables,
    outputs and innovation.
  • NARMs tables: Risk Index Weightings and NARM profiles for ED1 and ED2.
  • Load Index tables: Load index data for substations and substation groups.

2.8   Certain fields require positive entries, whereas others require negative entries. Unless
        specified otherwise in the individual table instructions below, the following rules apply:

  • Costs are to be entered as positive values.
  • Contributions (customer or otherwise) are to be entered as negative values.
  • Cost recoveries are to be entered as negative values.
  • Volumes to be entered as positive numbers.

2.9   DNOs should only make entries in the indicated input fields. The excel workbook has
        not been locked or password protected, but DNOs must not make any changes to the
        formulae, headings, titles, format or structure contained in the template unless these
        instructions from Ofgem provide otherwise. Any such changes will inhibit Ofgem's
        ability to automatically migrate the submitted data out of the BPDTs, which may result
        in the DNO being required to resubmit the BPDT in its original format. Instead, any

issues or proposed changes identified should be communicated to Ofgem as soon as possible.

2.10 The BPDTs typically require the reporting of actual and forecast costs and workloads for RIIO-ED1, actual and forecast costs and workloads for RIIO-ED1 and the forecast costs and workloads for RIIO-ED2 (2023/24-2027/28). For specific programmes extending beyond RIIO-ED2, longer-term forecasts may be required and should be completed when indicated.

2.11 A financial year for the provision of information required will be a period of 12 months commencing on 1 April of each year and ending on 31 March of the following calendar year.

2.12 All costs should be provided in 2020-21 prices unless otherwise stated. Ofgem has provided the index to use for deflation/inflation purposes. This index, which is a yearly average composite of RPI and CPIH, can be found in the Universal Data worksheet of the BPDTs – titled Financial Year Average RPI-CPIH.

2.13 All costs should be exclusive of Real Price Effects (RPEs) and ongoing efficiencies.

2.14 The DNOs are responsible for ensuring that all annual historical data (costs and workloads/volumes) is fully reconcilable to their latest published Regulatory Reporting Pack (RRP). Where disaggregated reporting categories differ between the BPDTs and the latest RRP, matching parent categories should reconcile. If historic BPDTs figures fail to reconcile to the latest RRP, a clear explanation of the misalignment should accompany the business plan submission.

2.15 In the worksheets the numbers will be displayed to two decimal places. The DNOs are required to provide data to a minimum of two decimal places for actual data and one decimal place for forecast values, unless otherwise indicated in the guidance. Where a reportable value is zero the cell input should be zero. Where it is not applicable to the licensee, the cell should be left blank.

2.16 Financial values should reconcile with audited regulatory accounts. DNOs are required to provide all actual financial data to the highest reasonable level of accuracy available from their source systems, and commensurate with the purpose for which such data is intended, taking into consideration the appropriate allocations that are necessary to complete the tables.

2.17 Workload and outputs should be entered in the unit of measurement set out in this guidance or in the BPDTs. Workload units and outputs should be reported at the highest reasonable level of accuracy from the source systems and commensurate with the purpose for which such data is intended taking into consideration the appropriate allocations that are necessary to complete the tables.

Accounting Policies

2.18 All costs are to be entered on a Cash Basis (see RIIO-ED2 BPDT Glossary) and exclusive of atypical items except where specifically instructed to report data. Except where Ofgem guidance requires otherwise, the BPDTs should be prepared using the same accounting policies used in the financial statements, in accordance with UK GAAP or IFRS. In the event that the approach to preparation of the BPDTs differ from that required by the Ofgem guidance (for some or all years), DNOs must include appropriate details including quantification of the difference.

Use of Estimates and Allocations

2.19 Apportionments should be avoided wherever possible. However, where DNOs (and any affiliate or related party undertaking of the DNOs) have to do this to complete the tables, this must be noted in the BPDT Commentary (BPDTC) and the basis of apportionment provided. Changes in any apportionment methodology between time periods should also be highlighted.

Reporting Scope

2.20 The data presented in the BPDTs should relate to the activities of the DNOs whether carried out directly by the DNO or by another party on behalf of the DNO (e.g. related parties or third parties carrying out activities for the DNO) in accordance with requirements of SLC29.

Table by Table Narrative

2.21 Alongside the submission of the data template and the current requirement to provide an overview narrative, the company must provide a summary explanation of the information provided in each data worksheet through an additional BPDTC document.

2.22 DNOs must complete the BPTDC template which accompanies this guidance document. The BPDTC enables DNOs to give summary details on specific areas to aid Ofgem's understanding of the results from a number of perspectives. The BPDTC document incudes further instructions on how to complete it.

Definitions

2.23 The definitions set out in the RIIO-ED2 BPDT Glossary should be used to complete the template in a consistent way. DNOs must ensure that the definitions are clearly understood and are complied with when entering any data into the BPDTs. Where there is doubt or uncertainty, please refer to Ofgem for clarification. This is to ensure consistency and comparability of data entry across DNOs.

3. Instructions for completing admin and input worksheets

Cover Sheet

3.1   This worksheet provides a summary explanation of the BPDTs.

Changes Log

3.2   The purpose of this worksheet is to report any changes made in the Business Plan Data Tables by Ofgem. No Data input is required in this worksheet.

Navigation

3.3   This worksheet lists all other worksheets within the reporting pack, and provides hyperlinks to each. It links to the abbreviated worksheet name with the full name used in the guidance also provided.The DNO is not required to input any data on this worksheet.

Fixed Inputs

3.4   This worksheet requires the DNO to enter key data including the DNO name and the names of Related Parties.

3.5   The DNOs should enter the name of any relevant Related Party in Rows 25 to 39. This will automatically link to the C1 matrices.

I1 – Universal Data and I2 – Monthly Inflation

3.6   The purpose of these worksheets is to demonstrate the principles and calculations used to inflate from RIIO-ED1 price base (2012/13) to RIIO-ED2 price base (2020/21). No DNO inputs are required in these sheets.

3.7   I1 worksheet uses monthly inflation data in I2 to calculate the RPI/CPIH splice index, from which are derived annual inflation values (row 26) and the real to nominal price conversion factor (row 28).

3.8   In addition to this, other interest rate data is also stored here (rows 31-40), which is used in the F1-F6 worksheets for calculating principal accretion on DNOs' debt data. The interest rate data covers: Nominal; RPI real; CPIH real; LIBOR 1 Month; LIBOR 3 Month; LIBOR 6 Month; LIBOR 12 Month; SONIA; Credit Spread Assumption for Floating Rate Debt (LIBOR); Credit Spread Assumption for Floating Rate Debt (SONIA).

4. Instructions for completing the financial worksheets and commentary

Introduction

4.1 This section sets out the instructions and guidance for completing the financial worksheets of the BPDT. These comprise of I3 – BPFM Inputs; F1 - Debt for BPFM; F2a – Financial Summary (TWA); F2b – Financial Summary (YE); F3 – Fixed Rate Debt; F4 – Floating Rate Debt; F5 – Inflation Linked Debt; F6 – Debt Dataset; F7 – Data Validation; and F8 – Tax Inputs.

4.2 DNOs must also complete and submit the Financial Issues Commentary alongside the financial worksheets.

4.3 Unless otherwise stated in this document or in the BPDT, actual financial values should be provided in £ million to a minimum of three decimal places. Financial values should reconcile with audited regulatory accounts for historical years for which audited regulatory accounts have been produced. DNOs are required to provide all actual financial data to the highest reasonable level of accuracy available from their source systems, and commensurate with the purpose for which such data is intended, taking into consideration the appropriate allocations that are necessary to complete the tables.

4.4 Workload and outputs should be entered in the unit of measurement set out in this guidance or in the BPDT. Workload units and outputs should be reported at the highest reasonable level of accuracy from the source systems and commensurate with the purpose for which such data is intended taking into consideration the appropriate allocations that are necessary to complete the tables.

4.5 All financial values should be input as positive numbers unless otherwise stated. Where a reportable value is zero or not applicable to the DNO, then a zero should be input, rather than the cell being left blank.

4.6 I3 – BPFM Inputs and F8 – Tax Inputs are reported in real prices RIIO-ED2 price base. F1 - Debt for BPFM, F2a – Financial Summary (TWA), F2b – Financial Summary (YE), F3 – Fixed Rate Debt, F4 – Floating Rate Debt, F5 – Inflation Linked Debt, and F6 – Debt Dataset are reported in nominal prices.

4.7   Any definitions required to complete the financial worksheets can be found in RIIO-ED2 BPDT Glossary.

I3 – BPFM Inputs

4.8   The purpose of this worksheet is to provide a summary of information from the BPDT to be used as input values in the Business Plan Financial Model (BPFM).

4.9   The sheet is split into two sections. The first section is referred to as the mirror table, comprising the information that is required for the BPFM. The second section consists of detailed subtotal items that feed into the mirror table.

4.10   Most of the information in this worksheet is linked from other worksheets in the reporting pack, though there are also some DNO information inputs required within the sheet. These are described below.

4.11   BPFM Baseline Totex – capitalisation rate (applicable to all RIIO-2 years) (cells M23-Q29). The capitalisation rate for each component of baseline totex for each year is required. This data is used in the calculation of natural capitalisation rates (see ED-2 SSMD Annex 3 March 2021, 8.12).

4.12   Varant allowances (rows 40-91). This table, along with the variant allowances capitalisation rate and allocations tables underneath it, has been structured to accommodate DNO proposals for variant costs within RIIO-ED2. Variant activity labels should be listed in the spare label spaces in A52-A90, with the annual total cost entered into the corresponding cells in columns M-Q. Note that the allowance for "RPEs (non-variant allowances)" (row 50) are automatically calculated on the "OERPE1 – RPEs and OE" tab.

4.13   Variant allowances: capitalisation rate inputs (rows 94:143). This table is used to collect capitalisation rate inputs for variant activities. Rates should be provided for each year, for all rows where there are variant activity costs reported in the table above. The check cells in column R indicate where there have been costs reported in the variant allowances table, but capitalisation rate data has not been input.

4.14   Variant allowances: allocations (rows 147-196). Required information for variant allowances in the table above should be entered here.

- UM/PCD/Other: enter description of the mechanism for the variant activity (this section is for information only);

- TIM/non-TIM: item is either subject to Totex Incentive Mechanism or not subject TIM (this section is for information only);

- RPE Incl. or Excl.: item is either subject to RPEs or not (this section is for information only);

- Cap rate allocation (1 or 2): item's categorisation as belonging to one of the two capitalisation rate allocations;

- Attribution to totex subcategories: the % split of the item across each of the totex subcategories. This information is collected to allow allocation of costs to tax pools (see F8 – Tax Inputs for details on how allocation to tax pools is carried out); and

- Reference to BPDT commentary pack and Busines plan: reference to where a description of the item can be found, including details of the estimated cost and justification for the proposed treatments in this table.

4.15   BPFM Directly Remunerated Services (DRS) (rows 216-232). These cells do not require inputs as they draw from CV39 – DRS tab. However it's worth noting that this table flips the positive/negative signs of all DRS costs and revenues compared with how they are reported in CV39. This is due to the structure of the BPFM model – whilst DRS costs are entered into CV39 as positive, they are flipped to negative numbers for the BPFM's use. Conversely DRS revenues are entered into CV39 as negative, and are flipped to positive for the BPFM. It's also worth noting that this table shows DRS costs inclusive of indirect cost allocations.

4.16   Other revenue allowances: cost multipliers (rows 235-243). For draft business plan submissions DNOs' assumptions of cost multipliers should be entered here. In the BPFM, these cost multipliers are combined with the costs (rows 246-253) to project the associated allowances.

4.17   BPFM Pension Inputs (rows 260-262). Revised allowances and any known adjustments as part of the 2020 Reasonableness Review (EDE). For years prior to the 2020 Reasonableness Review historic actuals should be entered.

4.18   BPFM Statutory Depreciation Inputs (rows 260-262). DNOs' statutory accounts values of depreciation and capex. This information is used in financeability assessments for comparing companies' actual data with notional values in the BPFM.

4.19   Allowed Expenditure – Smart Meter Allowed Expenditure (row 267). Allowances for smart meter expenditure are required.

4.20   Forecast actual gearing (row 403). In addition to the financial data required in tabs F1 to F6, here we require DNOs' forecasts of actual gearing. This information is used in financeability assessments for comparing companies' actual data with notional values in the BPFM.

4.21   Bid preparation costs (row 489). Eligible NIC bid preparation costs should be entered.

4.22   Theft Recovery (rows 493-499). RIIO-ED1 historic and forecast values should be input in line with the subsequent paragraphs guidance. No forecast values should be entered for RIIO-ED2 period. The purpose of these inputs is to report costs, volumes and revenues associated with Theft Recovery activities as set out in CRC 5F (Treatment of income from recovery in respect of Relevant Theft of Electricity) and related to the provisions of Standard Condition 49 (Electricity Distribution Losses Management Obligation and Distribution Losses Strategy) of the electricity distribution licence.

4.23   Reported Income from Theft Recovery (row 487) is automatically deducted from actual controllable opex (ACO). The purpose of this is to ensure that the reported income is shared with consumers via the Totex Incentive Mechanism (TIM).

4.24   Theft Recovery inputs should exclude the reporting of income from services provided under Drectly Remunerated Services 5, Revenue Protection Services. Revenue Protection Services should be reported under worksheet CV39 – DRS.

4.25   The following terms are defined in RIIO-ED2 BPDT Glossary:

- Income from Theft Recovery
- Recovery of Costs
- Recovery of Value of Electricity Taken
- Forecast Amount of Revenue Relating to Theft Recovery
- Total Costs Incurred in Respect of Relevant Theft of Electricity.

4.26   When reporting under:

- Recovery of Value of Electricity Taken (row 494), kWh means the estimated units of electricity unaccounted for that can be attributed to the reported income from

theft recovery. Lost electricity relating to a successful case may have accumulated over a number of years and the volume figure should only be reported once in the worksheet, against the year the associated income from theft recovery is reported.

- Number of cases (row 495), 'cases' refers to the number of successful cases associated with any income from theft recovery reported in this worksheet for the Regulatory Year under report.

4.27   Total costs incurred in respect of relevant theft of electricity (eg labour, material costs) (row 498) is for information only and does not feed into any calculations elsewhere in this reporting pack. The costs are captured in other activities reported in this reporting pack and are therefore not captured as a separate cost item in worksheet C1. When reporting 'instances investigated', this means the total of:

- Initial investigations (those yielding no further action by the licensee) – DNOs should only report the associated volume for an initial investigation once in this worksheet in the Regulatory Year the licensee determined no further action should be taken.[2]
- Successful cases associated with any income from theft recovery reported for the Regulatory Year under report.
- Unsuccessful cases (where no income from theft recovery has been reported) – DNOs should only report the associated volumes once in this worksheet, in the Regulatory Year the case was closed.

F1 – Debt for BPFM

4.28   The main function of this worksheet is to derive average debt volumes for embedded and new debt types that are consistent with the definition of average debt in the BPFM interest calculations (see sheet named Finance&Tax (actual) therein). These recalculated average volumes are then used to derive the actual cost and proportion of new debt issuance by type, also for use in the BPFM.

4.29   In the BPFM, average net debt is defined as the average of "Opening net debt after equity issuance" and "Closing net debt before tax, interest and dividends". In

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[2] An initial investigation could incur costs across multiple years, so this avoids any potential double counting of the associated volume.

summary, the derivation of these opening and closing balances in F1 requires to deduct any equity issuance from the opening net debt volumes sourced from F2b, and deduct interest expense, dividends and net taxes (allowance minus cost) from the closing net debt volumes from F2b. The average of opening and closing debt thus obtained is consistent with the definition used in the BPFM.

4.30 The derivation of opening and closing volumes under the BPFM definition requires some preliminary operations:

- Allocate equity issuance as sourced from tab F2a (row 268) to debt types. This is achieved by assuming that any equity issuance reduces new debt issuance requirements, according to the same proportion in which new debt types are issued. No equity issuance is allocated to embedded debt.
- Allocate dividends as sourced from tab F2a (row 271) to debt types, by using the proportions of embedded and new closing debt types from F2b. This is consistent with the dividend calculations in the BPFM, where dividends are derived as a percentage of closing equity.
- Allocate debt adjustments from the yellow input cells in F2b (rows 194 to 200) to embedded and new debt types. As for dividends, this is achieved by using the proportions of closing embedded and new debt types on total closing debt from F2b. This operation allows to reconcile volumes of debt types with total closing debt under the regulatory definition.
- Similarly, interest adjustments from the yellow input cells in F2a (rows 212 to 221 and rows 226 to 235) are allocated to interest expense by debt type according to the share of interest expense by debt type on total interest expense. Interest adjustments are entirely allocated to cash interest payments, so that the principal inflation accretion component is unaffected and as sourced from sheet F2a. This operation ensures that interest expense by debt type thus derived is consistent with total interest expense under the regulatory definition from sheet F2a.
- In theory, net taxes as defined in the BPFM (tax allowance minus tax paid) should also be allocated to embedded and new debt types. However, this would not only require to source tax allowance and tax paid from the BPFM, but also introduce a circularity issue, as tax paid in the BPFM depends on interest expense, which in turn is derived from average debt from this BPDT:

$$\text{Tax paid (BPFM)} \leftarrow \text{Interest expense (BPFM)} \leftarrow \text{Average debt (BPDT)} \leftarrow$$
$$\leftarrow \text{Tax allowance (BPFM)} - \text{Tax paid (BPFM)}$$

In other words, in order to calculate Tax paid in the BPFM one needs to use average debt from the BPDT, which in turn is derived by deducting net taxes (sourced from the BPFM) from the BPDT closing debt. In this BPDT this predicament is resolved with the simplifying assumption that Tax allowance = Tax paid. The implication is that net taxes have no impact on debt balances and can be ignored in the workings of this sheet F1.

After all the preliminary operations described above are completed, debt balances as per BPFM definition can be determined for embedded and types of new debt.

4.31   Actual debt balance by type for BPFM modelling (including adjustments calculated below), rows 12-105. This top section of sheet F1 explicitly calculates net debt balances for embedded and new debt types, consistently with the methodology used in the BPFM net debt calculations (sheet Finance&Tax (actual) therein). For example, opening embedded debt (after equity issuance) in row 17 is calculated by deducting the allocated equity issuance (which only in this specific instance is zero) from opening embedded debt. Closing debt (before interest and dividends) in row 20 is derived by adding to opening embedded debt (after equity issuance) the operating result plus the impact of debt adjustments previously calculated. Operating result is ascertained in row 18 as the debt change in year minus embedded debt interest expense (which includes the allocated interest adjustments), allocated dividends and impact of debt adjustments (as previously discussed, net taxes can be ignored and are greyed out accordingly). This procedure is replicated for all debt types, so that the corresponding balance for total embedded and new debt is also determined (rows 89-105).

4.32   Average debt balance and cost of debt for use in BPFM (rows 106-132). This section uses information from the detailed debt balances to calculate average debt volumes, actual cost of debt and proportion of new debt issuance by type of debt under the BPFM definition. Ultimately, average embedded debt (row 109) is used in the BPFM to determine the new debt issuance requirement (as total average debt requirement minus average embedded debt), which in turn is allocated to types of new debt according to the proportions calculated in this sheet (rows 126-129). New debt interest expense is calculated in the BPFM by using actual cost of debt also from this sheet (rows 119-122).

4.33   Supporting workings for derivation of actual debt balances by type (rows 133-274). The remainder of this sheet features supporting workings to determine the previously discussed allocations of equity issuance (rows 135-167), debt adjustments (rows 168-

206), dividends (rows 207-217) and interest adjustments (rows 218-274) to embedded and new debt types, for use in the detailed debt balances constructed above.

F2a – Financial Summary (TWA)

4.34 The purpose of this worksheet is to provide summary information on actual debt volumes and debt cost position of licensees as well as actual equity issuance and dividend forecasts. This will enable actual company financing positions to be used as input values into the BPFM, for the purposes of calculating financial ratios based on actual company financing structures and costs. The debt volume amounts in this worksheet are derived on a Time Weighted Average (TWA) basis, whilst all inputs and calculations are expressed in nominal prices (£m).

4.35 Rows 30-61 reflect embedded debt volumes and costs pre interest rate and inflation derivatives; rows 62-93 reflect the impact of interest rate and inflation derivatives on embedded debt volumes and costs. Rows 94-128 use the information from the two previous sections to express embedded debt volumes and costs post interest rate and inflation derivatives (on a TWA basis).

4.36 The embedded debt sections in rows 30-128 are populated automatically based on the embedded debt data input into F6 – Debt Dataset and processed into sheets F3 - Fixed Rate Debt, F4 - Floating Rate Debt and F5 - Inflation Linked Debt. As a result, annual TWA embedded debt volumes and interest expense for all financial instruments inputted in F6 are aggregated and summarised in said sections of sheet F2a.

4.37 Volumes of new forecasted debt raised starting from year 2021/22 and related interest expenses are determined in the section in rows 129-195 ("New Debt Composition & Expense Pre and Post Derivatives (notional principal outstanding value)"). New debt volumes and interest expenses are assumed as pre and post derivatives, i.e. there is no distinction between debt raised in a particular format directly and that raised in that format indirectly through derivatives. This is because it is assumed a DNO may be able to forecast which format liability they would seek to raise for future years but may not be able to forecast whether this would be raised directly or through derivatives. This new debt section in rows 129-195 is based on a number of additional inputs that DNOs are required to populate.

4.38   New debt amounts in this section should reflect the "core totex scenario", that is, they should represent forecasted new debt emissions for financing the Business Plan expenditure submitted in this BPDT.

4.39   Forecasts of new volumes of debt raised are distinguished into fixed rate debt; floating rate debt (LIBOR, all assumed 6M for simplicity); floating rate debt (SONIA); RPI linked debt; and CPI/CPIH linked debt. For each type of debt DNOs should input values for new annual volumes raised in year (in rows 131, 136, 141, 146, 152) and the proportion of the issuance year these new volumes are outstanding (in rows 132, 137, 142, 147, 153). The "year proportion new debt raised is outstanding" should reflect the proportion of the year (between 0 and 1) that the new debt is outstanding (i.e. if assumed to be issued at the start of the year, the year part would be 1; if mid-year, the year part would be 0.5; if assumed on specific dates, this would be (end year date-issue date) / days in year). For simplicity, it is assumed new debt raised would not be repaid prior to the end of RIIO-ED2.

4.40   Forecast Refinancing/New Debt: Opening New debt (K160). Input opening balance of new debt as of start of 2021/22 year. We have greyed out and pre-populated this cell as zero because outstanding debt at the start of 2021/22 should be included in and ascertained from the embedded debt data inserted in F6 – Debt Dataset.

4.41   Forecast Refinancing/New Debt: New Debt Interest Expense (row 187). Forecast interest expense arising from new debt raised. This data is included for information and comparison purposes only, as the subsequent calculations in the worksheet use Calculated New Debt Interest Expense (row 188).

4.42   Calculated New Debt Interest expense (row 188) is automatically calculated using the interest and inflation rates assumptions pre-populated at the top of the worksheet, rows 12-29 ("Inflation rates to be used […]" and "Interest rates to be assumed […]" sections).

4.43   Conversion to Regulatory (RIIO-1) Definitions of Net Debt, Net Interest, and Costs excluded from Regulatory (RIIO-1) Definition of Net Interest (rows 198-204, 212-221, 226-235). Where applicable, enter adjustments required to adjust the actual net debt and net interest expense values to their RIIO-1 regulatory definitions. Such adjustments should be inputted in a "Time Weighted Average" basis, consistently with the embedded and new debt volumes calculated in the previous sections of this sheets. Although row 205 refers to net debt per regulatory definition (which includes

intercompany loans), where such intercompany loans are equity shareholder loans, these should be excluded. Adjusted Net Interest Expense (row 237) should exclude equity shareholder loan interest.

4.44 Forecast actual equity (rows 266-271). Historic actual and forecast data for equity issuance, issuance transation costs, and dividends or shareholder loan payments. Dividends paid to shareholders are inputted as negative amounts; shareholder loan payments are inputted as positive amounts.

4.45 Actual cost of debt and index-linked (rows 242-265). Summary indicators for actual cost of debt (pre and post-derivatives) and index linked debt (proportion of RPI and CPI/CPIH index linked debt on total debt, share of principal inflation accretion on total interest expense, pre and post-derivatives). Note that these indicators are for information purposes only and not used in the BPFM, as the relevant information for the BPFM actual modelling is derived and extracted from the F1 - Debt for BPFM sheet.

F2b – Financial Summary (YE)

4.46 The purpose of this worksheet is to derive embedded and new debt volumes at the start and end of each year, for use in the BPFM. This is largely accomplished using the embedded debt data and calculations in sheets F6 and F3 to F5, as well as new debt information drawn from sheet F2a. In order to derive total net debt closing balances under the regulatory definition, DNOs are also required to insert adjustments to the year end (YE) amounts as needed. Accordingly, such adjustments are to be inputted on a YE basis. As in worksheet F2a, all inputs and calculations are expressed in nominal prices (£m).

4.47 The structure of this sheet is similar to F2a, with embedded debt calculations at the top (rows 12-150), new debt in the middle (rows 151-191) and the derivation of total regulatory closing debt, which includes DNO adjustments, at the bottom (rows 192-209).

4.48 Rows 12-52 use sheets F3 to F5 to derive pre-derivatives embedded debt volumes at the start of the year, as well as embedded debt issuances and repayments during the course of the year and principal accretion amounts on inflation linked debt. This allows to obtain the pre-derivatives embedded debt volumes at the end of the year.

4.49 Rows 53-92 follow the same approach to determine the amounts of derivatives at the start of the year. Derivative issuances and repayments are then factored in to calculate the impact of derivatives on closing embedded debt balances.

4.50 Rows 93-132 sums pre-derivatives embedded debt amounts and derivatives to obtain post-derivatives opening embedded debt, issuance and repayments and principal accretions. This information is then combined to obtain post-derivatives embedded debt at the end of the year.

4.51 Rows 151-191 are used to track new debt opening balances, emissions and principal inflation accretion on inflation linked debt, thus obtaining new debt closing balances. New debt emissions and principal inflation accretion (rows 161-173) are sourced from the new debt section of sheet F2a. For simplicity, CPI/CPIH linked debt from F2a is allocated in its entirety to the "CPI linked" category in F2b. This allocation is only presentational and has no impact on the relevant output for the BPFM, where CPI and CPIH linked debt are also aggregated in one single category. Consistently with sheet F2a, all new debt issuances are assumed to mature after the end of RIIO-2 and rows 175-179 are set to zero and greyed out accordingly.

4.52 Row 193 provides the Closing Balance of Debt, as the sum of Closing Embedded Debt and Closing New Debt from the previous sections. In rows 194-200, DNOs are required to input any adjustment needed to obtain (total) Closing Net Debt per Regulatory Definition (row 201). Such adjustments are akin to those in rows 198-204 of sheet F2a, but in this instance they represent amounts at the end of the year (YE), as opposed to annual time weighted averages (TWA).

4.53 Rows 206-209 feature the resulting total net debt regulatory balances (opening, closing and simple average). DNOs are required to input in cell E207 the total Opening Net Debt per Regulatory Definition for year 2016. This is needed because opening embedded debt for 2016 as derived from sheets F3 to F5, does not capture any previous adjustment and therefore may not be consistent with the regulatory definition.

F3 – Fixed Rate Debt

4.54 The purpose of this worksheet is to select fixed rate debt instruments from the F6 – Debt Dataset and calculate annual embedded debt volumes and interest payments for

each instrument. This information is subsequently aggregated and utilised in tab F2a and F2b; DNOs should not make any changes to this worksheet.

F4 – Floating Rate Debt

4.55   The purpose of this worksheet is to select floating rate debt instruments from the F6 – Debt Dataset and calculate annual embedded debt volumes and interest payments for each instrument. This information is subsequently aggregated and utilised in tab F2a and F2b; DNOs should not make any changes to this worksheet.

F5 – Inflation Linked Debt

4.56   The purpose of this worksheet is to select inflation linked debt instruments from the F6 – Debt Dataset and calculate annual embedded debt volumes and interest payments (including principal inflation accretion) for each instrument. This information is subsequently aggregated and utilised in tab F2a and F2b; DNOs should not make any changes to this worksheet.

F6 – Debt Dataset

4.57   The purpose of this worksheet is to collect, in a standardised fashion, granular information related to actual debt and derivative products. For illustrative purposes, the worksheet is pre-populated with example data, which DNOs should overwrite with actuals. DNOs should clear (not delete!) columns A to CI for any unused pre-populated rows, so that the dataset only contains their actual data.

4.58   Column CK (Identifier by type) generates indices used to automatically populate tabs F3 to F5 and must not be amended.

4.59   Columns CP to GW contains supporting workings to verify a number of set validation criteria. If any data point is not inputted accordingly, the affected cell is automatically highlighted in red. DNOs should ensure that no cells in F6 are highlighted in red, thus indicating that essential information has been included for all instruments and data should be processed in tabs F1 to F5 as intended.

4.60 This worksheet should be completed taking into consideration the debt and derivatives outstanding at the time of completing sheet F2a and F2b for submission with the business plan. The worksheet should only include embedded debt (i.e. debt existing at the time of completion of the worksheet), and should not forecast new debt or derivatives instruments (which is to be included in F2a).

4.61 Where debt is of a short-term/current nature (and can therefore be replaced several times in a year), the balance outstanding at the year end must be entered. The interest rate stated must be the rate that is applicable to the tranche which is outstanding at the regulatory year end.

4.62 DNOs should populate only columns A to CI of the worksheet. All debt volumes amounts should be inputted in nominal prices (£m). Please also refer to row 2 of the worksheet for guidance on the data format to use in each column.

4.63 Please populate columns A to CI of the worksheet according to the following guidance:

- Sector: choose from the drop-down validation list.
- Licensee: choose from the drop-down validation list.
- Category: choose from the drop-down validation list.
- Rank: choose from the drop-down validation list.
- Type: choose from the drop-down validation list.
- Maturity Type: choose from the drop-down validation list.
- Core Debt / Liquidity: choose from the drop-down validation list.
- Identifier: type instrument identifier code if available.
- Pricing date: insert in date format (dd/mm/yyyy) if available.
- Issue date: insert in date format (dd/mm/yyyy). This column <u>MUST</u> be populated as it is used in the calculations as the instrument issuance date.
- Maturity date: insert in date format (dd/mm/yyyy). This column <u>MUST</u> be populated as it is used in the calculations as the instrument maturity date.
- Early repayment date: insert in date format (dd/mm/yyyy) if applicable. If inserted, Early repayment date overrides the Maturity date in the calculations.
- 1st Call Date: insert in date format (dd/mm/yyyy) if available.
- Currency: choose from the drop-down validation list.
- Amount Issued on Issue Date / Max loan amount: insert amounts in the original currency of issuance, including amounts issued in pound sterling (GBP).
- Current Amount Outstanding: insert amounts in the original currency of issuance, including amounts issued in pound sterling (GBP).

- Amount Issued on Issue Date / Max loan amount_GBP equiv: populate with the GBP conversion (£m) of Amount Issued on Issue Date / Max loan amount. For instruments issued in GBP the two amounts will be the same.

- Current Amount Outstanding_GBP equiv: populate with the GBP conversion (£m) of Current Amount Outstanding. For instruments issued in GBP the two amounts will be the same.

- Amount for Use: populate with the GBP amount (£m) for use in tabs F3 to F5 to derive instrument debt volume and associated interest payments. This column MUST be populated.

- Coupon / Margin: insert in percentage format (%) if available.

- Issue Price: insert index value (base index = 100) if available.

- Yield to Maturity at Issue Date: insert in percentage format (%) if available.

- Rate for use: insert in percentage format (%). This column MUST be populated as it provides the interest rate driving the calculations in F3 to F5. This column should be populated using values from Yield to Maturity at Issue Date, rather than from the Coupon / Margin column.

- floating_ref_rate: for Floating instruments, DNOs MUST select one of the LIBOR or SONIA options from the validation list. For Fixed and Inflation Linked instruments DNOs MUST select "N/A" from the validation list.

- inflation_ref_rate: for Inflation Linked instruments, DNOs MUST use the validation list to specify if linked to RPI, CPI or CPIH. For Fixed and Floating rate instruments DNOs MUST select "N/A" from the drop-down.

- Inflation_lag: for Inflation Linked instruments, DNOs MUST use the validation drop-down to specify the number of months lag (with respect to the end of year / maturity date as applicable) for the selection of the price index used for indexation of the principal amount. For Fixed and Floating rate instruments DNOs MUST select "N/A" from the drop-down.

- Inflation_Base_Index: for Inflation Linked instruments, insert reference base index applied at issuance. If not available, this will be automatically determined in tab F5 from the monthly inflation dataset in I2 - Monthly Inflation, using information on issue date, inflation reference rate and monthly lag.

- Commitment Fee: insert in percentage format (% issued amount) if available.

- LT Issue Rating at Issue Date (S&P/Moodys/Fitch): insert rating information if available.

- Current LT Issue Rating (S&P/Moodys/Fitch): insert rating information if available.

- Counterparty: insert counterparty (type "Market" if not identified).

- Transaction expenses: if available, insert amount in GBP (£m).

- Description: insert additional relevant descriptive information.

  If amortising, profile submitted?: for "Fixed" and "Floating" amortising instruments select "Y". For "Inflation Linked" amortising instruments select either: "N" for the initial debt issuance; "Y" for the annual repayment amounts. Select "N/A" for all non-amortising instruments.

  Note that these flags are used in sheets F3 to F5 to select between the "standard" calculations and the "bespoke" that apply to amortising instruments only, therefore it is essential that these flags are carefully and correctly assigned.

  See the Supplementary guidance section below for futher guidance on amortising instruments.

- Split flag: For "Inflation Linked" amortising instruments that are split into a number of row entries, select "Y" for both initial emission and annual repayments.

  The "Y" flag can also be attributed to other instruments that are broken down into two or more row entries (such as instruments with margin changes). Select "N/A" for all other instruments.

  Note that these flags do not impact on the calculations and only have information purposes.

- IssueAmount_2016 to IssueAmount_2028: to be used for "Fixed" or "Floating" amortising instruments. Input annual issued amounts, including the initial debt emission if this occurs in the FY2016-2028 period.

- IssueDate_2016 to IssueDate_2028: to be used for "Fixed" or "Floating" amortising instruments. Input dates for annual issued amounts, including the date of the initial debt emission if this occurs in the FY2016-2028 period. If issuance dates are omitted or inserted in the wrong column, the amounts from "IssueAmount_2016" to "IssueAmount_2028" will not be captured correctly in the calculation sheets.

- RepayAmount_2016 to RepayAmount_2028: to be used for "Fixed" or "Floating" amortising instruments. Input annual repaid amounts, including the final repayment if this occurs in the FY2016-2028 period. Repayments are inputted as <u>negative</u> sums.

- RepayDate_2016 to RepayDate_2028: to be used for "Fixed" or "Floating" amortising instruments. Input dates for annual repaid amounts, including the date of the final repayment if this occurs in the FY2016-2028 period. If repayment dates are omitted or inserted in the wrong column, the amounts from "RepayAmount_2016" to "RepayAmount_2028" will not be captured correctly in the calculation sheets.

Supplementary guidance

<u>Debt instruments if "licensee lender"</u>

4.64   Input negative amounts in columns Q, R and S for instruments flagged as "licensee lender". These amounts will be deducted from total debt volume accordingly. Interest payments will be also calculated as negative sums and will decrease total interest expense.

4.65   If "licensee lender", an analogous sign revertion is required for annual issuance and repayment amounts for amortising instruments, in columns AJ to AV and BJ to BV.

<u>Debt instruments with margin changes</u>

4.66   If the applicable interest rate changes during the repayment period, the instrument can be modelled by splitting into three entries in the dataset:

1. First period instrument
- issue_date = actual date of issuance
- maturity_date = date of interest rate switch
- Amount for use = actual volume
- Rate for use = interest rate in period 1
- Split flag = "Y" (to denote entry relating to a composite instrument, FYI only)

2. Second period instrument
- issue_date = actual date of issuance
- maturity_date = actual date of maturity
- Amount for use = actual volume
- Rate for use = interest rate in period 2
- Split flag = "Y" (to denote entry relating to a composite instrument, FYI only)

3. Offset for second period instrument
- issue_date = actual date of issuance
- maturity_date = date of interest rate switch
- Amount for use = - (actual volume) => if actual amount is borrowed, this value is negative (and vice versa if amount is lent)
- Rate for use = interest rate in period 2
- Split flag = "Y" (to denote entry relating to a composite instrument, FYI only)

4.67 Instrument (1) models the first period (from issuance to interest rate change), the combined instruments (2) and (3) model the second period. (2) starts at issuance date, so that the principal accretion is calculated correctly when the interest rate switch occurs; however any debt volume or interest payment calculated for (2) before the switch date has to be zeroed and this is achieved by using the offsetting instrument (3).

Amortising instruments

4.68 If "Fixed" or "Floating" rate, amortising instruments are inputted as a single row entry as follows:

- Amount for use = volume at issuance date or opening balance for 2016
- issue_date = actual date of issuance
- maturity_date = actual date of maturity
- Issue/RepayAmount_2016 to Issue/RepayAmount_2028 = annual amounts for emissions and repayments. These include initial issuance and final repayment if occurring in the 2016-2028 period.
- Issue/RepayDate_2016 to Issue/RepayDate_2028: insert annual dates for emissions and repayments, matching annual issuance and repayment amounts.
- Amortising profile = "Y" (flag essential to trigger bespoke calculations)

4.69 If "Inflation linked", amortising instruments are decomposed into separate row entries, one for each annual emission and repayment. These are populated as follows:

1. *Initial issuance*
- issue_date = actual date of issuance
- maturity_date = actual date of maturity
- Amount for use = actual volume at issuance
- Rate for use = applicable interest rate
- inflation_ref_rate = applicable inflation index
- Inflation_lag = applicable inflation lag
- Inflation_Base_Index = applicable base index
- Amortising profile = "N" (to denote the initial issuance, FYI only)
- Split flag = "Y" (to denote entry relating to composite instrument, FYI only)
- Issue/RepayAmount_2016 to Issue/RepayAmount_2028: NOT IN USE
- Issue/RepayDate_2016 to Issue/RepayDate_2028: NOT IN USE
  2. *Annual issuance / repayments*

- issue_date = actual date of issuance / repayment
- maturity_date = final repayment date
- Amount for use = actual volume issued / repaid (negative amount for repayment)
- Rate for use = <u>NIL</u>
- inflation_ref_rate = same as initial issuance (1)
- Inflation_lag = same as (1)
- Inflation_Base_Index = same as (1)
- Amortising profile = "Y" (to denote additional issuance/repayment, FYI only)
- Split flag = "Y" (to denote entry relating to composite instrument, FYI only)
- Issue/RepayAmount_2016 to Issue/RepayAmount_2028: <u>NOT IN USE</u>
- Issue/RepayDate_2016 to Issue/RepayDate_2028: <u>NOT IN USE</u>

F7 – Data Validation

4.70 The purpose of this worksheet is to store the definitions of the drop-down validation lists used in the F6 – Debt Dataset worksheet. DNOs should not make any changes to this worksheet.

F8 – Tax Inputs

4.71 The purpose of this worksheet is to collect information relating to actual and forecast corporation tax information, including Capital Allowances, Tax Pool Allocations and the impact of other factors not already captured in the BPFM calculations on actual tax payable compared to the notional tax allowance.

4.72 Capital allowances (rows 9-23). DNOs should populate yellow input cells with data relating to applicable capital allowance rates and capex additions. Whilst the capital allowance rates for general pool, special rates pool and structures and buildings allowance are pre-set and should not be changed, the rate for deferred revenue expenditure (row 18) is pre-set but may be overridden should DNOs wish to use the rate in their actual tax computations. This is not a mandatory step however, since any differences arising from the different rates are captured in the tax reconciliation process.

4.73 RIIO-2 Tax Pool Allocations (rows 28-70). DNOs should populate yellow input cells with allocations of totex totals into relevant tax pools. The allocations should be applicable to both non-variant and variant costs.

4.74 Other tax forecast differences v notional tax allowance (explain where inputted) (row 82). Whilst DNOs may choose to follow the notional approach of calculating tax allowance on base revenues, should other approaches be taken, DNOs may populate cells in this row with any adjustments based on differences between notional expected tax and forecast tax. A clear explanation should be provided for the basis of any adjustments.

4.75 Tax trigger (rows 86-87). Inputs for the tax trigger B events and tax trigger deadbands.

5. Instructions for completing the costs worksheets

Purpose of costs worksheets

5.1   The purpose of the costs worksheets is to report expenditure information at various levels of granularity to enable ofgem to fully understand the relationship with proposed outputs. The detail in the worksheets allows benchmarking at the individual activity level as well as at the Totex level when all activities are added together.

SI1 – Performance Summary

5.2   This worksheet is automatically and manually populated from the sources set below and provides key summary information about:

- Number of Customers
- Network Length
- Total Expenditure
- Quality of Service
- Unrestricted Domestic Tariff
- Connections

5.3   Data on the number of customers is automatically populated from M14 Drivers row 15.

5.4   Data on Network Length is automatically populated from V1 – Total Asset Movements matrix.

5.5   Total Expenditure data is automatically populated from I3 – BPFM Inputs by summing rows 10 to 16.

5.6   Quality of Service data on unplanned and unweighted Customer Interruptions and unplanned and unweighted Customer Minutes Lost is populated from M14 – Drivers. (numbers will be a year in arrears as the approved numbers from Ofgem will not be available by 31 July each year) as follows:

- Customers Interrupted (including exceptional events): cells H27 to T27

- Customers Minutes Lost (including exceptional events): cells H28 to T28

- Customers Interrupted (excluding exceptional events): cells H29 to T29

- Customers Minutes Lost (excluding exceptional events): cells H30 to T30

5.7 For the Unrestricted Domestic Tariff, figures are adjusted for a 3100 kWh typical domestic consumption value (not including the domestic customer rebateand assuming 365 days in a year) and entered manually by the licensee (20/21 price base).

S1 – Summary of C1s

5.8 This worksheet is automatically populated from the C1 matrices and allows the monitoring of the total net costs (including pension costs). It summarises:

- Pensions
- Total gross costs
- Total net costs before allocations
- Total net costs after non Price Control allocation
- Total net costs after non price control allocation with ED2 Ongoing Efficiency

S2 – C1 movements

5.9 This worksheet is automatically populated from worksheet S1 – Summary of C1s to provide year on year movements in costs.

S3 – C1 in Year Summary

5.10 This worksheet is automatically populated from the C1 matrices and provides an in-year summary of each C1 cost matrix. Cell A10 allows the selection of the year. It provides a summary of:

- Cost Type split
- Total gross costs
- Total net costs before allocations
- Total Costs by Source
- Allocation of Income relating to Closely Associated Indirects (CAIs), Business Support Costs and Non-op capex
- Indirect activity allocations to Connections outside of the Price Control

- Indirect activity allocations to non-distribution (excluding Connections)
- Total net costs after Non Price Control allocation
- Total Net Costs after Non Price Control allocation with ED2 Ongoing Efficiency
- Indirect activity allocation to High Value Projects – reopener
- Indirect activity allocation to Connections within the Price Control.

C1 – cost matrix (2011 to 2028)

5.11 These worksheets (18 in total for years 2010-11 to 2027-28) allow for the monitoring of total DNO expenditure by high level activity and Cost Type and provides visibility of what costs and incomes are being included in the revenue calculation.

Total gross costs and total net cost before allocations (Rows 37 to 61)

5.12 Total Gross Costs (Row 37) and total net cost before allocations (Row 40) and the associated Cost Type split (Rows 13-20 and 38-39) are automatically populated from the relevant C and CV worksheets named in Row 5.

5.13 The only input cells are for Related Party Margins. **The gross costs in Rows 21-35 and net costs in Rows 46-60 should be split by each relevant Related Party. The Related Party name is automatically linked from the Fixed Inputs sheet.**

5.14 Row 40 provides the total net costs before reallocation of income from direct costs to indirects and the reallocation of indirect costs to activities outside the price control.

5.15 The allocations as described below are necessary in order to calculate total net costs inside the price control under the correct activities in Row 82.

Allocation of income relating to Closely Associated Indirects (CAIs), Business Support Costs (BSCs) and Non-Operational Capex (Row 62).

5.16 For Connections, income (Customer Contributions and Cost Recoveries) relating to CAIs, BSCs and Non-Operational Capex is reported in the Connections activity and not under the associated indirect costs.

5.17 Therefore, in Row 62, adjustments must be made to remove the contributions relating to CAIs, BSCs and net Non-Operational Capex from the net Connections costs within the Price Control and reallocate them to the net CAI, BSCs and Non Operational Capex

expenditure. The adjustment to net Connections costs in cell C62 within the Price Control must be entered as a positive number and the adjustment to the net CAIs in cells AZ62:BC62, net BSCs in cells BE62:BG62 and net Non-Operational Capex in cells AD62:AG62 must be entered as a balancing negative numbers.

5.18   While all of these contributions sit within the TIM, these adjustments are necessary for the correct allocation of net costs for the tax pool calculations and to allow for a more appropriate comparison between actual expenditure and baseline net cost allowances for network investment, CAIs, BSCs and Non-Operational Capex.

5.19   For any other activity (ie not Connections) where the income relating to CAIs, BSCs and Non-Operational Capex is reported in the relevant direct activity the same process as above for Connections should be carried out for the relevant activity areas (ie a positive number entered in the relevant activity with a balancing negative number in the indirect cells).

Indirect Activity Allocations to Connections outside Price Control (Row 64-71)

5.20   For Connections outside the Price Control the indirect costs associated with those connections are in the CAIs, BSCs and Non-Operational Capex costs which are inside the Price Control. Therefore these costs must be allocated from the Indirects to Connections outside the Price Control. This is to ensure the correct application of the TIM and to be able to compare with the baseline net cost allowances for RIIO-ED1, these indirect costs associated with work outside the Price Control must be reallocated.

5.21   In Rows 65 to 71, adjustments should be entered by Cost Type to reallocate relevant CAIs, BSCs and Non-Operational Capex expenditure to Connections outside the Price Control. The adjustments to CAIs (cells AZ65:BC71), BSCs (cells BE65:BG71) and Non-Operational Capex (cells AD65 to AG71) should be entered as negative numbers. The adjustments to Connections outside the Price Control should be entered as balancing positive numbers (cells BV65:BV70).

Indirect Activity Allocations to Non Distribution (excluding Connections) (Rows 73-80)

5.22   As above, any CAIs, BSCs or Non-Operational Capex expenditure associated with other activity outside the Price Control needs to be reallocated in the same way as Connections outside the Price Control.

5.23   In Rows 74 to 79, adjustments should be entered by Cost Type to reallocate relevant CAI, BSCs and Non-Operational Capex expenditure to other activity outside the Price Control excluding Connections. The adjustments to CAIs (cells AZ74 to BC79), BSCs (cells BE74 to BG79) and Non-Operational Capex (cells AD74 to AG79) should be entered as negative numbers. The adjustments to other activities outside the Price Control should be entered as balancing positive numbers. (cells BQ74:BU79, BW74:BX79 and BZ74:CA79).

Memo: Indirect Activity Allocations (Rows 82-109)

5.24   There are two memo items in C1 to reallocate Indirect costs from the indirect activity to their associated direct activity. These are for:

- High Value Projects – Re-Opener (Rows 89 to 96)
- Moorside – Reopener (Rows 98-105)
- Connections Inside the Price Control (Rows 108 to 105).

5.25   This will provide total costs (directs and indirects) for each of the above. For High Value Projects ED1 rules state that in determining if the materiality threshold has been reached these costs include directs and indirects. For Connections Inside the Price Control it is useful to understand the total costs of Connections in each year.

5.26   The adjustments to High Value Projects RIIO-ED1 (cells AI90:AI96) and Connections Inside the Price Control (cells C108:C113) should be entered as positive numbers. The adjustment to the corresponding Rows in CAIs (columns AV to AY), Business Support (columns BA to BC) and Non-Operational Capex (columns AC to AF) should be entered as balancing negative numbers.

Overview

Cost Type split

5.27   As noted above, all C tables must be differentiated into Cost Types (except C22 – Pass Through and C23 – Other Non Activity Based Costs). The DNO must enter total gross costs by Cost Type (Rows 15 to 22). This Cost Type data feeds into the worksheets C1 matrices.

5.28   Some C tables only require the costs by Cost Type. Other C tables also require costs by category type. Category type costs and volumes are more disaggregated activity level costs to allow for more detailed assessment of the elements that comprise the activity in each table.

5.29   The check cells in Row 28 will ensure that the input for total gross costs by Cost Type and total gross costs by category type reconcile.

Customer Contributions and Cost Recoveries

5.30   Income for Customer Contributions (Rows 24) and Cost Recoveries (Row 25) should be entered as a negative number.

5.31   Entries against Customer Contributions should relate only to income received from customers. Regarding Connections projects, contributions relating to indirect cost incurred on a Connections project should be included under the relevant type of Connections project, rather than under the particular indirect cost category. All Margins charged on Connections projects should be included in the amount input as contributions.

Total gross costs and total net costs

5.32   Total gross costs (Row 23) and total net costs (Row 26) are automatically calculated in each C table. These costs feed into the worksheets C1 matrices.

C2 – Connections

5.33   This worksheet is for the input of Connections direct cost expenditure, associated customer contributions and volume data. The data reported in this table relates to Connections inside and outside the Price Control.

5.34   Direct costs are costs associated with Direct Activities, ie those which involve physical contact with system assets (see RIIO-ED2 BPDT Glossary for a full definition).

5.35   Customer contributions relate to income received in each reporting year. DNOs should follow the approach to calculating Customer contributions as used in table CC1 of the RIIO-ED1 Connections Reporting Pack.

Costs within this table should be reported Metered Categories:

Code	Metered Connection Category
	Metered DPCR4 Connection projects
LVSSA	Single service LV connection
LVSSB	Small project demand connection (LV)
LVAL	All other LV (with only LV work)
LVHV	LV end connections involving HV work
HVHV	HV end connections involving only HV work
LVEHV	LV end connections involving EHV work
HVEHV	HV end connections involving EHV work
EHVEHV	EHV end connections involving only EHV work
HV132	HV or EHV connections involving 132kV work
132kv	132kV end connections involving only 132kV work
DGLV	DG connection at LV involving LV assets only
DGHV	DG connection at any voltage where HV is the highest voltage worked on
DGEHV	DG connection at any voltage where EHV is the highest voltage worked on
DG132kV	DG connection at any voltage where 132kV is the highest voltage worked on

Code	Metered Connection Category
	Reinforcement associated with existing premises connected by a low-voltage single-phase, two-phase or three-phase service fused at 100 amperes (A) or less per phase and with whole-current metering (socialised reinforcement)

5.36 For Connections inside the Price control the total gross direct costs should be split by Cost Type at the top of the worksheet (Rows 17 to 24) and total income should be entered in Rows 26 and 27.

5.37 For Connections outside the Price control the total gross direct costs should be split by Cost Type at the top of the worksheet (Rows 40 to 47) and total income should be entered in Rows 49 and 50.

5.38 Connections inside and outside the Price Control comprises the following that are defined in RIIO-ED2 BPDT Glossary:

Connections Inside the price Control

- Element of Connections that is subject to the apportionment rules - Customer Funded
- Element of Connections that is subject to the apportionment rules - DUoS Funded

Connections Outside the Price Control

- Sole Use Expenditure on DG Connections projects
- Sole Use Expenditure on Metered Connections Projects
- Sole Use Expenditure on Unmetered Connections Projects.

Element of Connection that is Sole Use Funded

5.39 This is defined as the element of a Connection that will only be used by the connecting party after completion of the work and is therefore fully funded by this party. All connection jobs/projects that involve the provision of new MPANs/points of connection must have a sole use element. Upgrading Connection Projects are the only projects that are able to have no element of connection that is sole use funded.

5.40 Note where a Connection Project involves any diversionary works, the costs for these works must be included.

Element of the connection that is subject to the apportionment rule

5.41   Where a Connection Project requires the reinforcement of existing assets or involves the installation of new assets that will not be used solely by the connecting party, the funding for these assets will be split between the new connecting party and the wider customer base through Distribution Use of System (DUoS) funding. This funding is split using the apportionment rule as detailed in DNO connection charging methodologies. These reinforcement costs are allocated between the customer and DUoS and are not discrete cost activities.

5.42   The portion funded by the connecting customer is referred to as the "Element of connection subject to the apportionment rule – Customer Funded". Note that this funding refers only to the element funded by the customer under the apportionment rule, rather than the total connecting customer contribution.

5.43   The portion that is funded by the wider customer base through DUoS is referred to as the "Element of connection subject to the apportionment rule – DUoS Funded".

5.44   Within the table, the Connections with an Element Subject to the Apportionment Rule category has been sub-divided into three activities:

- Sole Use Connection
- DUoS Funded
- Customer funded

5.45   Under this category, Sole Use cost data relates to Connection costs outside the Price Control and DUoS and Customer Funded costs relate to Connections Inside the Price Control.

5.46   Gross direct costs and Customer Contributions, of the activities listed, should be entered in the associated table where relevant.

5.47   Total volumes that are subject to the apportionment rule – Number of MPANs connected (or POCs if MPANs are unknown) should be entered in the relevant table in rows 63 to 77. Where a Connection Project connects an independent network (categorised as "IDNO") one point of connection must be logged, against the voltage at which the independent network is connected to the DNO network.

5.48 Total volumes that are subject to the apportionment rule –Projects completed should be entered in the relevant table in rows 63 to 77. Volumes should be reported in the year that a project is (or expected to be) completed.

5.49 The costs and volumes data in any single reporting year may not align, as work that has been done in-year on projects that are not yet completed will be reflected in the expenditure columns but not in the associated volume columns.

Element of the connection that is not subject to the apportionment rule – Sole Use Funded

5.50 The only activity under this category is Sole Use Connections.

5.51 Gross direct costs and Customer Contributions for this activity listed should be entered in the relevant table.

5.52 Total volumes that are subject to the apportionment rule – Number of MPANs connected (or POCs if MPANs are unknown) should be entered in the relevant table in rows 137 to 156.

Reinforcement associated with existing premises connected by a low-voltage single-phase, two-phase or three-phase service fused at 100 amperes (A) or less per phase and with whole-current metering (socialised reinforcement)

5.53 Where DNOs are informed by customers that they intend to connect equipment to existing premises that require some network reinforcement then these will be included in row 102. Since this work is not charged to the customer making the request, all costs should be shown as DUoS funded reinforcement. As these are existing premises there are no new connections and therefore no volumes to record.

5.54 Direct costs incurred by DNOs to reinforce the network due to the combined effect of customers installing equipment should not be recorded as Connections costs but should be recorded as Reinforcement in the relevant table in the RIIO-ED2 BPDTs. Costs relating to upgrades of supply to specific customer requests should be reported in the C2 table.

Unmetered Connections

5.55 All unmetered connections come under Connections with no element subject to the Apportionment rule – Sole Use Connections.

5.56   The following fall under the Unmetered Connection categories:

Code	Unmetered Connection Category
	Unmetered DR4 Connections
UMLA	Unmetered Local Authority Connections (L.A.)
PFI	Unmetered Connections provided under Private Finance Initiative
OUMC	Other Unmetered Connections (non-L.A, or PFI)

5.57   Gross direct costs and Customer Contributions for this activity listed should be entered in the relevant table.

5.58   Cost and volume data relating to these Unmetered Connection categories are reported in rows 153 to 156.

C3 – Physical Security

5.59   This worksheet provides information on expenditure and activity on physical security directly related to DECC's enhanced physical security upgrade programme (PSUP), at sites classified as Critical National Infrastructure (CNI) by BEIS. Expenditure should be reported for costs which are necessarily undertaken to meet requirements of the Secretary of State to enhance the physical security of a DNO's network, including the provision of necessary communication sites and associated infrastructure.

5.60   Expenditure recorded in this worksheet includes both operational and capital expenditure.

5.61   Expenditure on works which may have a consequential impact on the wider resilience of CNI sites, for example interconnection of networks, but which is not directly driven by the PSUP should not be reported in this worksheet.

5.62   The worksheet contains two tables. In the first table, total gross costs should be recorded and split by relevant cost type.

5.63   In the second table expenditure should be reported by activity level split and allocated to a specific site where possible. Where costs cannot be allocated to a specific site, they must be reported as Centralised Costs. Expenditure includes costs relating to PSUP spares and escrow.

5.64 Schemes should be identified using their scheme identifier number rather than by name in this table. To retain the confidentiality of sites, these should not be referred to by name in either the RIIO-ED2 BPDTss or accompanying commentary.

5.65 The activities for which expenditure should be reported comprise the following which are defined in RIIO-ED2 BPDT Glossary:

- Post-Delivery Support Agreements (PDSA)
- PSUP Direct Labour
- Data Communications
- Other Operating Costs
- Enhanced Physical Security (Capex).

5.66 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22) and total income should be entered in Rows 24 and 25.

5.67 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 105.

C4 – IT & Telecoms (Non-Operational)

5.68 This worksheet collects IT & Telecoms (Non-Operational) cost data.

5.69 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in RIIO-ED2 BPDT Glossary, under the term IT & Telecoms (Non-Operational):

- Hardware and infrastructure costs
- Application software development costs.

5.70 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22) and total income should be entered in Rows 24 and 25.

5.71 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 35.

5.72 At the bottom of this worksheet, there are two memo tables included in rows 39 and 40, to capture any costs that are defined as Cyber Resilience, and rows 45 and 46, to

report costs in relation to DSO Cost categories in these memo tables are as shown in 5.70 above. These costs will be included in the M19 DSO Memo table. Please refer to section 5 of the Glossary (Cost Mapping Matrix) for further details.

5.73 In relation to the Cyber Resilience memo table and cyber resilience row 47 in the DSO Memo table, these costs should be disaggregated and reflected in M28 Cyber Security Non Operational IT. Please refer to section 9 for further details.

5.74 At the bottom of the worksheet, there is a memo table included to capture costs in relation to Data & Digitalisation. These costs will be included in the M29 D&D Memo table. The costs reported in this table should reconcile with investment proposals detailed in the Digitisation Strategy and Action Plan (DSAP). Please refer to the RIIO-ED2 Business Plan Guidance for further details.

C5 – Property (Non-Operational)

5.75 This worksheet collects all Non-Operational Property costs by Cost Type only. No further disaggregation is required. The key term for this worksheet, defined in RIIO-ED2 BPDT Glossary, is:

- Property (Non-Operational).

C6 – Vehicles and Transport (Non-Operational)

5.76 This worksheet collects all Vehicles and Transport (Non-Operational Capex) costs by Cost Type only. No further disaggregation is required. The key term for this worksheet, defined in RIIO-ED2 BPDT Glossary, is:

- Vehicles and Transport (Non-Operational).

C7 – Small Tools, Equipment, Plant and Machinery (Non-Operational)

5.77 This worksheet collects all Small Tools, Equipment, Plant and Machinery (Non Operational) costs by Cost Type only. No further disaggregation is required.

5.78   The key term for this worksheet, defined in Annex A – Glossary, is:

- Small Tools, Equipment, Plant and Machinery (Non-Operational).

C8 – Remote Location Generation (Opex)

5.79   This worksheet collects the costs for Remote Location Generation (Opex).

5.80   Gross costs should be reported by Cost Type and by the following categories, which are defined in Annex A – Glossary:

- Remote Location Generation Operating Costs: Fuel
- Remote Location Generation Operating Costs: Operation & Maintenance.

5.81   The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22) and total income should be entered in Rows 24 and 25.

5.82   The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 35.

C9 – Core CAI

5.83   This worksheet collects cost data on the aggregated total of Core CAI costs to feed the input to the C1 cost matrix. It also provides a split of these costs to provide a better understanding of the costs for cost assessment purposes

5.84   Gross costs should be reported by Cost Type and for the following cost categories, which are defined in RIIO-ED2 BPDT Glossary:

- Network Design and Engineering
- Project Management
- Engineering Management and Clerical Support (EMCS)
- System Mapping
- Network Policy
- Call Centre
- Control Centre
- Stores.

5.85 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22) and total income should be entered in Rows 24 and 25.

5.86 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 41.

5.87 At the bottom of this worksheet, there is a memo table included in rows 45 to 52 to capture any costs in relation to DSO. Cost categories in the memo table are as shown in 5.84 above. These costs are included in the M19 DSO Memo table. Please refer to section 5 of the Glossary (Cost Mapping Matrix) for further details.

5.88 A further memo table has also been included in rows 57 to 65 to capture costs in relation to Data & Digitalisation. Cost categories in this memo table are as shown in 5.84 above. These costs will be included in the M29 D&D Memo table. The costs reported in this table should reconcile with investment proposals detailed in the Digitisation Strategy and Action Plan (DSAP). Please refer to the RIIO-ED2 Business Plan Guidance for further details.

C10 – Wayleaves (CAI)

5.89 The worksheet collects costs on the Wayleaves activity to feed the input to the C1 cost matrix. It also provides a split of Wayleaves and a line to report Substation Rents

5.90 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in RIIO-ED2 BPDT Glossary:

- Wayleave Payments
- Wayleaves and Easements/Servitudes Admin Costs.
- Substation Rents

5.91 Costs reported on this table exclude Wayleaves (inc Easements/Servitudes) costs associated with network investment which should be reported on the appropriate table.

5.92 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22) and total income should be entered in Rows 24 and 25.

5.93 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 36.

C11 – Vehicles and Transport (CAI)

5.94 The worksheet collects costs on the Vehicles and Transport CAI activity to feed the input to the C1 cost matrix. Gross costs should be reported by Cost Type only. No further disaggregation is required.

5.95 The key term for this worksheet, defined in RIIO-ED2 BPDT Glossary, is:

- Vehicles and Transport (CAI).

C12 – Core Business Support

5.96 This worksheet collects cost data on the aggregated total of core Business Support activities to feed the input to the C1 cost matrix. It also provides a split of these costs to provide a better understanding of the costs for cost assessment purposes.

5.97 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in RIIO-ED2 BPDT Glossary:

- HR
- Non-Operational Training
- Insurance Totals
- Finance and Regulation
- Fines and Penalties (other than in Street Works)
- CEO.

5.98 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). Income should be entered as a negative in Rows 24 and 25.

5.99 The total gross costs in Row 23 should reconcile with the total gross costs by category type in Row 39.

5.100 Income should be reported by year for the following categories, which are defined in RIIO-ED2 BPDT Glossary:

- Insurance – Claims paid out to DNO
- Other Income.

5.101 The total net costs in Row 26 should reconcile with the total net costs by category type in Row 42.

5.102 Once the total income of each category type has been entered, the check cells will ensure that the total income reconciles on Row 29.

5.103 At the bottom of this worksheet, there is a memo table included to capture any costs in relation to DSO. These costs will be included in the M19 DSO Memo table. Please refer to section 5 of the Glossary (Cost Mapping Matrix) for further details.

5.104 A further memo table has also been included in rows 54 to 62 to capture costs in relation to Data & Digitalisation. Cost categories in this memo table are as shown in 5.97 above. These costs will be included in the M29 D&D Memo table. The costs reported in this table should reconcile with investment proposals detailed in the Digitisation Strategy and Action Plan (DSAP). Please refer to the RIIO-ED2 Business Plan Guidance for further details.

C13 – IT&T (Business Support)

5.105 This worksheet collects the costs of IT&T (Business Support) costs to feed into the C1 table.

5.106 Gross costs should be reported by Cost Type only.

5.107 In relation to the Cyber Resilience costs memo table and DSO memo of Cyber Resilience costs row 38, these costs should be disaggregated and reflected in M28 Cyber Security Non Operational IT. Please refer to section 9 for further details.

5.108 The key term for this worksheet, defined in Annex A – Glossary, is:

- IT & Telecoms (Business Support).

5.109 At the bottom of the worksheet, there is a memo table included to capture costs in relation to Data & Digitalisation. These costs will be included in the M29 D&D Memo table. The costs reported in this table should reconcile with investment proposals

detailed in the Digitisation Strategy and Action Plan (DSAP). Please refer to the RIIO-ED2 Business Plan Guidance for further details.

C14 – Property Management (Business Support)

5.110 This worksheet collects costs for Property Management expenditure and related income by year to feed into the C1 table.

5.111 Gross costs should be reported by Cost Type only. No further disaggregation is required.

5.112 Where the property is owned by a Related Party and it charges a market rent to the DNO, the difference between the market rent and external rent must be reported under the Cost Recoveries line.

5.113 The key term for this worksheet, defined in Annex A – Glossary, is:

- Property Management (Business Support).

C15 – Atypicals Non Severe Weather (2011 to 2023)

5.114 These worksheets collect data on atypical events, excluding severe weather events for each Cost Type category. This should include atypical events which are within the Price Control (both inside and outside of the TIM) and those which are outside the Price Control.

5.115 Atypical events are those events as defined in RIIO-ED2 BPDT Glossary and those consented in writing by Ofgem for inclusion in Atypicals. Separate consent is required from Ofgem for each reporting year; consents for previous years cannot be used to justify classifying costs as Atypicals.

5.116 The key terms for this worksheet, defined in Annex A – Glossary (with the prefix "Atypical"), are:

- Atypicals Non Severe Weather in Totex in Price Control
- Atypicals Non Severe Weather Excluded from Totex in Price Control

- Atypicals Non Severe Weather Outside Price Control
- Severance
- Early Retirement Deficiency Contributions (ERDCs)
- Non Severance Related Restructuring/Merger
- Rebranding
- Other (to be overwritten by DNO).

5.117 There are three tables within these worksheets where atypical expenditure is reported, these are:

Table A: Summary of provisions and accruals (excluding deferred tax)

5.118 Data is to be reported under the relevant activity for each provision or accrual for the opening balance at 1 April in the year under review, charge to P&L account, release to P&L account, utilised (ie Cash Payment) and closing balance at 31 March.

5.119 Data is to be provided for provisions or accruals only when they are not incurred as part of an ordinary level of business activities. Holiday pay provisions are normal trade accruals and prepayments and should not be reported on this worksheet. Provisions reported are to exclude those for deferred tax.

5.120 Provision data for DPCR5 included all provisions. The revised treatment commences from 1/4/2016 with no restatement of DPCR5 data. The amounts reported within the columns for "Utilised" are to be further analysed into (a) source by payer (ie DNO or related parties), (b) cost row type reported within Total Cost Matrix and for Totex only (c) the cost category for the BPFM.

5.121 Where there is a reversal of a material over-accrual or prepayment the amount to be reported as atypical should be the excess amount over the annualised normal level of such costs, where this is subjective please discuss with Ofgem before finalising your reporting treatment

Table B: Cash Atypicals within Price Control (EXCLUDING amounts recorded in provisions and accruals and prepayments utilisation above).

5.122 Populate this table with the atypical elements of costs under the relevant activity heading for each event source by payer either DNO or related parties.

5.123 Columns B to K should be used for those costs which are part of Totex, columns M:V should be used for those costs which are outside Totex but within Price Control.

5.124 For each event the amounts reported are to be further analysed by cost row type reported within Total Cost Matrix. The Totex values are also required to be analysed into the cost category for the BPFM .

Table C: Cash Atypicals outside Price Control (EXCLUDING amounts recorded in provisions and accruals and prepayments utilisation above)

5.125 Those events outside the Price Control are specified in the table along with additional columns in which a description should be inserted by overwriting the description where the row is used.

5.126 Populate this table with the atypical elements of costs under the relevant activity heading for each event into (a) source by payer (ie DNO or related parties) and (b) cost row type reported within Total Cost Matrix.

5.127 The figures should exclude any amounts reported under atypical provisions or accruals and prepayments in Table A.

5.128 Tables then sum automatically for:

- total inside Price Control and inside TIM
- total inside Price Control but outside TIM
- total outside Price Control.

Allocation of Utilisation in year to BPFM cost categories

5.129 For 2016 to 2023 DNOs are required to allocate the utilised costs within the Price Control in that year to the relevant BPFM Cost Type for each table.

5.130 For the avoidance of doubt the costs entered in this worksheet are direct costs only. Any associated indirect costs will be captured in the relevant indirect worksheets. DNOs will then allocate the indirect associated with Atypicals in C1 (Rows 74 to 79).

C16 – Smart Meters Outside Price Control

5.131 This worksheet is designed to collect the elective smart meter data costs for all years of RIIO-ED1 and RIIO-ED2. It is also designed to collect DCC licence fee costs in the RIIO-ED2 price control period and the last two years of the RIIO-ED1 price control.

5.132 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in RIIO-ED2 BPDT Glossary:

- Elective Communication Services
- Smart Meter Communication Licensee Costs.

5.133 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22) and total income should be entered in Rows 24 and 25.

5.134 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 35.

C17 – Legacy Metering Equipment

5.135 This worksheet collects costs and revenue related to legacy metering activity.

5.136 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in Annex A – Glossary:

- Basic Meter Asset Provision
- Data Services (MPAS and data transfer).

5.137 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22) and total income should be entered in Rows 24 and 25.

5.138 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 35.

C18 – De Minimis

5.139 Costs and revenue for De Minimis business activities, by activity, are reported in this worksheet.

5.140 In the table "Direct costs by activity" DNOs should list each De Minimis Business activity and the direct costs and revenue associated with it. DNOs may add additional rows if additional activities need to be listed.

5.141 The key term for this worksheet, defined in Annex A – Glossary, is:

- De Minimis Business.

C19 – Other Consented Activity

5.142 Costs and revenue for Other Consented Activities, by activity, are reported in this worksheet.

5.143 In the table "Direct costs by activity" DNOs should list each Other Consented Activity and the direct costs and revenue associated with it. DNOs may add additional rows if additional activities need to be listed.

5.144 The key term for this worksheet, defined in Annex A – Glossary, is:

- Other Consented Activity.

C21 – Out of Area Networks

5.145 Costs and revenue for Out of Area Networks are reported in this worksheet.

5.146 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in Annex A – Glossary:

- Out of Area Networks
- Out of Area Networks - Network Investment
- Out of Area Networks - Network Operating Costs
- Out of Area Networks - Use of System.

5.147 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22) and total income should be entered in Rows 24 and 25.

5.148 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 36.

C22 – Pass Through

5.149 Costs incurred on Pass-Through items provided for under CRC 2B (Calculation of Allowed Pass-Through Items) are reported in this worksheet. This information is necessary to calculate Allowed Distribution Network Revenue.

5.150 Costs must be reported for the following Pass-Through cost categories, which are defined in Annex A – Glossary:

- Licence Fee Payments
- Business Rates Payments
- Pass-Through Transmission Connection Point Charges Incurred
- Smart Meter Communication Licensee Costs
- Smart Meter Information Technology Costs
- Ring Fence Costs
- Supplier of Last Resort Net Costs
- Eligible Use of System Bad Debt Costs Incurred
- Recovered Bad Debt
- Valid Bad Debt claim
- Shetland Variable Energy Costs
- Shetland Extension Variable Energy Costs
- Shetland New Energy Soultion Residual costs

5.151 No Cost Type split is required.

5.152 In the table "By category" DNOs should report costs for each Pass-Through item listed above, except Shetland Variable Energy Costs. Shetland Variable Energy Costs should be reported under four subcategories contained in the table "Components of the Shetland variable energy costs".

5.153 Only SSEH is required to report costs for the subcategories of Shetland Variable Energy Costs.

C23 – Other Non Activity Based Costs (NABC)

5.154 This worksheet collects data on Non Activity Based Costs and should be reported by each category listed within the sheet. No Cost Type split is required.

5.155 Key terms for this this worksheet, defined in Annex A – Glossary (under the prefix "NABC"), are:

- Any Other Ex-Gratia/Goodwill Compensation Payments
- Bad Debt Expense (net of recoveries)
- Carbon Reduction Commitment Scheme
- Connection Guaranteed Standards of Performance Compensation Payments
- Contingent Pension Asset Costs
- DG Network Unavailability Rebate Payments
- Depreciation
- Distributed Generation Standards Direction issued under Standard Condition 15A
- Ex-Gratia Compensation Payments
- Ex-Gratia Compensation Payments (Connections)
- Ex-Gratia Compensation Payments (Distributed Generation Standards Direction issued under Standard Condition 15A)
- GS Compensation Payments
- Pensions Established Deficit Repair Payments
- Proceeds of Sale of Non-Operational Assets
- Proceeds of Sale of Operational Assets
- Proceeds From Sale of Scrap
- Profit/Loss on Disposal of Fixed Assets
- Profit/Loss on sale of Fixed Assets and Scrap.

5.156 Only Pensions Established Deficit Repair Payments should be reported in this table. Pensions Incremental Deficit Repair Payments are to be reported as Cost Type 'Pensions', across the activities to which it relates.

Reporting of disposal/sale of fixed assets and scrap

5.157 In Rows 50-69, DNOs are required to include details of the profit/loss made on the sale of fixed assets and scrap and the disposal proceeds realised. The profit/loss feeds through to Row 42 and is therefore included in the total of Non Activity Based Costs, feeding through to the C1 cost matrix. This aids reconciliation to the Regulatory Accounts. The disposal proceeds made feed through to table I2 – BPFM Inputs, as they are required to be netted off Totex.

5.158 In accordance with the instructions in paragraphs 2.7, all income/proceeds must be reported as a negative number.

Reporting of guaranteed standards and ex-gratia compensation payments

5.159 To clarify, costs entered in this worksheet are direct costs only. Any associated indirect costs will be captured in the relevant indirect worksheets. DNOs will then allocate the indirect costs associated with NABC in C1 (Rows 74-79).

C24 – Related Party Margin

5.160 The purpose of the table is to show the size of services provided to the DNO, other group companies and external parties by each related party. It will enable Ofgem to identify potential related cross subsidy issues within related party charging.

5.161 The table will be used to help identify recharges that flow through more than one related party before reaching the DNO and provide the percentage of external revenue so that margins can be identified and removed, where appropriate, for comparison to the RIIO-ED1 allowances and to calculate revenue. If External Income accounts for 75% or more of the Related Party income than the margin will be allowable, if not it will be removed.

5.162 If external data is not provided, then the revenue RP margin adjustment will automatically exclude the entire margin for that related party.

5.163 The table allows DNOs to report data for up to fifteen related parties that transact with the DNO. Where the DNO transacts with more than fifteen related parties the tables in the worksheet must be completed for those related parties that have the highest turnover from the DNO. Other related parties must be reported in the commentary to this worksheet with the details required in this worksheet.

5.164 Within the associated commentary, DNOs must provide a detailed explanation of the margins included in recharges from group affiliates and Related Undertakings that do not directly trade with the DNO to each of the listed Related Parties. Where it is felt that excessive margins are being passed to DUoS customers through this process, an appropriate revenue adjustment will be made. DNOs must:

- Ensure that an affiliated captive insurer is separately disclosed.
- Input in the block C to T the turnover data for the related party as charged to each DNO in the group, other related parties and external customers. Input as positive

numbers. Input in the block M to Y the margin – a positive reflects that the Related Party is making a profit, while a negative indicates a loss.

5.165 The Related Party Margin impacting on the DNO directly in column C to T (for 2011-2028 reporting years) will be automatically populated from the relevant year's analysis per Related Party, from Row 52 and below.

5.166 Using this Total Margin per Related Party block, in columns Y to AE for 2016, and then ongoing for future years, there is a further split of this margin by BPFM Cost Type, namely:

- Load Related Capex
- Non Load Related Capex – Asset Replacement
- Non Load Related Capex – Other
- Faults
- Tree Cutting
- 100% Revenue Pool
- Controllable Opex.

5.167 This will allow the necessary adjustments to be made to Tax Pools and annual Totex spend against allowances where the margin of a Related Party has been disallowed.

5.168 There are automatic inputs from each years' C1 Table into columns headed:

- Non Totex
- Outside Price Control
- Total RP Margin.

5.169 These inputs calculate 'Totex – Within price Control' automatically.

5.170 Values in the manual input column 'RP Margin included in indirects allocated outside of Totex PC activities' (ie AG for 2016) should be entered as positive values. The Total input here should equal:

- Related Party Margin allocated to Connections outside of Price Control
- PLUS Related Party Margin Allocated to Non-Distribution
- LESS 'Other costs within Price Control' element of above
- But including 'Atypicals Non Severe Weather (RAV) element of above.

C25 – Shetland (SSEH only)

5.171 This worksheet collects data on Shetland Uncertain Energy Cost, Shetland Extension Fixed Energy Cost and Shetland Enduring Solution Energy; and should be reported by each category listed within the sheet.

5.172 This worksheet is relevant to SSEH only. It enables SSEH to report annually on the efficient costs incurred related to generating electricity on Shetland provided under the Ex Ante Allowance.

5.173 Key terms for this this worksheet, defined in Annex A – Glossary (under the prefix "Shetland"), are:

- Shetland Uncertain Energy Costs (UCSIC)

- Shetland Competitive Process Costs (UCCPC)

- Shetland Extension Fixed Energy Costs (UCSEFEC)

- Shetland Enduring Solution Process Costs (UCSEPC)

- Shetland Extension Battery Costs (UCSEBC)

- Shetland Transmission Link Contribution Costs (STLCC)

- Shetland Enduring Solution Energy Costs

5.174 Shetland Uncertain Energy Costs are made up of Third Party Contracts (TPC), LPS Capital and Operating Costs (LPSC), NINES ongoing costs (NINEs), and potential Contingency costs (CC).

5.175 Shetland Extension Fixed Energy Costs are made up of Third Party Contracts (TPC), LPS Capital and Operating Costs (LSPC; excluding Shetland Extension Battery Costs which has a separate allowance, Shetland Extension Battery Costs), Active Network Management costs (ANM, which replaces NOC), and potential Contingency costs (CC), which are defined in RIIO-ED2 BPDT Glossary. A memo has also been included for Shetland Transmission Link Contribution Costs and Shetland Enduring Solution Energy Costs. These costs are not reported anywhere else in the pack and are the inclusion of these memo items are for information only.

6. Instructions for completing the Business Plan Data Template cost and volume worksheets

Purpose of cost and volume Business Plan Data Template worksheets

6.1 The purpose of the cost and volume (CV) tables is to report expenditure information at various levels of granularity to enable Ofgem to fully understand the relationship with outputs. The detail in the worksheets allows benchmarking at the individual activity level as well as at the Totex level when all activities are added together.

Overview

Cost Type split

6.2 As noted above, all CV tables must be differentiated into Cost Types. The DNO must enter total gross costs by Cost Type (Rows 15-22). This Cost Type data feeds into the C1 matrices.

Customer Contributions and Cost Recoveries

6.3 Income for customer contributions (Row 24) and cost recoveries (Row 25) should be entered as a negative number.

6.4 Entries against customer contributions should relate only to income received from customers. Regarding Connections projects, contributions relating to indirect cost incurred on a Connections project should be included under the relevant type of Connections project, rather than under the particular indirect cost category. All Margins charged on Connections projects should be included in the amount input as contributions.

Total gross costs and total net costs

6.5 Total gross costs (Row 23) and total net costs (Row 26) are automatically calculated in each CV table. These costs feed into the C1 matrices.

Category type data

6.6   Some CV tables only require the costs by Cost Type. Other CV tables also require costs (and volumes) by category type. Category type costs and volumes are more disaggregated activity level costs to allow for more detailed assessment of the elements that comprise the activity in each table.

6.7   The check cells in Row 28 will ensure that the input for total gross costs by Cost Type and total gross costs by category type reconcile. Where relevant, the check cells in Row 28 will ensure that in the input for total net costs by Cost Type and total net costs by category type reconcile.

Asset base

6.8   36 CV tables also require the input of data on the assets added (additions) or removed (disposals) from the distribution network in carrying out a relevant network activity (Rows 34-136). These asset movements are then linked to the summary volumes tables for each year (V5 – volume matrices) and then to V1 - total asset movements. The following CV tables require this data:

- CV1 – Primary Reinforcement
- CV2 – Secondary Reinforcement
- CV3 – Fault Level Reinforcement
- CV5 – Diversions
- CV6 – Diversions Rail Electrification
- CV7 – Asset Replacement
- CV12 – Black Start
- CV13 – BT21C
- CV14 – Legal and Safety
- CV15 – QoS and North of Scotland resilience
- CV16 – Flood Mitigation
- CV17 – Rising Laterals and Mains
- CV18 – OH Clearances
- CV19 – Worst Served Customers
- CV20 – Visual Amenity
- CV21 – Losses
- CV22 – Environmental Reporting
- CV23– High Value Projects RIIO-ED1

- CV24 – High Value Projects DPCR5
- CV25– High Value Projects RIIO-ED2
- CV26 – Faults
- CV27 – Severe Weather 1-in-20
- CV28 – Occurrences Not Incentivised (ONIs)
- CV32 – Dismantlement
- CV34 – Smart Meter Intervention DNO
- CV36 – Network Innovation Allowance (NIA)
- CV37 – Network Innovation Competition (NIC)
- CV38 –IFI & LCN Fund
- CV39 – Directly Remunerated Services (DRS).

CV1 – Primary Reinforcement

6.9   This worksheet collects reinforcement activity undertaken to resolve capacity restraints on the on the Primary Network (33kV and above).

6.10   DNOs must report work undertaken to manage capacity constraints (including voltage) affecting either an individual substation or substation group. Within these categories, reporting must be disaggregated between reinforcement for n-1 or n-2 schemes.

6.11   In each of the sections of the table for n-1 and n-2 schemes affecting individual substations or substation groups, DNOs must report the cost and capacity released at time of energisation (in MVA) by three types of intervention:

- Conventional – substation: reinforcement using Conventional Solutions at substations
- Conventional – circuit: reinforcement using Conventional Solutions on circuits
- Innovative: any Innovative Solution (except the reservation and deployment of flexibility services which is reported separately (see paragraph 6.16 below)).

6.12   The cost and capacity released should be apportioned according to the type of solution used. A single scheme involving multiple types of solution should be reported across all relevant rows. The costs should be allocated based upon the actual costs of each solution. The capacity released should be the amount associated with each solution. For example, a total scheme may cost £10m and release 100MVA but the values reported would be £9m and 60MVA for the conventional part and £1m and 40MVA for the

Innovative part. Where a solution does not provide firm capacity, the capacity released should be calculated as set out in the guidance to the Innovative Solutions worksheet.

6.13   The costs and capacity released must be reported in the row corresponding to the highest and lowest voltages at a substation or the highest and lowest voltages affected by the constraint for a substation group. If a circuit constraint affects a number of substations, it should be reported under substation groups. E.g if two 33/11 kV substations are supplied by a common cable and the cable is restricting the capacity of the substation group and only circuit works are carried out on the 33kV cable causing the constraint, this should be classified as 33kV:11kV (related to the substations affected by the constraint) and not as 33kV:33kV work (based on the cable constraint).

6.14   DNOs should only use the table for "Other substation constraints" where it is not possible to include the activity in one of the tables for capacity constraints. For activity reported under Other Substation Constraints, do not disaggregate reporting between network voltage levels.

6.15   DNOs should only use the table for "Other reinforcement activities" where it is not possible to include the activity in one of the other tables in this worksheet. However, protection enhancements must be reported here. DNOs should enter a reasonable volume unit for each item in this table and the voltage level(s) affected.

6.16   DNOs should use the table entitled "Flexibility" to capture the costs and volumes associated with flexibility services. This relates to any flexibility that is contracted to resolve capacity constraints that may otherwise require a Conventional Solution or other Innovative Solution to provide the necessary capacity. These costs will be included in the DSO memo table. Please refer to section 5 of the Glossary (Cost Mapping Matrix) for further details.

6.17   The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconcile with total gross costs from all category types.

6.18   DNOs should report costs and volumes associated with the Green Recovery Scheme in rows 322-328. These costs will be excluded from the TIM and not link into any other worksheet.

CV2 – Secondary Reinforcement

6.19   This worksheet collects reinforcement activity on the secondary network (LV and HV).

6.20   For capacity constraints affecting a substation, the table is disaggregated between reinforcement done at pole mounted and ground mounted substations (Rows 139-145). The type of solution is disaggregated between Conventional and Innovative Solutions, except the reservation and deployment of flexibility services which is reported separately (see paragraph 6.22 below). The DNO must provide the capacity released by the work at time of energisation (in MVA). If a reinforcement scheme includes both Innovative and Conventional solutions, the capacity should be apportioned between the two categories on the basis of the capacity released by each solution type. The cost should be apportioned on the basis of the cost of each solution type.

6.21   For capacity constraints affecting a circuit, the table is disaggregated between LV and HV network (Rows 147-153). The type of solution is disaggregated between Conventional and Innovative solutions. Innovative Solutions are those that the DNO has included in the Innovative Solutions worksheet. Conventional solutions are any other activities. DNOs should also report the number of circuit reinforcement schemes in the Volumes tables. If a reinforcement scheme includes both Innovative and Conventional solutions, the cost should be apportioned on the basis of the cost of each solution type.

6.22   DNOs should use the table entitled "Flexibility" to capture the costs and volumes associated with flexibility services (Rows 166-168). This relates to any flexibility that is contracted to resolve capacity constraints that may otherwise require a Conventional Solution or other Innovative Solution to provide the necessary capacity. These costs will be included in the DSO memo table. Please refer to section 5 of the Glossary (Cost Mapping Matrix) for further details.

6.23   There is a table for reporting 'Other reinforcement activities' (Rows 155-164). Entries should only be made in this table if the reinforcement activity cannot be categorised as managing a capacity constraint affecting a substation or circuit and therefore reported elsewhere on this worksheet. The DNOs should report the volume as the number of times a reinforcement scheme is required. DNOs must report any socialised reinforcement activity that is required under Standard Licence Condition 13C, in the Connection pack.

6.24   DNOs should report the cost and volumes of activities relating to proactive unlooping services under the Proactive Service Reinforcement table (Rows 170-174). Entries should only be made for 'proactive' services, which relates to unlooping services not triggered by customers.

6.25   The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconcile with total gross costs from all category types.

6.26   This worksheet also includes several memo tables from Row 177. DNOs should report capacity constraints affecting circuits (Rows 179-185) similarly to the table on Rows 147-153, reporting volumes of circuits in km. DNO should set out the actual and forecast network utilisation and capacity released to reinforce the secondary network on Rows 187-321.

6.27   DNOs are required to report the number of HV and LV sites in each of the network utilisation bands for pole mounted and ground mounted transformers separately, on Rows 189-231 and Rows 257-299 respectively. In each of these sections, the first table records the forecasted number of sites in each utilisation bands without interventions, while the second records the forecasted number of sites in each utilisation bands with interventions. DNOs should also input the average utilisation of Pole Mounted and Ground Mounted transformers on Rows 209 & 231 and Rows 277 & 299 respectively.

6.28   DNOs should report cost and volumes related to pole mounted and ground mounted transformers capacity released on Rows 233-253 and Rows 301-321 respectively. This information is disaggregated in network utilisation bandings. Information related to interventions should be reported against the network utilisation band corresponding to transformers' pre-intervention utilisation level.

6.29   On Rows 235-243 and 303-311, DNOs should report the number of transformers subject to an intervention, as well as disposals. On Rows 245-253 and Rows 313-321, DNOs should report cost and volumes of capacity released in MVA. Capacity released should report gross MVA added by an intervention - against the same network utilisation banding as the associated disposals, if any. For the avoidance of doubt, DNOs should not report MVA capacity released as net capacity added to the network due to an intervention.

6.30   DNOs should report costs and volumes associated with the Green Recovery Scheme in rows 332-338. These costs will be excluded from the TIM and not link into any other worksheet.

CV3 – Fault Level Reinforcement

6.31   This worksheet collects details of Fault Level Reinforcement activity on the distribution network.

6.32   DNOs must report costs and volumes associated with Fault Level Reinforcement Schemes. Volumes must be recorded as the number of fault level constraints resolved. The schemes should be reported by the assets (switchboard, circuit or other) affected by the fault level constraint. This should be further disaggregated by voltage level (HV, EHV, 132kV) and by the type of solution (conventional or innovative).

6.33   DNOs should only use the table for Other schemes where it is not possible to include the activity in either switchboards or circuits. Supporting information should be provided in the commentary, explaining the issue and the solution. Examples of such work include LV switchgear and any voltage of pole mounted switchgear.

6.34   During RIIO-ED1 it is anticipated that DNOs will develop new innovative solutions for mitigating fault level issues. It is for this reason that the solution type is disaggregated into conventional and Innovative Solutions.

6.35   Typical conventional solutions are:

- Replacing the switchgear
- Increasing the size of cables
- Replacing transformers with higher impedance units.

6.36   Anticipated innovative solutions are:

- Fault current limiting devices
- Real-time management of fault level.

6.37   Where a combination of innovative solutions and conventional solutions are used, the costs should be allocated across the categories based upon the cost proportions of each element. This may be different for each scheme.

6.38   The volumes are a count of the switchboards/circuits affected by fault level constraints. This means that a count of one will be allocated even if more than one type of solution is used to mitigate the constraint. The approach to be followed is to allocate the unit across the different solutions in proportion to the contribution to resolving the fault level constraint from each solution. This means that if the solution benefits are in the ratio of 80:20 (conventional/innovative), 0.8 units are allocated to conventional and 0.2 units are allocated to innovative.

6.39   The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconcile with total gross costs from all category types.

Technical Details

6.40   Technical data about the number of switchboards affected by fault level issues allows Ofgem to monitor the required levels of Fault Level Reinforcement Schemes.

6.41   With regards to the fault level reinforcement element of the table, DNOs must populate the relevant rows with the total number of EHV and 132kV switchboards/substation busbars, the number of these that have exceeded a fault level duty of above 95% of their rating, and the volume that are subject to fault level risk mitigation measures (such as operational restrictions).

CV4 – NTCC (New Transmission Capacity Charges)

6.42   In RIIO-ED1 and RIIO-ED2, ex ante allowances are provided to DNOs for projects to be carried out by transmission licensees at transmission connection points (also referred to as grid supply points). These ex ante allowances only cover those projects initiated by the DNO for increased capacity at existing transmission connection points or for new transmission connection points.

6.43   The purpose of this table is to collect expenditure information relating to the charges payable by the DNO to a transmission licensee for projects which have been initiated by the DNO but carried out by the transmission licensee. There are two categories of expenditure: the first for reinforcement of existing transmission connection points and the second for new transmission connection points.

6.44 The charges payable to the transmission licensee should be reported by Cost Type and costs and volumes should be reported for the following categories, which are defined in RIIO-ED2 BPDT Glossary:

- TCPs Reinforced - Licensee Requirement
- TCPs New - Licensee Requirement.

6.45 The total charges payable to the transmission licensee should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconcile with total gross costs by category type in Row 143.

6.46 Other charges payable to transmission licensees must be reported in the related tab for Pass Through.

CV5 - Diversions

6.47 This table is for the input of cost and volumes data for:

- The conversion of wayleaves to easements, easements and injurious affection claims where a payment is made to retain an asset in situ
- Network diversions due to wayleave terminations or re-development clauses in easements or other consents
- Network diversions for highways work which are part funded by the DNO (as detailed in NRSWA).

6.48 Costs and volumes associated with diversion activity necessitated by rail electrification work should be recorded in table CV6 Diversions for Rail Electrification.

6.49 The sum of CV5 Diversions and CV6 Diversion for Rail Electrification should amount to the total overall expenditure and workload for diversionary activities.

6.50 The total direct costs and activity volumes are to be reported by voltage and activity categorisation listed within the worksheet. The worksheet contains the following activity categories, which are defined in RIIO-ED2 BPDT Glossary:

- Conversion of wayleaves to easements, easements, injurious affection
- Diversions due to Wayleave Terminations etc.

- Diversions for Highways (funded as detailed in NRSWA).

6.51 For the purposes of this worksheet, volumes must only be recorded once the claim is settled or the Diversion completed.

6.52 A diversion includes all work and equipment utilised in the scheme. Although a diversion project could include multiple equipment types at different voltage levels, for the purposes of this worksheet all cost and volume should be reported as one diversion scheme against the highest voltage involved in that scheme.

6.53 The unit cost tables on the right of the worksheet (columns BS to CJ) are formula driven from the cost and volume data entered. They calculate the annual unit cost.

6.54 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconcile with total gross costs by category type in Row 163.

6.55 This worksheet requires the reporting of asset additions and disposals as a result of Diversion programmes.

CV6 – Diversions (Rail Electrification)

6.56 This table is for the input of cost and volume data for diversionary activities relating to Network Rails electrification programme. It includes both diversions due to wayleave terminations and diversions for highways work which is part-funded by the DNO (as detailed in NRSWA).

6.57 Costs and volumes associated with diversion activity not necessitated by rail electrification work should not be reported in CV6 Diversions for Rail Electrification. Instead, these costs and volumes should be reported in table CV5 Diversions.

6.58 The sum of CV5 Diversions for rail electrification and CV6 Diversions should amount to the total overall expenditure and workload for diversionary activities funded by the DNO.

6.59 There are two sections within this worksheet requiring population with activity volumes and direct costs:

- the first section requires reporting by activity and voltage on an annual basis
- the second section requires reporting by individual electrification project.

6.60 The check cell in Row 216 tests if these two sections reconcile.

6.61 Both sections of the worksheet contain the following activity categories, which are defined in RIIO-ED2 BPDT Glossary:

- Diversions – Wayleave Terminations
- Diversions – Highways (funded as detailed in NRSWA).

6.62 For the second section, activity volumes and direct costs for diversion schemes should be reported by activity type for each discrete rail electrification project, or rail route (eg all volumes and costs for the Paddington to Swansea rail line would be classed as a single project). Table headers Project 1, Project 2 etc should be overtyped with the electrification project name. If required, additional sections should be added to the table to accommodate more electrification projects.

6.63 A diversion includes all work and equipment utilised in the scheme. Although a diversion scheme could include multiple equipment types at different voltage levels, for the purposes of this worksheet all cost and volume should be reported as one diversion scheme against the highest voltage involved in that scheme.

6.64 For the purposes of this worksheet, volumes must only be recorded once the diversion is completed.

6.65 The unit cost tables on the right of the worksheet (columns BS to CJ) are formula driven from the cost and volume data entered. They calculate the annual unit cost.

6.66 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 215.

6.67 This worksheet requires the reporting of asset additions and disposals as a result of Rail Electrification Diversion programmes.

CV7 – Asset Replacement, CV7a – Asset Replacement Network Asset Risk Metric (NARM), CV7b – Asset

Replacement non NARM and CV7c – Asset Replacement Civils Driven

6.68   There are four Asset Replacement worksheets:

- CV7 – Asset Replacement
- CV7a – Asset Replacement NARM
- CV7b – Asset Replacement non NARM
- CV7c – Asset Replacement Civils Driven

6.69   These tables are for the input of cost and volume data related to Asset Replacement works and Civil Works Driven by Asset Replacement.

6.70   The four separate worksheets enable expenditure for activities that have the potential to impact NARM, to be separately identified from all other Asset Replacement expenditure as well as expenditure on Civil Works Driven by Asset Replacement.

6.71   In RIIO-ED1, the Network Asset Secondary Deliverables (NASDs) differed between licensees. In RIIO-ED2, we have decided that all asset types included in the NARM will be consistent across all licensees.

6.72   A licensee's performance in delivering the NARM will be assessed based upon the change in Network Asset Indices associated with Asset Replacement and certain Refurbishment activities (including High Value Projects where the primary driver is Asset Replacement or Refurbishment).

6.73   There are two types of Replacement activity:

- Asset Replacement NARM: Asset Replacement interventions to asset types included in the NARM.
- Asset Replacement non NARM: Asset Replacement interventions to asset types that are not included in the NARM.

CV7 – Asset Replacement

6.74 This worksheet provides a summary of cost and volume data for condition-based replacement of assets and for Civil Works Driven by Asset Replacement. It is auto populated and requires no input from the DNOs.

6.75 The two activities recorded within this worksheet, defined in Annex A – Glossary, are:

- Asset Replacement
- Civil Works Driven by Asset Replacement.

6.76 For Asset Replacement reporting, DNOs should report on asset additions (cells AA34:AR136 in CV7a – Asset Replacement NARM and CV7b – Asset Replacement Non NARM) and disposals (cells AW34:BN136 in CV7a – Asset Replacement NARM and CV7b – Asset Replacement Non NARM) as a result of the asset replacement programme and this sheet will autopopulate (except for rows 15 to 22 and 24 to 25 for DPCR5 and ED1 years where costs should be entered by the DNO). For condition-based asset replacement, costs are to be reported by asset type and voltage based upon the asset installed, not the asset replaced. The number of assets installed represents reportable volumes for this activity. These are to be reported by the applicable voltage and categorisation listed within the worksheet.

6.77 The Smart Meter rollout programme may identify that Cut Outs are in poor condition. Data flows from meter operators will identify the category of defect as defined in MOCOPA. Only the replacement of Cut Outs resulting from Smart Meter Interventions – Category C should be included in this worksheet. The replacement of Cut Outs resulting from Smart Interventions Category A and Smart Interventions Category B should be reported in CV34 Smart Meter Intervention DNO.

6.78 The unit cost tables on the right of the worksheet (columns BS34 to CJ136) are formula driven from the cost and volume data entered against plant assets. They calculate the annual unit cost.

6.79 No civil works costs or volumes are to be entered in the asset replacement tables.

6.80 The costs of acquiring and the credits associated with utilising Strategic Spares are to be entered on to row 140 of CV7b. No volumes are reported for strategic spares in Table CV7a or CV7b but are recorded against the relevant row of the appropriate CV

table where the strategic spare is subsequently utilised. Instructions on how to record Strategic Spares costs are included below.

6.81 There are two treatments to be considered when recording the activities relating to Strategic Spares:

- **Treatment on the acquisition of Strategic Spares:**
    1.1..1. The costs of acquisition should be recorded as a positive value within the year of purchase on row 140 of Table CV7b.
    1.1..2. No volumes to be recorded in the Costs and Volumes Reporting Pack at the point of acquisition as the Strategic Spare has not yet been utilised on the network (DNOs should maintain their own record of volumes, as they would for stock items).
    1.1..3. The purchase of Strategic Spares is treated as a Totex cost, which is different to the treatment of normal stock items.
- **Treatment on the utilisation of Strategic Spares:**
    1.1..4. Once utilised on the network, the original cost of the spare should be recorded as a negative value within the year of utilisation on row 140 of Table CV7b (any subsequent replenishment would be treated as an acquisition (as above)).
    1.1..5. There will be an equal and opposite positive cost entry recorded on the relevant row of the CV table for which the utilisation relates (ie if Strategic Spares were required to rectify a fault, these costs are to be recorded on relevant row on Table 'CV26 – Faults').
    1.1..6. The associated asset volume should be recorded at this point on Asset Register class row of the CV table relating to the cost (in the above example - faults).
    1.1..7. The utilisation of Strategic Spares has no net impact on Totex as the cost transactions recorded at this point are equal and opposite (other than in the unlikely event that the utilisation relates to an activity outside of the price control).

6.82 For Civils Works Driven by Asset Replacement, only costs (no volumes) are summarised (cells E144:V149) by the six categories listed.

6.83 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). This Cost Type split should be inclusive of both asset replacement and Civil Works Driven by Asset Replacement.

6.84 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 152.

6.85 At the bottom of this worksheet are two memo items:

- Steel mast memo
- Asset Replacement memo.

6.86 These memo tables allow for further disaggregation of the Asset Replacement categorisation listed in "Asset Class" table to reflect differences in unit costs at a more disaggregated categorisation. This memo table relates only to asset replacement and not to Civil Works Driven by Asset Replacement.

6.87 The annual unit costs are automatically calculated for these memo tables.

CV7a – Asset Replacement NARM

6.88 This worksheet is for the input of cost, addition volume and disposal volume data for condition-based replacement of assets that are in asset categories that are included in the measure of delivery of the NARM.

6.89 For Asset Replacement reporting, DNOs should report on asset additions (cells AA34:AR136) and disposals (cells AW34:BN136) as a result of the asset replacement programme. For condition-based asset replacement, costs are to be reported by asset type and voltage based upon the asset installed, not the asset replaced. The number of assets installed represents reportable volumes for this activity. These are to be reported by the applicable voltage and categorisation listed within the worksheet.

6.90 The unit cost tables on the right of the worksheet (columns BS34 to CJ136) are formula driven from the cost and volume data entered against plant assets. They calculate the annual unit cost.

6.91 No civil works costs or volumes are to be entered in the asset replacement tables.

6.92 The total gross costs, for years 2020/21 onwards, should be split by Cost Type at the top of the worksheet (Rows 15 to 22). This Cost Type split should be for asset replacement interventions that are included in the measure of delivery of the NARM.

6.93   The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 152.

CV7b – Asset Replacement non NARM

6.94   This worksheet is for the input of cost, addition volume and disposal volume data for condition-based replacement of assets that are in asset categories that are not included in the measure of delivery of the NARM.

6.95   For Asset Replacement reporting, DNOs should report on asset additions (cells AA34:AR136) and disposals (cells AW34:BN136) as a result of the asset replacement programme. For condition-based asset replacement, costs are to be reported by asset type and voltage based upon the asset installed, not the asset replaced. The number of assets installed represents reportable volumes for this activity. These are to be reported by the applicable voltage and categorisation listed within the worksheet.

6.96   The Smart Meter rollout programme may identify that Cut Outs are in poor condition. Data flows from meter operators will identify the category of defect as defined in MOCOPA. Only the replacement of Cut Outs resulting from Smart Meter Interventions – Category C should be included in this worksheet. The replacement of Cut Outs resulting from Smart Interventions Category A and Smart Interventions Category B should be reported in CV34 Smart Meter Intervention DNO.

6.97   The unit cost tables on the right of the worksheet (columns BS34 to CJ136) are formula driven from the cost and volume data entered against plant assets. They calculate the annual unit cost.

6.98   No civil works costs or volumes are to be entered in the asset replacement tables.

6.99   The total gross costs, for years 2020/21 onwards, should be split by Cost Type at the top of the worksheet (Rows 15 to 22). This Cost Type split should be for asset replacement interventions that are included in the measure of delivery of the NARM.

6.100 The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 152.

CV7c – Asset Replacement Civils Driven

6.101 For Civil Works Driven by Asset Replacement, only costs (no volumes) should be entered (cells E15:V22) by the six categories listed.

6.102 The total gross costs, for the years 2020/21 onwards, should be split by Cost Type at the top of the worksheet (Rows 15 to 22). This Cost Type split should be for Civil Works Due To Asset Replacement only.

CV8 – Refurbishment Non NARM Improvement and CV9 – Refurbishment NARM

6.103 There are two refurbishment worksheets:

- CV8 – Refurbishment non NARM;
- CV9 – Refurbishment NARM.

6.104 These tables are for the input of cost and volume data related to Refurbishment works.

6.105 A licensee's performance in delivering the NARM will be assessed based upon the change in Network Asset Indices associated with Asset Replacement and certain Refurbishment activities (including High Value Projects where the primary driver is Asset Replacement or Refurbishment).

6.106 Some, but not all, asset types are included in the NARM deliverable for RIIO-ED2. The asset types where NARM outputs are to be delivered are common to all licensees. Where an asset type is included in the NARM deliverable, only certain Refurbishment activities are considered in the measure of delivery of the NARM.

6.107 The two separate worksheets, CV8 and CV9, enable expenditure for activities that impact the NARM deliverable, to be separately identified from all other Refurbishment expenditure.

6.108 There are two types of Refurbishment activity:

1. Type 1 – Refurbishment NARM: Refurbishment activities that are undertaken on asset categories that are included in the NARM deliverable and are interventions that would be

included in the measure of delivery of the NARM. All Type 1 Refurbishment activities are reported on worksheet CV9 – Refurbishment NARM.

2. Type 2 – Refurbishment non NARM: Refurbishment activities that would relate to interventions that are not included in the measure of delivery of the NARM. All Type 2 Refurbishment activities are reported on worksheet CV8 – Refurbishment Non NARM, irrespective of whether the licensee has an agreed NARM deliverable associated with the asset type.

6.109 Refurbishment activities that are reported in the Refurbishment – NARM worksheet are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in RIIO-ED2 BPDT Glossary. These are Type 1 activities.

6.110 Refurbishment activities that are reported in the Refurbishment – Non NARM worksheet are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in RIIO-ED2 BPDT Glossary. These are Type 2 activities.

CV8 – Refurbishment Non NARM

6.111 This table is for the input of cost and volume data related to Type 2 Refurbishment works. All costs and volumes entered in this table relate to activities that are not considered in the measure of NARM delivery.

6.112 Cost and volume data is reported against the asset type upon which the Refurbishment activity was undertaken.

6.113 The volume data to be reported shall represent the number of assets where Refurbishment - Non NARM activities have been undertaken, irrespective of whether multiple Refurbishment – Non NARM activities have been undertaken on the same asset (eg if two Refurbishment – Non NARM activities have been undertaken in the same reporting year on the same asset then a volume of one should be recorded). For the majority of asset types, the unit reported shall be consistent with the unit used to record the Total Asset Register population on worksheet V1 – Total Asset Movement, with the following exceptions:

Asset Type	Unit
LV Main (UG Consac)	no. of refurbishments*
LV Main (UG Plastic)	no. of refurbishments*
LV Main (UG Paper)	no. of refurbishments*
6.6/11kV UG Cable	no. of refurbishments*
20kV UG Cable	no. of refurbishments*
HV Sub Cable	no. of refurbishments*
33kV UG Cable (Non Pressurised)	no. of refurbishments*
33kV UG Cable (Oil)	no. of refurbishments**
33kV UG Cable (Gas)	no. of refurbishments**
66kV UG Cable (Non Pressurised)	no. of refurbishments*
66kV UG Cable (Oil)	no. of refurbishments**
66kV UG Cable (Gas)	no. of refurbishments**
EHV Sub Cable	no. of refurbishments*
132kV UG Cable (Non Pressurised)	no. of refurbishments*
132kV UG Cable (Oil)	no. of refurbishments**
132kV UG Cable (Gas)	no. of refurbishments**
132kV Sub Cable	no. of refurbishments*

Pilot Wire Overhead	no. of refurbishments
Pilot Wire Underground	no. of refurbishments

* for non-pressurised cables: a volume of one should be reported for each joint or termination where Refurbishment – Non NARM work has been undertaken

** for pressurised cables: a volume of one should be reported for:-

- each joint or termination where Refurbishment – Non NARM work has been undertaken; and

each distinct hydraulic, or gas, section where Refurbishment – Non NARM work has been undertaken.

6.114 The unit cost tables on the right of the worksheet (columns BS to CJ) are formula driven from the cost and volume data entered. They calculate the annual unit cost.

6.115 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 138.

CV9 – Refurbishment NARM

6.116 This table is for the input of cost and volume data related to Type 1 Refurbishment works. All costs and volumes entered in this table relate to activities that can be considered in the measure of NARM delivery.

6.117 Cost and volume data is reported against the asset type upon which the Refurbishment activity was undertaken.

6.118 The volume data to be reported shall represent the number of assets where Refurbishment - NARM activities have been undertaken, irrespective of whether multiple Refurbishment – NARM activities have been undertaken on the same asset (eg if two Refurbishment – NARM activities have been undertaken in the same reporting year on the same asset then a volume of one should be recorded). The unit reported shall be consistent with the unit used to record the Total Asset Register population on worksheet V1 – Total Asset Movement. This requires the aggregation of individual refurbishment activities (e.g. "Painting of tower", "Replacement of individual steelwork members" and "Replacement of tower foundations") into a single reporting category (e.g. 66kV Tower).

6.119 The unit cost tables on the right of the worksheet (columns BS to CJ) are formula driven from the cost and volume data entered. They calculate the annual unit cost.

6.120 An additional split of refurbishment volumes by key refurbishment activity is reported within the memo table in rows 142 to 156. As per 6.110 the volume data to be reported shall represent the number of assets where (disaggregated) Refurbishment - NARM activities have been undertaken.

6.121 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 138.

CV10 – Civil Works Condition Driven

6.122 This worksheet is for the input of costs and volumes data for civil works driven by the condition of civil items.

6.123 Civil works driven by the condition of civil items records the number of unique substations where civil works have taken place during the reporting year, broken down by voltage level (HV, 33kV, 66kV and 132kV). If two civil works activities have been undertaken in the same reporting year on the same asset then a volume of one should be recorded.

6.124 The total costs and activity volumes should be reported by the applicable voltage and categorisation of civil works and substation listed within the worksheet. The costs associated with each category of civil works and substation must also be entered into the respective Total Direct Costs cells.

6.125 The unit cost tables at the right of the worksheet are formula driven from the cost and volume data entered. They will calculate the annual unit cost.

6.126 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 149.

CV11 – Operational IT&T

6.127 This worksheet collects cost and volume data relating to Operational IT&T expenditure, excluding expenditure associated with BT 21st Century.

6.128 Gross costs should be reported for the following categories, which are defined in RIIO-ED2 BPDT Glossary:

- Substation RTU, Marshalling Kiosk and Receivers
- Communications for Switching and Monitoring
- Control Centre Hardware and Software
- Cyber Resilience.

6.129 Volumes should also be reported for Substation RTU, Marshalling Kiosk and Receivers.

6.130 For each Operational IT category, DNOs are required to enter a cost breakdown for each distinct programme, project or initiative. Check cells in Row 254 confirm that the total costs for each of these separate programmes, projects or initiatives reconciles with the total costs reported for Operational IT&T in Row 145.

6.131 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 145.

6.132 Cyber Resilience costs in Rows 144 and 176 should be disaggregated and reflected in M27 Cyber Security Operational IT. Please refer to section 9 for further details.

6.133 At the bottom of this worksheet, there is a memo table included in Rows 173 to 177 to capture any costs in relation to DSO. Cost categories in the memo table are as shown in 6.128 above. These costs will be included in the M19 DSO Memo table. Please refer to section 5 of the Glossary (Cost Mapping Matrix) for further details.

6.134 In Rows 149 to 154, DNOs should report the costs and volumes associated with the installation of monitoring equipment on pole mounted and ground mounted transformers. This information is disaggregated by bundled and standalone installations. 'Bundled' installations refers to monitoring equipment installations bundled as part of another activity - for example, installing a new transformer. Standalone installations refer to all other instance.

6.135 In cells AF157 and AF162, DNOs should input the total number of pole mounted and ground mounted sites with installed monitoring for 2016 respectively.

6.136 At the bottom of the worksheet, there is a memo table included to capture costs in relation to Data & Digitalisation. These costs will be included in the M29 D&D Memo table. The costs reported in this table should reconcile with investment proposals detailed in the Digitisation Strategy and Action Plan (DSAP). Please refer to the RIIO-ED2 Business Plan Guidance for further details.

CV12 – Black Start

6.137 This table provides expenditure and activity on Black Start resilience enhancement for electrical distribution systems and associated telecoms and SCADA assets at DNO substations with a secondary voltage of 11kV (or 6kv) excluding single customer sites as defined in ENA Engineering Regulation G91.

6.138 In the first table 'Sites resolved' DNOs should report the volumes of sites where Black Start resilience has been or will be achieved for protection or SCADA batteries and the costs of achieving this. The costs and volumes of Securing of Existing Telecommunications Infrastructure by site should also be recorded.

6.139 The unit cost tables on the right of the worksheet (columns BS to CJ) are formula driven from the cost and volume data entered. They calculate the annual unit cost.

6.140 The second table 'Sites to be resolved' provides an indication of future work programmes. DNOs are required to provide the number of outstanding EHV and 132kV substation sites for Protection and SCADA batteries and the number of outstanding sites for Securing of Existing Telecommunications infrastructure.

6.141 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by sites resolved in Row 146.

6.142 This worksheet requires the reporting of asset additions and disposals as a result of Black Start activities.

6.143 There are Memo tables to provide detail on the solution employed. The categories for which gross costs and volumes are to be reported, defined in RIIO-ED2 BPDT Glossary (under the prefix "Black Start Resilience"), are:

- Protection Batteries
- SCADA Batteries
- Generator
- DC Disconnection Scheme
- Land lines & Internal Telephony
- Mobile Voice Communications
- SCADA Infrastructure.

6.144 Volumes for the first four categories should be reported by voltage (EHV and 132kV).

6.145 Annual unit costs are populated automatically using the activity and cost data.

CV13 – BT21CN

6.146 This worksheet is for the input of volume and cost data for work carried out relating to BT's 21st century project.

6.147 The tables in this worksheet report the volumes and costs of providing replacement protection communication circuits and the costs of operational measures associated with BT21CN.

6.148 The categories for this worksheet, defined in RIIO-ED2 BPDT Glossary (under the prefix "BT21CN") are:

- Protection Communication Circuits – Replacement
- Protection Operational Measures
- Infrastructure Enabling.

6.149 The total direct costs are to be reported by the applicable categorisation listed within the worksheet. For the first two categories, the volumes correspond to the number of BT communication circuits from which reliance has been removed. No volumes are required to be reported for Infrastructure Enabling.

6.150 The costs associated with these works must be entered into the respective total direct costs cells.

6.151 The unit cost tables on the right of the worksheet (columns BS to CJ) are formula driven from the cost and volume data entered. They calculate the annual unit cost for **Protection Communication Circuits – Replacement and Protection Operational Measures.**

6.152 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 143.

6.153 This worksheet requires the reporting of asset additions and disposals as a result of BT21CN activities.

CV14 – Legal and Safety

6.154 This worksheet is for the input of cost and volume data for Legal and Safety activities.

6.155 The categories for which gross costs and volumes are to be reported in this this worksheet, defined in Annex A – Glossary, are:

- Site security by number of substations (split by voltage - HV, EHV and 132kV)
- Asbestos management – surveys & signage by number of sites
- Asbestos management – containment or removal by number of sites
- Asbestos management – meter position replacement by number of meters
- Asbestos management – meter positions containment by number of meters
- Safety climbing fixtures - for supports or plant items
- Fire protection by number of substations
- Earthing upgrade by number of locations
- Cable Pits by number of sites
- Fire Blankets - Link Box related by number of sites
- Shallow Cables

6.156 Costs for DNO specific programmes should be entered into the final table of the worksheet "Other – specify". Each programme should be entered on a separate Row.

6.157 The unit cost tables on the right of the worksheet (columns BS to CJ) are formula driven from the cost and volume data entered. They calculate the annual unit cost.

6.158 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 201.

6.159 This worksheet requires the reporting of asset additions and disposals as a result of Legal and Safety related programmes.

CV15 – QoS and North of Scotland Resilience

6.160 This worksheet is for the input of cost and volume data for QoS and North of Scotland Resilience programmes. Only SSEH is required to complete the North of Scotland costs and volumes.

6.161 The categories for which gross costs and volumes are to be reported in this this worksheet, defined in Annex A – Glossary, are:

- QoS (costs only)
- Remote Location Generation Capital (costs only)
- North of Scotland Resilience (costs and volumes).

6.162 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Rows 149.

6.163 This worksheet requires the reporting of asset additions and disposals as a result of QoS and North of Scotland resilience works.

CV16 – Flood Mitigation

6.164 This worksheet is for the input of cost and volume data for flood mitigation expenditure. It contains a summary of the volume data reported on the M1 flood mitigation worksheet.

6.165 DNOs should input costs and volumes associated with:

- flood mitigation schemes by substation
- flooding site surveys by substation.

6.166 There are separate sections to report these activities for both Fluvial/Coastal and Pluvial mitigation work.

6.167 For fluvial/coastal flood mitigation schemes, costs and volumes are broken down by ETR138 flooding risk event level categories (1 in 100, 1 in 200 and 1 in 1000) and by voltage (HV, EHV, 132kV and 275kV & 400kV).

6.168 For pluvial schemes, only a breakdown by voltage is required.

6.169 The volumes are the number of substations for all of the above.

6.170 There are separate Rows for non-site specific costs, at the base of the sub table for both fluvial/coastal and pluvial flood mitigation schemes.

6.171 The categories for this worksheet, defined in Annex A – Glossary, are:

- Flooding Risk ETR 138
- Fluvial/Coastal Flood Risk
- Pluvial Flood Risk
- Flood mitigation schemes
- Flooding site surveys
- 1 in 100 Event (see Flooding Risk ETR 138)
- 1 in 200 Event (see Flooding Risk ETR 138)
- 1 in 1000 Event (see Flooding Risk ETR 138)
- Non Site Specific Costs.

6.172 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 189.

6.173 This worksheet requires the reporting of asset additions and disposals as a result of flood mitigation schemes. This is to accommodate the rare circumstances where a DNO is planning to relocate a substation due to flood risk and substation assets installed and removed as a result.

6.174 Costs associated with the inspection and repair and maintenance of installed flood defence measures should be included on tables CV30 and CV31 respectively.

CV17 – Rising and Lateral Mains (RLMs)

6.175 This worksheet provides a summary of rising and lateral mains (RLMs) expenditure. Costs and volumes should be entered in this worksheet and not in CV7 - Asset Replacement or CV31 – Repair and Maintenance.

6.176 Beneath the Cost Type split there are three sections of costs and volumes.

6.177 The first is the asset cost and volume (additions and disposals) associated with RLMs. Only the following Rows of the standard asset list in the CV tables are expected to be completed:

- Length of LV Main cable associated with RLMs by km (Row 38)
- Number of Rising and Lateral Mains (Row 40)
- Number of LV Services associated with RLMs (Row 42)
- Number of LV Circuit Breakers (Row 43)
- Number of LV Pillars (ID) (Row 44)
- Number of LV Boards (WM) associated with RLMs (Row 47)
- Number of LV cut outs (metered) (Row 49)
- Number of LV Boards (X-type network) (WM) (Row 50).

6.178 The second section is the Inspection and Maintenance costs associated with RLMs. Data is required for the following, which are defined in RIIO-ED2 BPDT Glossary:

- LV mains inspected
- LV mains repaired or maintained
- LV services inspected
- LV services repaired or maintained.

6.179 The total gross costs of these first two sections should equal the total gross costs by Cost Type split in Row 23.

6.180 The third section should capture costs and volumes by the number of customers serviced by the RLM programme. These costs are not additional to those in the first two sections, but a different way of presenting the data. The total gross costs by customer

should equal the total gross costs in of the first two sections and therefore Row 23. The data should be captured by the type of property – House, Flat and Multi-Storey (defined in Annex A – Glossary).

6.181 The unit cost tables on the right of the worksheet (columns BS to CJ) are formula driven from the cost and volume data entered. They calculate the annual unit cost.

6.182 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconcile with the total costs of the assets installed (Row 137) and inspection and maintenance activities (Row 144).

CV18 – Overhead Line Clearances

6.183 This worksheet collects the costs and volumes associated with the on-going management of overhead clearances to ensure compliance with vertical and horizontal clearances requirements as specified in Regulations 17 and 18 (respectively) of the Electricity Supply Quality and Continuity Regulations (2002) (as amended).

6.184 This work includes the completion of work programmes that have been agreed with the Health and Safety Executive and the resolution of additional issues that are subsequently identified.

6.185 Beneath the Cost Type split this worksheet collects four categories of costs by four voltage levels (LV, HV, EHV and 132kV), which are defined in RIIO-ED2 BPDT Glossary:

- OH Horizontal or Vertical Clearance – Sites Resolved
- OH Horizontal or Vertical Clearance – sites Resolved as Part of Other Work
- OH Horizontal or Vertical Clearance – Sites Identified in Year
- OH Horizontal or Vertical Clearance – Outstanding Sites to be Resolved.

6.186 OH Horizontal or Vertical Clearance – Sites Resolved represents the number of Overhead Clearance Sites where work has been carried out where the prime driver of the work is to remove the non-compliance issues. Both cost and volume data is required. The volumes are reported by voltage level.

6.187 OH Horizontal or Vertical Clearance – Sites Resolved As Part of Other Work represents those sites where the non-compliance is resolved through other works. The costs for

these sites will be reported under the other works therefore only the volumes of sites resolved should be included.

6.188 OH Horizontal or Vertical Clearance – Sites Identified In Year represents the scale of new issues identified. It includes both those Overhead Clearance Sites that have been identified and addressed during the year and those that remain outstanding at the end of the year. The volumes are reported by voltage level.

6.189 OH Horizontal or Vertical Clearance – Outstanding Sites To Be Resolved represents the total number of Overhead Clearance Sites that remain outstanding at the end of the Regulatory Year. The majority of the data is formula driven from reference volumes specified for 2010-11. The calculation uses the reference volumes, adding any additional sites identified in subsequent years and subtracting the sites that are resolved in subsequent years.

6.190 The unit cost table to the right of the worksheet is formula driven from the volumes of OH Clearance Sites resolved and cost data entered, and will calculate the unit cost data for each voltage. This is only calculated for those OH clearance sites resolved where the prime driver of the work is to remove the non-compliance issues.

6.191 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by sites resolved in Row 146.

6.192 This worksheet requires the reporting of asset additions and disposals as a result of OH Clearances programmes.

CV19 – Worst Served Customers (WSCs)

6.193 This worksheet is for the reporting of direct costs, volumes of schemes and asset changes related to investment for Worst Served Customers (WSCs).

6.194 The investment for WSCs has a specific regulatory mechanism and the costs and volumes reported in this worksheet should only be for those schemes that relate to that mechanism.

6.195 Gross costs should be reported by Cost Type only. No further disaggregation is required.

6.196 The key terms for this worksheet, defined in Annex A – Glossary, are:

- Worst Served Customers (WSCs)
- Worst Served Customer Schemes.

6.197 The volumes of WSCs Schemes should be reported. The volumes should be for completed schemes. This will provide a cross check with the supporting memo tables which specify the year in which schemes are completed.

6.198 Unit cost calculations are not performed on this worksheet because schemes vary in scale and content, and the recovery of expenditure is limited by a cap per worst served customer benefitting from the expenditure and an overall expenditure cap.

6.199 This worksheet requires the reporting of asset additions and disposals as a result of WSCs Schemes.

CV20 – Visual Amenity

6.200 The purpose of this worksheet is to record the costs of Visual Amenity Projects to feed into C1 and associated asset additions and disposals to feed into V1 – Total Asset Movements.

6.201 Costs are required by Cost Type, as well as by voltage for Expenditure on Visual Amenity inside and outside designated areas. ED2 costs are not required by voltage level.

6.202 Total volumes are required by asset type. ED1, but not ED2, volumes are also required by voltage level for the following:

- OHL inside designated areas
- OHL removed inside designated areas
- UG cables installed inside designated areas
- OHL removed outside designated areas (10% allowance)
- UG cables installed outside designated areas (10% allowance)

CV21 – Losses

6.203 The purpose of this worksheet is to report volumes and costs related to distribution losses. DNOs should only complete this worksheet where losses management is the primary driver of the investment or action. This is to avoid double counting of volumes and costs reported in other worksheets.

6.204 Volumes and costs should be reported against the appropriate asset classes listed in this worksheet. The table "Activities where losses is the primary driver" should also be completed. It provides a high-level expenditure breakdown of losses activities, where losses management is the primary driver of investment, in the following areas, which are defined in the Glossary:

- Equipment to Manage Losses
- Operational Activities to Manage Losses.

6.205 We would expect the costs reported for Equipment to Manage Losses to be associated with the asset class list reported in this worksheet.

6.206 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 143.

6.207 This worksheet requires the reporting of asset additions and disposals as a result of Losses activities.

CV22 – Environmental Reporting

6.208 The purpose of this worksheet is to record the costs of environmental activities to feed into C1 and associated asset additions and disposals to feed into V1 – Total Asset Movements. It is also to record the costs and volumes relating to certain environmental activities.

6.209 This worksheet requires the reporting of asset additions and disposals as a result of environmental activity.

6.210 The worksheet requires the reporting of cost and volumes for the following terms as defined in the BPDT Glossary:

- Noise Pollution
- Non-Undergrounding Visual Amenity Schemes
- Oil Pollution Mitigation Scheme - Cables
- Oil Pollution Mitigation Scheme - Non Operational Sites
- Oil Pollution Mitigation Scheme - Operational Sites
- SF6 Emitted Mitigation Schemes
- SF6 Emitted Mitigation Schemes
- Undergrounding for Visual Amenity
- Contaminated Land Clean Up
- Environmental Civil Sanctions
- Persistent organic pollutant Remedial Asset Changes
- Persistent organic pollutant Oil Testing
- Persistent organic pollutant Remedial Oil Changes.

6.211 Costs and volumes for each activity should be reported by category listed in the table "Environmental costs and volumes" and "Persistent Organic Pollutant costs and volumes". These should be recorded here where the primary driver of the activity undertaken was environmental improvements.

6.212 In the Persistent Organic Pollutant asset replacement memo table, DNOs should capture the costs and volumes associated with the asset replacement of 6.6/11kV and 20kV pole mounted transformers. DNOs should capture the costs and volumes based upon the capacity of the asset added.

CV23 RIIO-ED1 High Value Projects HVP

6.213 This worksheet is for the input of volume and cost data on RIIO-ED1 High Value Projects (HVP). All costs and volumes associated with RIIO-ED1 high value projects should be included in this worksheet. For the DPCR5 HVP the designated tab (CV24) should be used.

6.214 The asset list should be populated with the volumes (additions and disposals) for all projects.

6.215 The table "Expenditure Breakdown (by project)" collects HVP volume and expenditure data by project. This includes information including the scheme name, project/scheme

ID and investment driver. The corresponding total direct costs should be reported in the adjacent table.

6.216 The investment driver must be picked from the drop down menu in the Detailed Activity table.

6.217 The "Expenditure Breakdown (by driver)" table populates automatically from data contained above.

6.218 Information about HVP progress and completion should be included in the narrative

6.219 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by sites resolved in Row 152.

6.220 When reporting a project as a HVP the costs and volumes, LI, HI and Criticality movements associated with it should not be entered within any other cost category (for example Asset Replacement, Reinforcement or Civil Works) within this reporting pack. Related HI and Criticality movements should be reported in the relevant tables in the NARM reporting pack

6.221 Customer Contributions and Cost Recoveries should also be reported in Rows 24 and 25. The purpose of check cell in Row 29 is to ensure the total net costs in Row 26 reconciles with the total net costs by the disaggregated reporting in row 162.

CV24 – HVP DPCR5

6.222 This worksheet is for the input of volume and cost data on DPCR5 High Value Projects (HVP). All costs and volumes associated with DPCR5 high value projects should be included in this worksheet. This applies even if the total expenditure for each HVP no longer meets the criteria for a HVP. Costs and volumes for any carry-over into ED1 of activities associated with DPCR5 HVPs should also be included.

6.223 On the DPCR5 HVP tab, the table "Expenditure Breakdown (by project)" table collects HVP volume and expenditure data by project. This includes information including the scheme name, project/scheme ID and investment driver. The corresponding total direct costs should be reported in the adjacent table.

6.224 The investment driver must be picked from the drop down menu in the Detailed Activity table.

6.225 The "Expenditure Breakdown (by driver)" table populates automatically from data contained above.

6.226 Information about HVP progress and completion should be included in the narative

6.227 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by sites resolved in Row 152.

CV25 – HVP ED2

6.228 This worksheet is for the input of volume and cost data on RIIO-ED2 High Value Projects (HVP). All costs and volumes associated with RIIO-ED2 high value projects should be included in this worksheet.

6.229 The asset list should be populated with the volumes (additions and disposals) for all project.

6.230 The table "Expenditure Breakdown (by project)" collects HVP volume and expenditure data by project. This includes information including the scheme name, project/scheme ID and investment driver. The corresponding total direct costs should be reported in the adjacent table.

6.231 The investment driver must be picked from the drop down menu in the Detailed Activity table.

6.232 The "Expenditure Breakdown (by driver)" table populates automatically from data contained above.

6.233 Information about HVP progress and completion should be included in the narrative

6.234 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by sites resolved in Row 147.

6.235 When reporting a project as a HVP the costs and volumes, LI, HI and Criticality movements associated with it should not be entered within any other cost category (for example Asset Replacement, Reinforcement or Civil Works) within this reporting pack. Related LI, HI and Criticality movements should be reported in the relevant tables in the NARM and LI tables within this reporting pack.

6.236 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). Customer Contributions and Cost Recoveries should also be reported in Rows 24 and 25

CV26 – Faults

6.237 This worksheet is for the input of cost and volume data related to Faults (Troublecall Occurrences classified as Unplanned Incidents) on Power System Voltage Equipment.

6.238 In the section for Unplanned Incidents on Power System Voltage Equipment, both costs and volumes should be reported. The costs and volumes should be disaggregated by the voltage and Power System Voltage Equipment categories listed within the worksheet.

6.239 The costs and volumes reported in this worksheet should exclude all data (costs and volumes) related to Unplanned Incidents which occur as part of Severe Weather 1-in-20 events. The costs and volumes for these events are reported separately in CV27 – Severe Weather 1-in-20.

6.240 The costs reported should include the cost of restoring supplies to any affected customers, the cost of any work undertaken to restore the faulted asset to Pre-Fault Availability, work undertaken on any associated assets that is necessitated due to the circumstances of the faulted asset and elected work on the same asset undertaken at the same time. Where applicable, this includes costs for:

- Switching to restore supplies.
- The cost of any temporary supplies.
- Repairs to, or replacement of the faulted asset.
- Work on any associated assets necessary by factors such as the configuration, location or access constraints associated with the faulted asset.
- Elected work on the same asset at the same time, such as replacement of additional components or full replacement even if repair would be possible.

6.241 The following are a few examples:

- A faulted cable is found to be wet and needs to be cut back to find a dry section of cable to make a joint. All the length of cable is included.
- A cable faults near a road crossing and the repair has to be extended to the other side of the road. All the length of cable is included.
- A cable termination on an item of switchgear faults. The cable termination is remade which necessitates jointing in a new section of the cable. The cost of jointing in the necessary length of cable and re-terminating included.
- A ground mounted transformer faults and has to be replaced, but it is physically linked to an LV pillar that in not compatible with the new transformer and therefore the LV pillar is also replaced. The fault cost includes the replacement of both items

6.242 The following is an example of elected work on the same asset:

- An item of switchgear could be returned to Pre-Fault Availability by the repair to a cable termination, but the licensee elects to change the switchgear.

6.243 Appendix 1 of this document provides further examples of cost allocation for typical scenarios. In the event a DNO identifies any conflict between these examples (above or in the Appendix) and the principles set out in the opening clause paragraph 1.4, the licensee must follow the principles and identify in its reporting commentary the identified conflict with the examples.

6.244 For the avoidance of doubt the costs associated with replacing assets as a result of an Unplanned Incident should be reported only in this worksheet and not in CV7 Asset Replacement. However, if the licensee elects to replace additional Separately Identifiable Asset Register Assets (which is not necessary due to the circumstances of the faulted asset) these should be reported in CV7 Asset Replacement. The following is an example of elected work on an additional asset:

- A defective link box is found during the repair of an LV UG cable fault. The restoration of the cable to Pre-Fault Availability does not necessitate the replacement of the link box. If the link box is replaced it is reported as asset replacement because it is a Separately Identifiable Asset Register Asset.

6.245 The costs of restoring supplies, repairs and/or replacement of assets related to an Unplanned Incident which are due to metal theft on a DNOs network should be reported in this worksheet.

6.246 The cost of restoring supplies, repair and/or replacement of assets related to Unplanned Incidents which is due to a fault associated with rising and lateral mains (RLM) should be reported in this worksheet under the LV services or LV mains fault categories as appropriate.

6.247 The unit cost tables on the right of the worksheet (cells BS140:CJ167) are formula driven from the cost and volume data entered.

6.248 It is acknowledged that due to the different scopes of work undertaken to return different assets back to Pre-Fault Availability the associated unit costs may vary across licensees. This should be reflected in any associated comparative analysis.

6.249 Licensees are encouraged to provide details within the commentary of faults with abnormally high levels of expenditure or which could have a material impact on a licensees ability to deliver Network Asset Secondary Deliverables (NASD). This can be considered by Ofgem when assessing licensees delivery against NASD monetised risk target under Licence Condition CRC5D.

6.250 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 168.

6.251 This worksheet requires the reporting of asset additions and disposals as a result of unplanned incident activity.

6.252 Fault rates are automatically populated in cells CL140:DC167.

CV27 – Severe Weather 1-in-20

6.253 The purpose of this table is to record the costs and volume of Troublecall unplanned incidents associated with Severe Weather 1-in-20 Events.

6.254 The costs and volumes in this worksheet should be for only those incidents which occur as part of Severe Weather 1-in-20 events for which exceptional event exemptions have

been requested as set out in CRC2D of the distribution licence, and which meet the 1-in-20 thresholds shown in the table below.

DNO	1-in-20 severe weather event thresholds (42*mean number of incidents per day)
ENWL	290
NPGN	194
NPGY	209
WMID	332
EMID	336
SWALES	217
SWEST	316
LPN	74
SPN	285
EPN	479
SPD	400
SPMW	359
SSEH	315
SSES	351

6.255 The costs and volumes data provided in this worksheet should not be included in CV26 – Faults.

6.256 The volume of unplanned incidents should be disaggregated by the voltage and Power System Power System Voltage Equipment categories listed within the worksheet.

6.257 It is recognised that cost collection during 1-in-20 severe weather events may not allow full disaggregation of costs into the categories of unplanned incidents on Power System Voltage Equipment. As a consequence, the costs related to severe weather 1-in-20 events are reported by the following voltage disaggregation:

- LV Network
- HV Network
- EHV Network
- 132kV Network.

6.258 The number of 1-in-20 severe weather events in the Regulatory Year should also be provided.

6.259 All categories listed within this worksheet are defined in RIIO-ED2 BPDT Glossary.

6.260 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 168.

6.261 This worksheet requires the reporting of asset additions and disposals as a result of 1-in-20 severe weather unplanned incidents activity.

CV28 – Occurrences Not Incentivised (ONIs)

6.262 This worksheet is for the input of cost and volume data for Troublecall Occurrences Not Incentivised (ONIs).

6.263 Since there is a separate revenue mechanism for defects associated with the smart meter roll out, ONIs do not include occurrences which are identified during the installation of, or attempted installation of, a smart meter. These occurrences should be included in CV34 – Smart Metering Roll Out.

6.264 The data required for this worksheet is predominantly from the enquiry service operated by the licensee under standard condition 8 (Safety and Security of Supplies Enquiry Service). In some limited cases, DNOs may use alternative systems for some of the data, eg the management of non-urgent street lighting faults. Where this applies all relevant data should be reported in this worksheet. Reactive work that has to be addressed quickly (i.e. Category A defects requiring urgent action and Category B defects preventing work, which need resolving within a short timescale) should be reported in ONIs. Work which does not need to be resolved in a short timescale should be reported in CV7 – Asset Replacement, as effectively this is information for the DNO to inform its asset replacement programme.

6.265 The reporting of cost and volume data for ONIs is separated into two categories, which are defined in RIIO-ED2 BPDT Glossary:

- Power System Voltage Equipment/No Unplanned Incident
- Other Occurrences (Not Affecting Power System Voltage Equipment).

6.266 Each category is further disaggregated into a number of sub-categories, which are also defined in RIIO-ED2 BPDT Glossary.

6.267 The unit cost table is formula driven from the cost and volume data entered.

6.268 Costs should be split by Cost Type at the top of the worksheet. The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 152.

6.269 This worksheet requires the reporting of asset additions and disposals as a result of ONI activity. Provide commentary to explain any distortion in unit costs for rows "BS137:CJ144" and "BS147:CJ149" because, there will be volumes recorded in two separate rows for street lighting and cut outs but costs recorded in one row.

6.270 Following the end of the Smart Meter Roll Out, any faults on smart meters should be reported under ONIs.

CV29 – Tree Cutting

6.271 This worksheet is for the input of cost and volume data related to Tree Cutting.

6.272 These are the costs and volumes directly related to tree cutting and costs associated with the facilitation of tree cutting activities. This includes the workload involved with the physical felling or trimming of vegetation away from network assets and also associated costs for activities such as generation, outages, traffic management, obtaining consents and network rail costs, compliance with the requirements of ENATS 43-8 (horizontal and vertical clearances) and ETR 132 (network resilience) of the ESQCR 2006.

6.273 The key terms for this worksheet, defined in Annex A – Glossary are:

- ENATS 43-8
- ETR 132
- ETR 132 Physical Cut
- ETR 132 Other Declared Compliant
- Spans Cut
- Spans Inspected (Tree Cutting)
- LiDAR Inspections
- Span length Average
- Cut Cycle

- Other work to achieve ETR 132 compliance
- Overhead network length cleared
- Network Parameters
- Tree Cutting Policy
- Tree Cutting Cycle.

6.274 The total activity costs and volumes are to be reported by the applicable categorisation listed within the each table.

6.275 The unit cost tables on the right of the worksheet (cells BS37:CJ48) are formula driven from the cost and volume data entered.

6.276 Costs should be split by Cost Type at the top of the worksheet. The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 126.

6.277 The 'Network Parameters and ENATS 43-8 Tree Cutting Policy' table collects volume data. The total volumes data should be reported by the applicable voltage category and categorisation listed within the table.

6.278 The 'Activity and Progress against ETR 132' sub-tables summarise the total Overhead Network Length that has been cleared to meet or assessed as meeting the standard during the year. The table also requires DNOs to record how much of their total network is compliant with the standard at the reporting date, in km and as a percentage of their total network length. The Activity section of the table enables DNOs to distinguish between circumstances where physical work has been undertaken to achieve compliance or where compliance has been achieved without the need for physical activity/or as a result of work under other investment drivers.

6.279 It should be noted that DNOs are not required to bring their entire network up to a standard that is compliant with ETR 132. DNOs are only required to bring strategic overhead lines up to this standard. The Regulatory Impact Assessment undertaken by the Department of Trade and Industry assumed that 20% of each DNOs HV & EHV overhead line networks would be classed as strategic. The DNOs total network compliance should therefore be considered against the level of strategic overhead lines on their network.

CV30 – Inspections

6.280 The worksheet reports the volumes and costs associated with inspections by asset type.

6.281 The total activity volumes and direct costs are to be reported by the applicable category, activity and voltage level listed within the worksheet. The volumes correspond with each volume type listed for the applicable row. The total direct costs for each activity must be entered into their respective cells in the adjacent table.

6.282 All categories within this worksheet are defined in RIIO-ED2 BPDT Glossary.

6.283 The volume inspected is for DNOs to report the quantity of individual assets or sites that have been inspected, irrespective of the number of times that the same asset has been inspected. For example if an asset has been inspected four times during the reporting year, a count of one inspection would be recorded.

6.284 For the avoidance of doubt, substation flood defence inspection costs and volumes should be reported within this table in the row reflecting the highest voltage in operation at the relevant substation.

6.285 The unit cost tables on the right of the worksheet (cells BS33:CJ65) are formula driven from the cost and volume data entered.

6.286 Costs should be split by Cost Type at the top of the worksheet. The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 66.

CV31 – Repair and Maintenance

6.287 This worksheet is for the input of cost and volume data related to Repair & Maintenance.

6.288 Cost and volume data is reported against the asset type upon which the Repair & Maintenance activity was undertaken.

6.289 The volume data to be reported shall represent the number of assets where Repair & Maintenance activities have been undertaken, irrespective of whether multiple Repair & Maintenance activities have been undertaken on the same asset (eg if two Repair & Maintenance visits have been undertaken, in the same reporting year on the same asset, then a volume of one should be recorded). For the majority of asset types, the unit reported shall be consistent with the unit used to record the Total Asset Register population on worksheet V1 – Total Asset Movement, with the following exceptions:

Asset Type	Unit
LV Main (OHL) Conductor	spans
LV Main (UG Consac)	no. of repairs
LV Main (UG Plastic)	no. of repairs
LV Main (UG Paper)	no. of repairs
6.6/11kV OHL (Conventional Conductor)	spans
6.6/11kV OHL (BLX or similar Conductor)	spans
20kV OHL (Conventional Conductor)	spans
20kV OHL (BLX or similar Conductor)	spans
6.6/11kV UG Cable	no. of repairs
20kV UG Cable	no. of repairs
HV Sub Cable	no. of repairs
33kV OHL (Pole Line) Conductor	spans
66kV OHL (Pole Line) Conductor	spans
33kV OHL (Tower line) Conductor	spans
66kV OHL (Tower Line) Conductor	spans
33kV UG Cable (Non Pressurised)	no. of repairs
33kV UG Cable (Oil)	no. of repairs
33kV UG Cable (Gas)	no. of repairs
66kV UG Cable (Non Pressurised)	no. of repairs
66kV UG Cable (Oil)	no. of repairs
66kV UG Cable (Gas)	no. of repairs
EHV Sub Cable	no. of repairs
132kV OHL (Pole Line) Conductor	spans
132kV OHL (Tower Line) Conductor	spans
132kV UG Cable (Non Pressurised)	no. of repairs
132kV UG Cable (Oil)	no. of repairs
132kV UG Cable (Gas)	no. of repairs
132kV Sub Cable	no. of repairs

Pilot Wire Overhead	no. of repairs
Pilot Wire Underground	no. of repairs

6.290 Repair & Maintenance includes the invasive examination of system assets. Other activities considered as Repair & Maintenance are further identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Chapter 3 of RIIO-ED2 BPDT Glossary.

6.291 Where Repair & Maintenance activities are undertaken as part of other works that are classified as Refurbishment (Non NARM) or Refurbishment (NARM), then the associated costs shall be recorded on the appropriate Refurbishment worksheet.

6.292 For the avoidance of doubt, substation flood defence repair and maintenance costs and volumes should be reported within this table in the row reflecting the highest voltage in operation at the relevant substation.

6.293 The unit cost tables on the right of the worksheet (cells BS34:CJ142) are formula driven from the cost and volume data entered.

6.294 Costs should be split by Cost Type at the top of the worksheet. The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 143.

CV32 – Dismantlement

6.295 The purpose of this worksheet is to record the costs of Dismantlement to feed into C1 and associated asset additions and disposals to feed into V1 – Total Asset Movements.

6.296 Costs are required by Cost Type only.

6.297 The key term for this worksheet, defined in Annex A – Glossary, is:

- Dismantlement.

6.298 This worksheet requires the reporting of asset additions and disposals as a result of dismantlement activity.

CV33 – Substation Electricity

6.299 The purpose of this table is to collect information relating to the both the cost and volume of electricity consumed at substations.

6.300 Key terms for this worksheet, defined in Annex A – Glossary, are:

- Cost per unit £/MWh
- Substation Electricity
- Substation Electricity Costs
- Units Consumed.

6.301 DNOs should insert the costs and units consumed, in MWh, at DNOs substation in the appropriate cells.

6.302 The cost per MWh of electricity consumed at substations is derived by formula.

6.303 DNOs should insert the total Substation Electricity Costs split by cost type at the top of the table.

CV34 – Smart Meter Intervention DNO

6.304 This worksheet is designed to collect volumes and costs of work arising from the smart meter roll out across each DNO's network. This data will provide Ofgem with an understanding of DNOs' costs arising directly from the roll out and will allow some comparisons to be made between DNOs.

6.305 Provision of this data will also enable the relevant uncertainty mechanisms to operate correctly as this worksheet collects the data necessary for the operation of the Smart Meter Roll-out volume driver as set out in CRC 3E Smart Meter Roll-out Costs.

6.306 There are four categories of costs and volumes for reporting. These are:

- On-site/Physical activities completed in the current year
- Restatement of on-site/Physical Activities in the previous years that have been attributed to ONIs but are actually attributable to Smart metering
- Scheduling and call centre costs associated with Smart metering
- Registration costs.

6.307 The key terms for this worksheet, defined in Annex A – Glossary, are:

- Smart Meter Interventions – On-site/Physical Activities
- Smart Meter Interventions – On-site/Physical Activities – Trued Up
- Smart Meter Interventions – Extra scheduling & call centre
- Smart Meter Interventions – Smart Meter registration
- Smart Meter -Volume Calculations for Tapering Factor
- Smart Meter Interventions – Category A Intervention
- Smart Meter Interventions – Category B Intervention
- Smart Meter Interventions – Category C Intervention
- Smart Meter Interventions – Proactive Interventions

6.308 Costs should be split by Cost Type at the top of the worksheet. The total gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The purpose of check cell in Row 28 is to ensure the total gross costs in Row 23 reconciles with the total gross costs by category type in Row 150.

6.309 At the end of the table, volume calculations for the tapering factor are included.The calculations are automatic based on the input data.

6.310 There may be circumstances where the licensee is notified of an intervention required during the course of an installation or attempted installation of a Gas Smart Meter (referred to as Gas First). In such case the licensee should treat the intervention as a Proactive Intervention.

6.311 The following paragraphs describe the process for manual identification of Smart Meter Interventions associated with Smart Meter installations.

6.312 The DNO will maintain records of every defect reported that could lead to a Smart Meter Intervention. These will include defects reported through the dedicated Meter Operator Hotline, through other telephone lines, through the D0135 (Asset Condition Report) data flow or identified proactively.

6.313 These records will include (but are not limited to) the following data:

- reported defect code
- reported details of the defect

- date of reporting.

6.314 Upon resolution of the defect, the record is updated to include:

- confirmation of the nature of the defect
- actual defect code (which may be the same as or different to the reported defect code)
- details of work undertaken to resolve the defect
- date of resolution.

6.315 This data is used in the D0126 (Asset Condition Report Response/Clearance) data flow.

6.316 Where one or more activities took place in a regulatory year in respect of a given Smart Meter Installation, these constitute only one Smart Meter Intervention. If work is carried out in subsequent regulatory years as part of the same Smart Meter Installation, this is not counted, as the intervention will have been recorded in a previous regulatory year.

6.317 Smart Meter Interventions - Proactive Interventions carried out by the licensee should be included in the current reporting year. Extra care with reporting Proactive Interventions will be required to avoid double counting if a subsequent defect is reported via a supplier mechanism. One or more activities at the same Smart Meter Installation should be counted as one Smart Meter Intervention.

6.318 Proactive Interventions would need to be one or more of the activities defined in CRC 3E.19 to qualify. Where the licensee has carried out any Proactive Interventions the types of Proactive Intervention should be described within the commentary for table CV34.

6.319 Following the end of the Smart Meter Roll Out, a defect with DNO equipment identified at the time of installing or attempting to install a Smart Meter should be reported under ONIs.

6.320 The following processes can be used to identify reported Category A and B defects associated with Smart Meter installation:

Process A

6.321 An extract from the DNOs' records provides details of every resolved defect. This report includes all the information listed in the bullets above, alongside the relevant MPAN. In order to identify any necessary reconciliation across regulatory years, the report includes defects from during RIIO-ED1.

6.322 This report is cross-referenced against a report of Smart Meter MPANs which includes the Meter Installation date. This cross-referencing process identifies where a defect has been reported for a Smart Meter MPAN. All other defects (ie those that are not related to a Smart Meter MPAN) are not included in CV34.

6.323 Given the possible delay between defect rectification and meter installation, it will be necessary to reconcile activity across reporting years as a defect report may have been resolved in the preceding regulatory years to the subsequent Smart Meter Installation, and information about the Smart Meter Installation would not necessarily be available at the relevant regulatory reporting date. When the licensee reports an initial figure for each year, it should also review the previous years to identify any additional Smart Meter Interventions which took place in those years.

Process B (applies only to category B defect notifications)

6.324 Where a Meter Operator notifies a DNO of a category B defect via Asset Condition Report (D0135 dataflow), it is mandatory for them to confirm whether the defect driver is in relation to a smart/non smart meter visit. Where the defect notification is in response to a smart meter visit then the Meter Operator must identify this via the following means:

6.325 Item Reference J2062 (Indicator for when a site visit is to install a Smart Meter)

| F | Not a visit to install a SMETS Meter |
| T | Visit to install a SMETS Meter (exchange from Non-SMETS meter). |

6.326 Where a DNO has received positive indication that the defect is Smart Meter Installation driven, then this is sufficient to allow subsequent rectification works to count as a 'Smart Meter Intervention' in the year that the rectification works are undertaken, rather than in the year the Smart Meter is Installed, where the two are different. Extra care will be required to avoid double counting.

CV35 – Operational Training (CAI)

6.327 This worksheet collects Cost Type data on the Operational Training activity to feed the input to the C1 cost matrix. It also provides a split of these costs, alongside associated volumes, to provide an understanding of the activity for cost assessment purposes.

6.328 Operational Training is the provision of training to Operational Staff employed by the DNO or Related Party or Agency Staff to support the Direct Activities of the DNO. These staff are referred to as Craftspersons, Engineers, and Other Operational Employee.

6.329 Operational Training includes only the costs of training employee, Related Parties and Agency Staff. No contractor training costs should be reported in this activity. Where a DNO incurs costs assessing the capability of contractors, these costs should be included in De-Minimis (C18). Any costs associated with training contractors within DNO training facilities should also be reported in the same way.

6.330 The key terms for this worksheet, defined in Annex A – Glossary, are:

- Operational Training
- Craftsperson
- Engineer
- Other Operational Employee
- Operational Staff
- Non-Operational Staff
- Operational Refresher
- Operational Up-skilling
- New Recruits
- New Recruits – Craftsperson
- New Recruits – Engineer
- Learner Costs
- Leaver
- Leaver – Due to Retirement
- Leaver – Due to Reasons Other than Retirement
- Training Days
- Agency Staff.

6.331 These terms have the prefix "Operational Training", except Non-Operational Staff and Agency Staff as these terms are used in areas other than in Operational Training.

6.332 The check cells will ensure that the input for total costs by Cost Type and the costs by category (at gross cost level) reconcile.

6.333 The tables in the worksheet require costs to be split between the class of staff undertaking the training (Craftspersons, Engineers) and between the types of training provided (New Recruits, Up-skilling, Operational Refreshers), as well as reporting the costs of providing the Training Centre and courses for Operational Training.

6.334 Learner Costs should be reported as follows:

- *New Recruits (in year and previous years)* – this reports the costs of all operational New Recruits to the DNO or Related Party, often on a formal training programme for several years (eg apprenticeship). The associated volumes are the FTEs recognised as on New Recruits training programmes. No costs or volumes relating to contractor training should be included. The FTEs should be adapted to recognise that a new recruit may only have been employed for part-way through the year, for example 1 FTE starting work in October would be classed as 0.5 FTE; and a part time employee of 0.8 FTE starting work in October would be classed as 0.4 FTE. These costs and volumes should be reported separately between Craftspersons Engineers and Other Operational Employees. A unit cost is then calculated automatically by the table.

- *Operational Up-skilling* – this reports the costs of all Operational Staff, Related Party Staff and Agency Staff recognised as undertaking Operational Up-skilling training. The associated volumes are the number of Training Days spent on up-skilling training, both classroom and on-the-job. No costs or volumes relating to contractor training should be included. These costs and volumes should be reported separately between Craftspersons, Engineers and Other Operational Employee (the role reported against should be the role towards which the employee has been working). A unit cost is then calculated automatically by the table.

- *Operational Refreshers* – this reports the costs of all Operational Staff, Related Party Staff and Agency Staff attending Operational Refreshers. The associated volumes are the number of Training Days spent on refresher training. No costs or volumes relating to contractor training should be included. These costs and volumes should be reported separately between Craftspersons, Engineers and Other Operational Employee. A unit cost is then calculated automatically by the table.

6.335 Cost of Training Provision should be reported separately between the following, which are defined in Annex A – Glossary (under the prefix "Operational Training"):

- Trainer and Course Material Costs
- Training Centre and Training Admin Costs.

6.336 There are no volumes to be reported in this area.

6.337 Volumes are also to be reported for the following areas:

- *New Recruits in year* – this reports the New Recruits (on a FTE basis) appointed to the DNO **in the year**. This should not be pro-rated to adapt for date the new recruit joined the DNO. This should be reported separately between Craftspersons and Engineers.
- *Leavers* – this reports the number of Leavers in the year (on a FTE basis), reported separately between Leavers due to Retirement and Leavers for Reasons other than Retirement. These should not be pro-rated to adapt for date the leaver left the DNO. These are also reported separately by Craftspersons and Engineers.

CV36 – Network Innovation Allowance (NIA)

6.338 This worksheet is for reporting costs and volumes related to NIA funding. This worksheet is for ED1 costs only. Future proposed ED2 NIA costs should be reported on table CV36a.

6.339 NIA is a set allowance that the licensee can use to fund innovation projects each year on a use it or lose it basis.

6.340 Gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The Cost Type split should exclude indirect costs.

6.341 The costs reported here are for eligible expenditure only.

CV36a – Innovation (ED2)

6.342 The purpose of this worksheet is to provide a means for companies to outline costs associated with the proposed themes of any Network Innovation Allowance (NIA) funding that DNOs' request for RIIO-2.

6.343 The table "Network Innovation Allowance funding" should be populated with requested RIIO-2 NIA funding in line with the Sector Specific Methodology Decision (overview document). The table should be used to record costs for each proposed theme that companies wish to take forward through the RIIO-2 NIA. The narrative reference should include a reference to corresponding text within the Business Plan or associated annexes which explains and justifies the expenditure.

6.344 The ED2 Business Plan Guidance also details what information we seek within justifications for companies' NIA proposals.

6.345 Gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The Cost Type split should exclude indirect costs.

CV37 – Network Innovation Competition (NIC)

6.346 This worksheet is for reporting costs and volumes related to projects funded through the NIC and expenditure from the NIC project bank account. The NIC is an annual competition in RIIO-ED1 for funding larger-scale innovative projects that have the potential to deliver carbon or other environmental benefits to consumers.

6.347 Whilst this is an ED1 mechanism only, there may be costs continuing into ED2 for open projects not yet completed by the end of ED1.

6.348 Proposed cost relating to participation in the NIC replacement in ED2 are not required to be reported in the BPDT.

6.349 Gross costs should be split by Cost Type at the top of the worksheet (Rows 15 to 22). The Cost Type split should exclude indirect costs.

CV38 – Innovation Funding Incentive (IFI) & Low Carbon Network (LCN) Fund

6.350 This worksheet is for recording costs and volumes related to projects funded through the Innovation Funding Incentive (IFI), LCN Fund and expenditure from the LCN Fund project bank account.

6.351 The LCN Fund was an annual competition in DPCR5 for funding larger-scale innovative projects that had the potential to deliver carbon or other environmental benefits to consumers. The LCN Fund was replaced by the NIC for RIIO-ED1.

6.352 This worksheet records costs and volumes for projects that have previously been funded, undertaken and completed through DPCR5 and ED1. It is assumed that all such projects will be complete by the end of ED1 and thus no costs will be forecast in ED2.

6.353 The IFI was introduced in DPCR4 and its cost should only be entered for the DPCR5 years 2011-2015. Indirects should be recorded directly to IFI rather than to gross indirects and reallocated.

6.354 Eligible IFI expenditure and LCN Fund expenditure are to be reported by Cost Type together at the top of this worksheet (Rows 15 to 22). The Cost Type split should exclude indirect costs (except those related to IFI as in the paragraph above).

CV39 – Directly Remunerated Services (DRS)

6.355 Costs and revenue for each category of directly remunerated service, set out in CRC 5C (Directly Remunerated Services), are reported in this worksheet with the exception of "DRS1 Connection services" which should be reported in C2 – Connections.

6.356 The following DRS categories are to be reported in this worksheet and are defined in Annex A – Glossary:

- DRS2. Diversionary works under an obligation
- DRS3. Works required by an alteration of premises
- DRS4. Top-up, standby, and enhanced system security
- DRS5. Revenue protection services
- DRS6. Metering Services
- DRS7. Smart Meter Roll-out rechargeable services
- DRS8. Value Added Services
- DRS9. Miscellaneous.

6.357 Revenue for each DRS should be input in columns AD to AP. Direct costs for each category should be input by Cost Type. The total gross costs for each directly remunerated service are calculated from this information.

6.358 A memo table titled "Allocation of Indirects" has been included in rows 246 to 256 to capture indirect cost allocations for each individual DRS category. These indirect costs are then automatically added to the direct DRS costs to obtain total costs per DRS on the I3 - BPFM Inputs tab (rows 215 to 232). In each year, the total indirect costs input into this table should equal the total indirect allocations entered into the C1 - Cost Matrix tables (cells BP74:BP79).

7. Instructions for completing the volume worksheets

Overview

7.1   The purpose of the volume (V) worksheets is to collect total asset population volume data and the number of asset and disposals for each asset type. The information provided will be used in conjunction with the cost data to provide information regarding the unit cost for assets.

7.2   The volume worksheets show the total number of network assets for each year and the number of network assets added and removed from the network each year. There are auto-populated volume matrix sheets for each year which are populated from the activity worksheets.

V1 – Total Asset Movements

7.3   DNOs are required to input the closing balance of assets for the 2009-10 reporting year in column BS of this worksheet. The total asset movements worksheet is then auto populated by addition and disposal volumes from the activity areas.

7.4   This worksheet also includes a section for total population data of certain asset types for which disaggregation of additions and removals by investment driver is not required. These asset categories are contained within the "Other assets" table at the bottom of the spreadsheet.

7.5   The total count for the following assets within the other assets section of V2 must be populated and include:

- LV Fuses (GM) (TM)
- Switching Points with Remote Control/Automation Facility
- GM Indoor Substation
- GM Outdoor Substation
- GM Third Party Substation
- Total GM 33kV Substations
- Total GM 66kV Substations
- Total GM 132kV Substations
- Decommissioned 33kV - Pressurised

- Decommissioned 66kV - Pressurised
- Decommissioned 132kV – Pressurised.

7.6   The LV Fuses (PM) count is auto-populated from the PMT count in the top table.

7.7   This worksheet also includes a table for Shared Infrastructure for Telecoms, with the number of shared poles or towers to be input.

V2 - Cleansing

7.8   The cleansing worksheet is for the input of any volume cleansing required within the period. Volumes are to be entered as net values of additions and removals. Downward adjustments should be entered as a negative number.

V3 – Connections

7.9   This worksheet is for the input of Connections volume data to V1 – total asset movements.

7.10   This asset volume data to be reported in this worksheet relates to asset movements for all Connections activity whether the activity is within or outside of the Price Control. This is because it is not possible to split assets between these activities.

V4 – Other Asset Movements

7.11   This worksheet records asset addition and disposal volumes which are not the recorded in the other V tables - V2 Cleansing, V3 Connections or in the V5 volume matrices. Where volumes occur and they are not reported in these tables (directly or indirectly), DNOs should put the volumes in this worksheet. Examples of when this might occur includes:

- consequential asset replacement
- smart meter outside price control

V5 – Volume Matrix (2011 to 2028)

7.12 The volume matrix tables are auto populated from the additions of assets input in the activity worksheets. There is a volume matrix for each year from the reporting year 2010-11 to 2027-28.

AP1 - Age Profile

7.13 The key terms for this worksheet, which are defined in Annex A – Glossary are:

- Average Asset Lives
- Standard Deviation of Lives
- Strategic Spares.

7.14 DNOs must input the existing asset quantities (by asset category as specified in the worksheet and RIIO-ED2 BPDT Glossary) in the Regulatory Year in which they were added to the network.

7.15 DNOs must input the average asset lives for the assets and the standard deviation of asset lives in the asset replacement profile section. Average asset lives are defined as the expected average age at replacement as experienced by DNO for the asset population (this is the mean value of the asset age replacement profile of the particular asset).

7.16 Assets must only appear in this table once they are energised on the network. Assets which have been re-energised must appear in the year in which the asset was originally installed.

7.17 Assets under construction must not be included in the age profile.

7.18 Strategic spares must not be included in this table until installed and energised on the system.

7.19 Assets disconnected and de-energised during the year but which are available for re-commissioning (eg pressure assisted cables) must not be entered in the age profile.

7.20 Asset data must be disclosed by operating, and not by construction, voltage.

8. Instructions for completing RPEs and Ongoing efficiency worksheets

OERPE1 - RPEs and OE

8.1   The purpose of this worksheet is to provide an analysis of Real Price Effects (RPEs) and Ongoing Efficiency (OE) forecasts and assumptions. Rates and weightings are required for all years of RIIO-ED1 and RIIO-ED2 to enable a clear comparison between price controls.

Real Price Effects

8.2   This table enables licensees to provide their forecast of real price effects (additional to other building block forecasts). All cost forecasts provided elsewhere within the tables should be exclusive of RPEs.

8.3   For each input, fill in a relevant index on which forecasts are based. The index should represent your forecast of how costs will change over time relative to expected changes in the CPIH. CPIH data is contained in the Universal Data tab. Indices have a base year of 2020/21 – i.e. if you expect Controllable Opex to increase by 1% above CPIH from 2020/21 to 2021/22, enter 1.01 for the year 2021/22.

8.4   The index for materials should reflect the cost changes associated with both direct materials and those used by contractors. The inputs specified allow for a different index to be submitted for opex and capex, eg if materials used are different between the two then a different index can be used. If there is no difference then the same index can be used.

8.5   Fill in the weights of each input for the expenditure building blocks. Weights should sum to 100%, therefore 'other' should capture all inputs not split out. Different weights can be inserted for different years.

8.6   You should provide evidence within the commentary/business plan of how the final indices were deduced and why you expect the weight of each input category to vary over time (if applicable).

8.7   The first two tables for RPEs give an indication of the £m impact of the RPE indices, broken down by expenditure and input categories. These tables are for information purposes only, and it is important to note that they may not accurately reflect the impact of RPE indices. This is because the £m tables will calculate the impact of RPEs with each DNOs' individual cost structure. Additionally, the £m impact of RPEs may change depending on the indexation process during the course of RIIO-ED2.

Ongoing efficiency

8.8   This table also requests DNOs to provide their ongoing efficiency forecasts. Ongoing efficiencies are productivity improvements expected by even the most efficient DNO. This should represent a DNO's forecast of reductions in input volumes that can be achieved whilst delivering the same outputs.

8.9   Fill in your ongoing efficiency assumption as a % of Totex costs on line 147.

8.10   In the table disaggregating the ongoing efficiency assumption by expenditure areas, input how the totex assumption maps out across these areas. This table aims to provide transparency for us to better understand how the overall assumption is built up across expenditure categories.

8.11   You should provide evidence within the commentary/business plan of how the final ongoing efficiency assumption was deduced.

8.12   For the avoidance of doubt, all costs forecast elsewhere within the tables should exclude ongoing efficiency assumptions.

8.13   The £m summary table gives an indication of the impact of the totex ongoing efficiency assumption on each expenditure areas. This table is for information only, and it is important to note that they may not accurately reflect the impact of the ongoing efficiency assumption.

9. Instructions for completing memo worksheets

Overview

9.1   The purpose of the instructions and guidance in this chapter is to provide a framework for the collection and provision of accurate and consistent cost and other data from the DNOs.

9.2   This chapter deals with additional cost and volume data useful to Ofgem, containing memorandum, disaggregated and new data to allow us a better understanding of the costs reported.

9.3   All costs are to be entered on a Cash Basis (see Glossary) and exclusive of atypical items except where specifically instructed to report data. Cash means exclusive of all provisions and all accruals and prepayments that are not incurred as part of the ordinary level of business.

M1 – Flood Mitigation

9.4   This worksheet collects volumes and costs and other key information relating to DNOs work on flood risk mitigation. Its purpose is threefold – to ensure compliance with ETR 138: Resilience to Flooding of Grid and Primary Substations (first issued in 2009 and subsequently re-issued), to provide relevant data to share with DECC and other bodies, and to provide a cross check with the aggregated costs reported in CV16 – Flood Mitigation.

9.5   DNOs are required to provide a site-by-site breakdown for each site noting where a flood risk that has been mitigated, where flood mitigation is planned or where further detailed study has been undertaken to determine the extent of the risk.

9.6   DNOs are required to list the substations within their defence plans (with primary/secondary voltages) in columns C to E, followed by details of the numbers of customers served, including the number and type of critical customers in columns F to H.

9.7   Column I should be used to enter the ETR138 flooding risk probability pertinent to each site: 1/100 for the 1/100 risk contour, 1/200 for the 1/200 risk contour or 1/1000 for the 1/1000 risk contour.

9.8   Columns J to M are used to record DNOs progress with the assessments they are required to make under ETR138. There are four types of assessment that form part of a consistent Data Collection process developed with EA, Natural Resources Wales and SEPA. Once these assessments are complete the appropriate options for protecting the site can then be determined. The assessments are:

- "Assessment against EA/SEPA" (Col J): Identify all substations in the flood plain for fluvial, pluvial and coastal flooding using best available current data from the EA, Natural Resources Wales and SEPA or specialist flood risk/hydrological consultants.
- "Detailed Flood Risk Assessment/feasibility study" (Col K): Establish the flood risk for each substation including the flood depth, condition of existing defences, historical flooding data and other factors such as climate change, sea level rises etc.
- "Impact Assessment of Predicted Flood" (Col L): For each substation that is at risk of flooding, identify the flood impact for that particular site.
- "Societal Impact Assessment" (Col M): Complete For each substation that is at risk of flooding, identify the societal impact relating to the number of customers and critical customers served by the substation and whether the substation is a critical infrastructure site.
- Column O is used to indicate whether there the defence of the substation is subject to a wider defence scheme sponsored by an appropriate public body, local authority or whether any other action is planned by another body.

9.9   Once an appropriate solution has been chosen for the scheme, based on the levels of flood risk and a cost/benefit assessment, Columns P and Q are used to record the date of completion of the detailed scheme design and of the schemes implementation. Once complete, DNOs should enter completed against the substation concerned.

9.10   In column R "Nature of flooding risk", DNOs should specify the type of flood risk that each scheme is primarily designed to mitigate, for example fluvial/coastal or surface water flood risk.

9.11   In Column S, DNOs are required the level of protection that the defences have been designed to provide for the substation, which should mitigate the flood risk entered in

Column G. The remainder of the columns in the table to the right of and including Column R are used to record the historical and proposed costs of the schemes chosen to defend each substation. The total costs for each year for all schemes should reconcile to the costs of the flood mitigation schemes (exc. Non-site specific and surveys costs) recorded in CV16 – Flood Mitigation. A check cell in Row 191 of CV16 tests this reconciliation.

M2 – ED2 WSC

9.12   The data in this worksheet will be treated as being indicative of a DNO's best view of the number and expected profile of Worst Served Customers (as defined for the ED2 Worst Served Customer mechanism) over the course of the price control. Ofgem will treat these values as an estimate, and do not expect DNOs to be held to the values within the worksheet.

9.13   The purpose of this worksheet is to assess how DNOs expect the volume of Worst Served Customers to change over the course of ED2, as they carry out work on the schemes commissioned under the Worst Served Customers mechanism. .

9.14   DNOs should populate the 'Worst Served Customers in year' table, based on the expected total number of customers meeting the definition of a Worst Served Customer (as defined for the ED2 Worst Served Customer mechanism). This table should be used as a guide to represent the impact of the schemes that are commissioned under the Worst Served Customers mechanism in the ED2 period, as well as the potential impact of new customers being identified over the course of the price control. For each year, DNOs are required to give an estimate of the number of worst served customers that will be addressed through the schemes the DNO will undertake, as well as any new customers that may be identified, or fall within or outside of the WSC definition, throughout the year. The formulae in rows 12 and 16 auto populate to give the end position for each year, and the starting position for the subsequent year.

9.15   Columns C and D should be populated with a DNO's latest values as observed on their network. Columns E to J should be populated based on estimates or the expected volume of Worst Served Customers. DNOs should provide the supporting evidence and justification for the funding to address Worst Served Customers within their Business Plan.

M3 – ED1 WSC Schemes

9.16   The purpose of this worksheet is to assess whether:

- historic performance data demonstrates that the schemes qualify for the WSC mechanism
- the post-project-completion performance data shows that the required performance improvement has been achieved.

9.17   This worksheet collects data on the number of Worst Served Customers (as defined for the ED1 Worst Served Customer mechanism) for Regulatory Years in ED1 and on the activity volumes and expenditure incurred due to schemes commissioned under the Worst Served Customers mechanism.

9.18   A number of tables in this worksheet populate automatically from the reference data tables ('Projects with expenditure in RIIO-ED1', and 'Project details') provided on the schemes undertaken. The following tables automatically populate:

- Customer information
- Performance assessment
- Calculated number of customers interrupted in reference period
- Calculated number of customers interrupted post scheme completion.

9.19   Certain tables in this worksheet need to be populated by the DNO, these are:

- Worst Served Customers in year
- Unplanned number of customers interrupted
- Projects with expenditure in RIIO-ED1
- Project details
- Number of HV+ incidents within the reference period
- Number of HV+ incidents post scheme completion
- Costs (£k)
- Performance Improvement Target.

9.20   In the "Worst Served Customers in year" table, the DNO is to populate the total number of customers meeting the definition of Worst Served Customer.

9.21   In the "Unplanned number of customers interrupted" table, the DNO is to populate the number of customers who have experienced unplanned interruptions over a three year period. The three year reference period is automatically calculated from the reporting year being populated. It includes the current year being reported and the previous two reporting years. The reporting criteria for this table is by the minimum number of higher voltage interruptions in any one year of the three years starting at zero and rising in single increments to five or more, and the total number of higher voltage interruptions over the three year period (starting at 10 interruptions and rising to 20 or more). The purpose of this table is to inform Ofgem of the number of customers satisfying the definition of Worst Served Customers in a DNOs area and the number of customers marginally not satisfying the criteria to inform the review of the definition at future Price Controls.

9.22   In the "Projects with expenditure in ED1" table, the DNO is to populate details of the schemes carried out. The data entered drives the population of the customer information, performance assessment and costs per worst served customer benefitting from the scheme tables.

- Start of reference period determines the data to be used for the three-year reference period that defines the starting performance for the performance assessment. This starting date must lead to at least three full years of data prior to the year in which the project was started. The starting date refers to the first year of the three year reference period.
- Year Project Completed determines the data to be used for the three-year reference period that defines the post-project-completion performance for the performance assessment. This data represents the year in which the project has been technically completed. The data for the performance assessment will be the three full years that follow the year in which the project was completed. This should be left blank if a project is not yet technically complete.
- Scheme id (Project number) is the primary link between the project data and the substation data in the "Project details" table.

9.23   In the "Project details" table, the DNO is to populate substation based information, such as the number of worst served customers on the substation, number of customers expected to benefit from the scheme and other specified reference data. The data provided links the incident information to the "Performance assessment" table.

9.24   In the "Number of HV+ incidents within the reference period" table, the DNO is to populate the number of incidents that defined the customers as worst served. This is the number of higher voltage incidents occurring at each substation for each of the years within the reference period for the specific scheme. The years populated must relate to the relevant years derived from the Start of reference period for the scheme.

9.25   In the "Number of HV+ incidents post scheme completion" table, the DNO should populate the data about incidents affecting the substations/customers after the work has been completed. This data will be added to each year until data is available for three full years after the year in which the project was technically completed.

9.26   In the "Costs (£k)" table, the DNO should insert the expenditure on each project in the Regulatory Year.

9.27   In the Performance Improvement Target from CRC 3H, the DNO should insert the performance improvement requirement for ED1 Worst Served Customer schemes that was specified by the DNO and supported by the DNOs stakeholders. This value is recorded within Licence Condition CRC 3H.

9.28   The auto-populated "Customer information" table calculates the total number of worst served customers and the total number of worst served customers benefitting from the scheme for each scheme. The calculation uses the scheme id to pull through the relevant information from the substation data in the "Project details" table. These values are required for the assessment of costs per customer.

9.29   The auto-populated "Calculated number of customers interrupted in reference period" table calculates, for each substation, the product of the number of incidents in the reference period and the number of worst served customers expected to benefit from the scheme. This uses the worst served customers expected to benefit because it is those customers who are being targeted with an improvement and which form part of the performance assessment.

9.30   The auto-populated "Calculated number of customers interrupted post scheme completion" table calculates, for each substation, the product of the number of incidents post scheme completion and the number of worst served customers expected to benefit from the scheme. This uses the worst served customers expected to benefit because it is those customers who are being targeted with an improvement and which form part of the performance assessment.

9.31 The auto-populated "Performance assessment" table calculates the total number of customers interrupted for each scheme before and after the technical completion of the scheme. It is uses the Start of reference period and Year project completed dates to pull through the relevant data from the Calculated number of customers interrupted in reference period and Calculated number of customers interrupted post scheme completion tables. It uses the before and after three year totals to calculate the percentage improvement and then determines whether the change in performance meets the required performance improvement criteria. Note that in DPCR5 all DNOs had the same improvement criteria of 25%, but for RIIO-ED1 DNOs were allowed to specify their own values provided they were supported by stakeholder engagement.

9.32 The key terms for this worksheet, defined in Annex A – Glossary, are:

- WSC - Circuit Reference Number
- WSC - Feeder Name/Ref
- WSC - Number of Customers expected to Benefit
- WSC - Number of HV+ incidents post scheme completion
- WSC - Number of Worst Served Customers on feeder
- WSC - Number of Worst Served Customers on Substation
- WSC - Primary Name
- WSC - Schemes
- WSC - Scheme id (project number)
- WSC - Secondary Substation (name)/Customer Details
- WSC - Secondary Substation Ref/customer ref
- WSC - Start of reference period
- WSC - Type of scheme (brief description of work done)
- Worst Served Customers
- WSC - Year Project completed
- WSC - Number of HV+ Incidents within the reference period
- WSC - Performance Improvement Target from CRC 3H
- WSC - Number of higher voltage Customers Interrupted in the WSC reference period
- WSC - Number of higher voltage Customers Interrupted post scheme completion
- WSC - % improvement scheme (post scheme actual vs reference period)
- WSC - Improvement qualifies for revenue recovery
- WSC - Calculated number of customers interrupted in reference period
- WSC - Calculated number of customers interrupted post scheme completion.

9.33 Where no activity has been undertaken as part of this mechanism, then the DNO should leave these cells blank.

M4 – Vulnerability Strategy Delivery

9.34 We have established a set of principles and baseline expectations which stipulate the minimum level of service expected from DNOs in supporting consumers in vulnerable situations in RIIO-ED2. DNOs should deliver this level of service, and thereby meet the baseline expectations, as part of their BAU operations. We will require DNOs to develop and submit vulnerability strategies as part of their RIIO-ED2 Business Plans and in these strategies, DNOs will need to set out the activities and deliverables that will contribute to supporting consumers in vulnerable situations, as well as how these activities and deliverables meet the baseline expectations.

9.35 We expect all costs that DNOs are requesting in RIIO-ED2 for their vulnerability strategies to be captured in the relevant C&V BPDT tables. However, where costs contribute to the delivery of a DNO's vulnerability strategy, we also expect these to be recorded in the Vulnerability Strategy Delivery Memo Table.

9.36 In the memo table, DNOs should provide information on any costs associated with the vulnerability strategies that have a value greater than £0.1m. These costs could be specific to one regulatory year in RIIO-ED2 or spread across a number of years.

9.37 DNOs should record the deliverable or activity name in Column A. In Column C, DNOs should provide a brief description of how the activity contributes to the delivery of a DNO's vulnerability strategy.

M5 – Major Connections Strategy Delivery

9.38 We have established a set of principles and baseline expectations which stipulate the minimum level of service expected from DNOs in their delivery of services to major connection customers in RIIO-ED2. DNOs should deliver this level of service, and thereby meet the baseline expectations, as part of their BAU operations. In the major connections strategies, DNOs will need to set out the activities and deliverables that will contribute to meeting connection customers' needs in RIIO-ED2, as well as how these activities and deliverables meet the baseline expecations.

9.39 We expect all costs that DNOs are requesting in RIIO-ED2 for the provision of connections services to be captured in the relevant C&V BPDT tables. However, where costs contribute to the delivery of a DNO's major connections strategy, we also expect these to be recorded in the Connections Strategy Delivery Memo Table.

9.40 In the memo table, DNOs should provide information on both inside price control (IPC) and outside price control (OPC) costs associated with the major connections strategies, where these costs have a value greater than £0.1m. These costs could be specific to one regulatory year in RIIO-ED2 or spread across a number of years.

9.41 DNOs should record these costs either as a cost type (e.g. Labour, IT) or as a deliverable/activity (e.g. specific project) costs, whichever is the most appropriate, in column A. These costs should be reported as total net costs, after customer contributions.

9.42 In column C, DNOs should provide a brief description of how the costs/activity contributes to the delivery of a DNO's major connection strategy.

M6 – Metal Theft

9.43 Given the rise in metal theft in some areas, the purpose of this worksheet is to collect costs and volumes associated with the prevention and repair of damage caused by metal theft and vandalism. This helps with visibility of all metal theft costs.

9.44 It is split into three tables:

- metal theft remedial works
- risk mitigation/other
- impact.

9.45 The first, "Metal Theft Remedial works", records the costs and volumes related to the theft or vandalism to underground cables, overhead lines, distribution substations and other substations.

9.46 The second, "Risk Mitigation/other", records the costs and volumes associated with mitigating against metal theft and vandalism. Costs and volumes are expected to be reported for inspections and anti-theft security enhancements. Only volumes should be reported for the five other areas (substation site security, task force liaison utilities and

emergency services, corporate communications/community awareness, site security and theft of stock).

9.47   The third, "Impact", records the costs and volumes of guaranteed standards/ex-gratia payments as a result of metal theft or vandalism.

M7 – Protection Summary

9.48   The purpose of this worksheet is to provide Ofgem with an overview of all protection costs in order to review any variances in costs across different activity areas for the same protection type.

9.49   This sheet is auto populated from selected cells in the following worksheets:

- CV7 – Asset Replacement
- CV12 – Black Start
- CV28 – Occurrences Not Incentivised
- CV31 – Repair and Maintenance.

M8 – Link Box Summary

9.50   The purpose of this worksheet is to provide a summary of Link Box costs and activities. It provides a consolidated view of cost and volume data in relation to the following activities where undertaken on LV UGB assets:- Asset Replacement, Fire Blankets - Link Box related (as reported under Legal and Safety reasons), Inspections and Repair & Maintenance. It also includes details of Street Works associated with these activities and the number of Catastophic Failures of LV UGB assets.

9.51   There are six specified activities reported under three tables recorded within this worksheet. In addition "other" rows have been added as placeholders to allow for revised solutions following relevant DNO/Ofgem assessments of the consolidated data.

9.52   All information in this tab should be also reported under the designated cost areas.

Table 1: Asset Replacement of link boxes

9.53   This records the costs of replacing poor condition link boxes which have a high risk of failure.

9.54 For the volume unit of measure this requires the reporting of asset additions and disposals.

Table 2: Other mitigation and associated activities

9.55 There are four specified categories of reporting as follows:

- **Legal & Safety** - Installation of new link box fire blankets. The volume unit of measure is the count of sites which have had new blankets installed within the reporting period.
- **Inspection** - The volume unit of measure is based on number of link boxes inspected, irrespective of the number of times that the same asset has been inspected within the regulatory period.
- **Repair & Maintenance** - an activity and associated costs to carry out any remedial works and resolve any issues identified through inspections in order to restore the link box to an acceptable operable standard. This will include:
  1.1..8. the appropriate tightening of connections
  1.1..9. the removal of contamination, eg water, sediment, other deposits/residue etc
  1.1..10. the replacement of existing blast blankets
  1.1..11. repair or replace phase barriers as appropriate.

9.56 The volume unit of measure is based on number of link boxes repaired or maintained, irrespective of the number of different times that the same asset has been repaired or maintained within the regulatory period.

- **Street Works** - payments made under the new roads and Street Works act and traffic management act incurred as a result of the following activities where undertaken on LV UGB assets:- Asset Replacement, Fire Blankets - Link Box related (as reported under Legal and Safety reasons), Inspections and Repair & Maintenance. The road charges costs are not directly linked to the related table. DNOs should calculate the apportioned costs and volumes related to link boxes and provide justification in the commentary.

M9a – Traditional Street Works (ex ante)

9.57 The purpose of this table is to separately identify the costs and volumes associated with Traditional Street Works (see definition).

9.58 Gross costs and volumes should be reported for the following categories, which are defined in Annex A – Glossary (under the prefix "Street Works"):

- Notices (volumes only, no costs).
- Notice Penalties
- Overstay Fines
- Sample Inspections (costs only, no volumes).
- Investigatory Inspection and Penalties (costs only, no volumes).
- Congestion Charges & Clean Air Zone Charges (costs only, no volumes).
- Street Works Admin (costs only, no volumes).
- Suspensions and Closures (costs only, no volumes).

9.59 The Overstay Fines reported here must refer to only those incurred for works reported in this table (M9a).

9.60 DNOs are also expected to report the income for the following, also defined in RIIO-ED2 BPDT Glossary (under the prefix "Street Works"):

- Income from Connectee
- Penalties Recovered from Contractor.

9.61 All income and penalties recovered should be entered as a negative number.

9.62 Related Party costs should be reported as if incurred by the DNO.

M9b – Permit & Lane Rental (ex ante)

9.63 The purpose of this table is to separately identify the costs and volumes associated with Existing Permit Schemes and Existing Lane Rental Schemes.

9.64 Gross costs and volumes should be reported for the following categories, which are defined in RIIO-ED2 BPDT Glossary (under the prefix "Street Works"):

- Permits
- Non-Chargeable Permits (volumes only)
- Issued Permits (costs and volumes)
- Permit Variations (costs and volumes)
- Permit Penalties

- Permit Condition Costs (costs and volumes)
- Lane Rentals
- Overstay Fines
- Permit and Lane Rental Set Up Costs (costs only, no volumes)
- Permit and Lane Rental Administration Costs (costs only, no volumes).

9.65 DNOs are also expected to report the income for the following, split between Permits and Lane Rental, also defined in RIIO-ED2 BPDT Glossary (under the prefix "Street Works"):

- Income from Connectee
- Penalties from Contractor

9.66 The Overstay Fines reported here must refer to only those incurred for works reported in this table (M9b).

9.67 All income and penalties should be entered as a negative number.

9.68 Related Party costs should be reported as if incurred by the DNO.

9.69 These costs, volumes and income are to be reported in terms of whether the activity is inside or outside the Price Control, where costs outside the Price Control refer to Connections that are soley customer funded.

M13 – Uncertainty Mechanism Information

9.70 The purpose of this table is to provide a summary of information on expenditure on areas that are subject to an uncertainty mechanism. This information is not directly used in the BPFM but may be used to inform revisions to relevant BPFM variable values.

9.71 DNOs should populate this table with only the costs associated with the uncertainty mechanism for that cost area, rather than the total costs relating to that cost area. Costs included in this table as a reopener should be excluded from the associated cost table and C1 worksheets.

M14 - Drivers

9.72   The purpose of this worksheet is for DNOs to provide cost driver information, which may be used for future and within period benchmarking.

9.73   This worksheet collects data in the following tables:

- Exogenous Totex Drivers
- Quality of Service (unplanned and unweighted)
- Network Operating Characteristics
- Installed Network Assets.

9.74   DNOs are required to input data in the first two tables only for:

- Number of customers
- Units distributed
- Network-wide peak demand
- Unplanned customer interruptions (numbers will be a year in arrears as the approved numbers from Ofgem will not be available by 31 July each year)
- Unplanned customer minutes lost (numbers will be a year in arrears as the approved numbers from Ofgem will not be available by 31 July each year).

9.75   The other drivers are auto populated and include:

- Spans cut
- Spans inspected
- Total network length
- Overhead LV and HV network
- Unplanned Incidents on Power System Voltage Equipment - Total Damage Incidents
- ONIs total
- MEAV
- MEAV - excluding RLM, Protection, Civil Works & Electricity Energy Storage

9.76   Key terms for this worksheet, defined in Annex A – Glossary, are:

- Customers Interrupted (CI)
- Customer Minutes Lost (CML)

- Customer[3]
- GWh
- MVA
- MEAV
- Span.

9.77 The values in each reporting year should be actuals up to and including that reporting year, for subsequent years a growth factor should be applied.

M15 - MEAV (Modern Equivalent Asset Value)

9.78 This worksheet automatically calculates MEAV for a DNO, based on data provided from the V1 – Total Asset Movements worksheet.

M16 – Blank

M17 – Blank

M18 – Full Time Equivalents

9.79 The purpose of this worksheet is for DNOs to provide an estimated number of Full Time Equivalents (FTEs) at 31st March in each occupational group (SOC code) in the table.

9.80 Please provide total FTE numbers for the entire DNO. Figures should include the DNO's own FTEs only, in line what is reported in the Labour cost type, DNO Own. This could therefore include temporary/agency staff whose costs are reported as such.

9.81 Where you provide figures for 3 or 4-digit SOC codes, these should be a subset of the 2-digit SOC code above it. Where clarification of the SOC definitions is required, the ONS SOC[4] manual should be referred to.

9.82 DNOs should populate the total number of FTEs.

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[3] These values should be provided on the same basis as that used for the IIS returns.
[4] https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc

M19 – DSO

9.83   The purpose of this table is to provide a summary of information on DSO expenditure that is reported in relevant tables within the BPDT pack, and to reconcile specific costs between the DSO strategies and the BPDT.

9.84   The DNOs are required to input the costs of ED1 Innovation in cells H45:K45. Other net costs in the main M19 table are automatically populated through linking to other worksheets in the BPDT pack.

9.85   DNOs are also required to fill out the reconciliation table and memo items below the main M19 table, in order to set out where the costs associated with specific DSO proposals are located elsewhere within the BPDT pack and to provide further clarity.[5] Where a DSO proposal involves costs across more than one BDPT table, these should be reported as separate lines within the reconciliation table (e.g. £Xm in CV1 - Primary Reinforcement and £Ym in CV2 - Secondary Reinforcement). This will help us to understand the incremental costs of meeting or exceeding baseline expectations and demonstrate the cost of these measures over RIIO ED1 and ED2. For the memo items on DSO workforce please use the BPDT commentary to provide clarity on what staff have been included/excluded in rows 81 and 82. For row 85 please include all costs associated with LV monitoring and use the BPDT commentary either to outline what is included or to point to the relevant explanatory text within the business plan and/or any supporting documentation.

M20 – LCTs (low carbon technologies)

9.86   This is a Memo worksheet. All costs and volumes forecast here should also be included in CV1 and CV2 as appropriate.

9.87   This worksheet captures the number and size of Low Carbon Technologies (LCTs) connected in the Regulatory Year. The worksheet also captures costs and volumes

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[5] The areas of relevant expenditure are LV monitoring, DSO workforce requirements (including FTEs) and conflict mitigation proposals.

associated with schemes implemented and the capacity released (peak) on the primary and secondary network.

9.88 The term Low Carbon Technologies is defined in the Glossary.

Low Carbon Technologies

9.89 DNOs must report on the following LCTs:

- Heat pumps at existing connections that do not lead to a new or modified connection
- Electric vehicle (EV) chargers, both slow and fast charging, at existing connections that do not lead to a new or modified connection
- Photovoltaics (PV) connected under Engineering Recommendation G98
- Other renewable distributed generation (DG), excluding PV, connected under Engineering Recommendation G98
- Renewable DG not connected under Engineering Recommendation G98.

9.90 For the recording of renewable DG not connected under Engineering Recommendation G98, we would expect:

- the DG to be "still energised in the reporting year"; or
- the DG was "subject to use of system charges in the reporting year"

9.91 For the recording of renewable DG not connected under Engineering Recommendation G98, where the DNO is able to split the number of those that are subject to 'use of system charges in the reporting year' against those that are not, it should do so within its BPDT commentary.

9.92 For recording information on Electric Vehicles DNOs must input the volumes using the following logic:

- EV Slow charging: means EV up to 16A/3.7kW draw-down rate; and
- EV Fast charging: means anything above 16A/3.7kW draw-down rate.

Volumes and Size of LCTs Installed

9.93 DNOs must input the number of LCTs added to the network in each Regulatory Year by technology type. DNOs should disaggregate the LCT volumes across the Primary

(EHV+) and Secondary (HV and LV) voltages. The volumes forecast in this table should be for new technologies connected in that year, and not a cumulative total.

9.94 DNOs must report the 'maximum export allowed' (in MW) of the LCTs added to the network in each Regulatory Year by technology type. This should be disaggregated between those added at the Primary (EHV+) and Secondary (LV-HV) networks.

Schemes Implemented and Capacity Released

9.95 As well as the number and size of LCTs installed, DNOs must also provide detail of the volume and cost of the interventions forecast to be required to accommodate these low carbon technologies.

9.96 Disaggregated by year, on both the primary and secondary network, DNOs must populate the volume and cost of schemes implemented and of capacity released (peak) for the solution types listed below:

- Active Network Management - Dynamic Network Reconfiguration
- Flexible AC Transmission Systems
- D/GSR
- Embedded DC Networks
- Enhanced Automatic voltage Control (EAVC)
- Fault Current Limiters
- Generator Providing Network Support
- Intelligent control devices (EVs)
- New Types Of Circuit Infrastructure
- Meshing (permanent)
- Meshing (temporary)
- Real-Time Thermal Rating
- Switched Capacitors
- Conventional reinforcement
- Electrical Energy Storage
- Smart Enabler

9.97 Cells have also been included to enter the description of any additional DNO disagregated solution types that have not been specified in the list above.

9.98 The capacity released should be the in-year net impact of the proposed solution on the capacity of the circuit on which a solution is to be enacted. The cost of capacity

released will be autopopulated from the number of scheme implemented cost table above.

9.99 If you are forecasting unbundling of shared services driven by installation of LCTs, please include this as an extra solution type in a separate line on M20. Please complete the table as per the guidance here for other solutions.

9.100 In the accompanying commentary please provide justification for this work, including as a minimum: how the volume and cost have been calculated, and what the driver for the investment is. In general, if you are forecasting solutions that do not fit into the existing groupings in M20, please include it as an additional solution in M20.

9.101 The costs should be populated with Real Price Effects (RPEs) and Ongoing Efficiency assumptions removed, as for other costs in the data tables.

M21 – Bespoke Activities

9.102 Bespoke Activities only apply to one network company. DNOs have the opportunity to propose bespoke activities and these will be assessed as part of the review of company business plans.

9.103 The purpose of this worksheet is to capture the costs and volumes for any proposed bespoke activities and associated Consumer Value Proposition (CVP). Costs and volumes associated with any proposed bespoke activities should not be included in the baseline costs and volumes within the any other worksheets in the BPDTs.

9.104 This table will enable Ofgem to identify the costs and volumes for any proposed bespoke activities and associated CVP, as well as reference to any corresponding supporting evidence such as supporting narratives, commentary, EJPs, or CBAs.

9.105 This table should not be used to capture incremental investment, instead these costs should be captured in M26 – Incremental Costs.

General Instructions

9.106 This worksheet is for recording proposed bespoke activities.

9.107 If a proposed bespoke activity directly corresponds with an uncertain activity, then use the DNO Notes field in Column U to highlight this interaction.

Bespoke Activities Table

9.108 **Description of Bespoke Activity:** Enter a description of the bespoke activity. This description should match the description provided for the corresponding item within the Outputs, UMs and CVP snapshot table that accompanies the RIIO-ED2 Business Plan Guidance document.

9.109 **Costs:** Enter the costs associated with the bespoke activity for each year of RIIO-ED2.

9.110 **Volumes:** If applicable, enter the volumes associated with the bespoke activity for each year of RIIO-ED2. Enter the unit of measure for the volume in the Unit field provided (Column I).

9.111 **Baseline/Cost Category:** Specify whether the bespoke activity relates to:

9.112 **Baseline/Cost Category:** Specify whether the bespoke activity relates to:

- Load Related
- Non-Load Capex (excluding non-op capex)
- Non-op Capex
- HVP
- Network Operating Costs
- Closely Associated Indirects
- Business Support Costs
- Other Costs within Price Control

9.113 If the output relates to multiple categories, list each individual bespoke activity separately on a separate table row.

9.114 **BPFM Cost Category:** Specify whether the bespoke activity relates to:

- Load related capex
- Non-load related capex - asset replacement
- Non-load related capex - other
- Faults
- Tree cutting
- 100% 'revenue pool' expenditure
- Controllable opex

9.115 **Baseline Activity:** Identify which specific activity, within the specified Baseline Category, the bespoke activity relates to. If it relates to multiple activities, list each individual bespoke activity separately on a separate table row. If the bespoke activity does not relate to a baseline activity, enter "N/A" rather than leaving the cell empty.

9.116 **Location of Baseline Activity in the BPDTs:** Identify the specific data entries within the baseline BPDT tables that the bespoke activity would relate to. Specify the worksheet name(s), table name(s) and activity name(s).

9.117 **Reference to Supporting Narrative(s), Commentary, EJP, and/or CBA:** Provide a list of all locations within the business plan and/or any supporting documentation that support the bespoke activity, including the corresponding item within the Outputs, UMs and CVP snapshot table that accompanies the RIIO-2 Business Plan Guidance document. This will enable Ofgem to associate each bespoke activity across all documents that reference it.

M23 – Environmental Action Plan

M23 – Environmental Action Plan

9.118 The purpose of this table is to collect information in relation to licensee's environmental performance using a range of measures that cover the environmental impact areas highlighted in the December 2020 ED-2 SSMD. The collected data will be used to inform a view on the licensee's historical performance in RIIO-1 (where data is available) and to record the licensee's potential performance in RIIO-2, with and without the initiatives set out in the licensee's Environmental Action Plan.

9.119 The table has been designed to be common to all licensees. In table 1 the licensee should fill in the boxes shaded in yellow for each of the following measures:

- Total - scope 1 emissions
- Total – losses emissions
- Total - scope 2 emissions (excluding losses)
- Total - scope 3 emissions
- Total emissions - buildings energy use
- Total number of staff
- Total building floor space

- Total emissions – operational transport
- Total operational kilometres travelled
- Network length
- Licence area
- Total emissions – business transport
- Total business kilometres travelled
- Total SF6 leakage
- Total leakage – other GWP IIGs
- Total SF6 emissions
- Total emissions – other GWP IIGs
- Total SF6 installed
- Total installed – other GWP IIGs
- Total emissions from substation energy use
- Total substation energy use
- Number of substations metered
- Number of substations unmetered
- Losses at substations
- Volume of embodied CO2
- % breakdown – manufacture
- % breakdown – transport
- % breakdown – construction
- % breakdown – end of life
- Total volume of each pollution
- Total oil leakage
- % oil leakage breakdown by source
- Persistent Organic Pollutant asset changes
- Total waste volume
- Total waste weight
- % waste source – new projects
- % waste source – business operations

- Breakdown of waste management
- % of existing sites monitored for biodiversity value
- Area of existing sites monitored for biodiversity value
- Defra Biodiversity Metric 2.0* or equivalent of biodiversity value for each monitored site/habitat

• Total biodiversity net gain delivered on new developments (using DBM2 or equivalent)

9.120 Licensees are required to submit data where it is available. If the requested data is not available, and it is accepted that historical data may not be available please explain why this is the case in the 'Notes' column.

9.121 It is accepted that Embodied Carbon is a developing area of forecasting. Licensees should make best endeavours to identify embodied carbon within their networks, and adopt a methodology to calculate the carbon of new projects that is consistent with best practice. For example, the Environment Agency have a carbon planning tool available for construction projects. Please record in Notes column the methodology adopted..

9.122 In table 2 the licensee should fill in the boxes shaded in yellow for its projected values of each measures (as above) in RIIO-ED2. We expect the licensee to give an estimate of the measure, for both with and without implementing the initiatives in its Environmental Action Plan. The licensee is to input in column L the unique identifier codes, assigned to initiatives in Table 3, if implementing those initiatives are expected to influence the environmental performance measure over RIIO-ED2.

9.123 In table 3 the licensee should provide details for the initiatives in their Environmental Action Plan. This is to include:

- A unique identifier code for each initiative.
- A description of the initiative, including an explanation of the proposed metric to measure delivery or implementation of the initiative and the expected completion date.
- A link or reference to the Cost Benefit Analysis for the initiative.
- A summary of any project dependencies.
- The expected value of the metric at the start of RIIO-ED2 before the initiative is implemented.
- The expected value of the metric at the end of RIIO-ED2.
    - Additional relevant information can be inputted into the 'Notes' column.
- An annual cost profile for implementing the initiative over RIIO-ED2 price control period.

M24 – Losses snapshot

9.124 The purpose of this worksheet is to collect a snapshot of the types of activities undertaken by DNOs' to manage Distribution Losses.

9.125 DNOs should report the following activities to manage Distribution Losses:

- Activities where the costs incurred principally relate to managing Distribution Losses.
- Activities where some of the costs incurred relate to managing Distribution Losses (but where losses are not the principal reason for the expenditure)

9.126 DNOs should not report activities that may help to manage losses but where Distribution Losses are not associated with the DNOs decision to undertake the activity and where any losses benefits are purely coincidental. For example, the installation of a new piece of network equipment may reduce losses. However, losses benefits did not inform the decision to undertake the activity because the equipment had to be installed to meet safety standards.

Activity

9.127 Column A lists the relevant category of activity - Cable, Innovative Solution, Transformer, Smart Meters and Relevant Theft of Electricity. There is space for up to two examples of activities under each category. If the activity or project entered in column B is not covered by one of the categories, DNOs should enter it against 'other' and specify in column A what this category is.

9.128 DNOs are to provide an example of an activity which falls under each category listed in Column A based upon a random sampling of activities undertaken within the year. Where a DNO considers an activity, which is under a listed category, to be a novel approach (for example, when replacing a cable with one of a greater diameter – a different low loss core composite is used), this activity should be entered against the relevant category.

9.129 In column B, the title of the programme or project of the policy decision to manage Distribution Losses should be provided. This decision should be at the level used to justify the activity.

9.130 In column C, the type of Distribution Losses that are managed by the activity should be selected – either Technical Losses or Non-Technical Losses.

9.131 In column D, DNOs should select the primary driver of the activity from the list - Equipment to Manage Losses, Operational Activities to Manage Losses, Asset Replacement, General Reinforcement, or Fault Level Reinforcement.

9.132 In column E, DNOs should provide a cross reference to the BPDT table where the costs and volume data for the activity has been reported.

9.133 If appropriate, in column F, the DNO should provide a reference to the paragraph number(s) where this activity can be found in its current Distribution Losses Strategy.

Units and estimated unit costs

9.134 In column G, the DNO should state the unit of activity that is being adopted, eg number of projects, km of cable, transformer volumes, etc.

9.135 In column H, the DNO should enter the estimated unit cost of the activity.

9.136 In column I, the DNO should enter the title of the Baseline Scenario which would be employed if Distribution Losses management was not a consideration in the decision to undertake the activity.

9.137 In column J, the unit cost of the Baseline Scenario solution should be entered. '0' should be inputted if the activity would not otherwise have taken place.

9.138 In column K, enter the estimated incremental component of the unit cost that is justified by Distribution Losses benefits should be entered. For example, if losses reduction is the primary driver, this could be the difference in cost between the adopted option and the Baseline Scenario.

Volumes

9.139 In columns L to X, actual volumes of each activity for every year of RIIO-ED1 up to and including the current Regulatory Year and forecast volumes for every future year up to the end of RIIO-ED2 are required.

Estimated total costs

9.140 In columns Y to AK, the estimated total costs, in 2020/2021 prices, for every year of RIIO-ED1 and RIIO-ED2 should be entered. This should be equal to the product of the estimated unit cost of the activity and the volumes.

Estimated Distribution Losses-Justified Costs

9.141 In columns AL to AX the Distribution Losses-Justified Costs should be entered, in nominal prices, for every year of RIIO-ED1 and RIIO-ED2. This should be equal to the product of the estimated Distribution-Losses Justified Cost and the volumes.

Estimated Distribution Losses benefits over 'Baseline Scenario'

9.142 3.22. In columns AY to BK, the estimated Distribution Losses benefits should be entered (based on the activity compared with the Baseline Scenario) for each year of RIIO-ED1 and RIIO-ED2. A reduction in losses should be presented as a negative value in this worksheet.

9.143 Figures for each year should be based on an estimate of the reduction in losses from the volumes of activity undertaken in that year in addition to any enduring effects from volumes in earlier years.

9.144 A theoretical example is described below.

- Assumed losses reduction per unit of activity of 10 MWh for the adopted option relative to the Baseline Scenario (on an enduring basis to the end of the asset life).
- A volume of two units is implemented in Year 1; three additional units in Year 2.
- Estimated Distribution Losses benefits over 'Baseline Scenario' =
  - Year 1: 20 MWh (2x10)
  - Year 2: 50 MWh ((2x10) + (3x10)).

RIIO-ED1 CBA Tool summary – estimated cumulative values for RIIO-ED1 and 45 years

9.145 In columns BL and BM, the DNO should enter the Distribution Losses-Justified Costs forecast for RIIO-ED2 and, where appropriate (ie for capital investment), for 45 years. This should be the product of the losses-justified unit costs and estimated volumes over RIIO-ED2 and for the 45 years from the start of the activity.

9.146 In columns BN and BO, the DNO should enter the avoided DNO costs over RIIO-ED2 and for 45 years (if applicable). These should be the avoided costs based on undertaking the activity compared with the Baseline Scenario.

9.147 In columns BP and BQ, the DNO should enter the Distribution Losses benefits (based on the activity compared with the Baseline Scenario) over RIIO-ED2 and for 45 years (if appropriate).

9.148 In columns BR and BS, the DNO should enter the cumulative discounted net benefits over RIIO-ED2 and for 45 years (if applicable). Excluding some benefits may result in a negative NPV, which would raise questions among stakeholders as to why such a programme is being implemented.

M25 – Company-Specific Factors

9.149 The purpose of this worksheet is to capture any costs relating to company-specific factors that might result in the efficient level of costs being higher for a specific DNO than others.

9.150 For company-specific factors, this worksheet is intended to aid a transparent and comparable submission of normalisation claims across DNOs and provides Ofgem with a view of the scale of and areas impacted by each factor.

9.151 In relation to regional factors (e.g. record the impact of regional wage variance). We would expect regional factors to be reported in the Business Plan with supporting the evidence.The costs relating to company-specific factors are to be included within the baseline figures reported elsewhere in the BPDTs.

Company-Specific Factors Table

9.152 **Company Specific Factor**: Enter a description of the company-specific factor within the "Company Specific activity" column. The "Company Specific activity" should be consistent with titles and descriptions used with the Business Plan and Business Plan Data Template Commentary.

9.153 **Reference to Supporting Narrative(s):** Provide a list of all locations within the business plan and/or any supporting documents that support the Company-Specific

factor. This will enable Ofgem to associate each company-specific factor across all documents that reference it.

9.154 **Claimed cost per annum:** Enter the value of the net cost that is considered attributable to the company-specific factor. The costs are those which a DNO considers to be caused by a factor that is either unique to the DNO, or materially different from other DNOs.

9.155 DNOs should not average net costs and enter the expected/'profiled' annual net cost when entering values over the course of the RIIO-ED2 (RIIO-ED1 if applicable) price control period. If the company-specific factor has specific historical costs (i.e. if the company-specific factor submitted in RIIO-ED2 is the same as RIIO-ED1), please enter the values of the company specific factor for each year in RIIO-ED1.

9.156 The value entered will be a net cost, accounting for both the unique costs and unique cost savings that the factor generates for the DNO.

9.157 **Cost categories effected:** Select "Yes" from the drop-down menu for each cell where the company-specific factor has a cost impact to the cost category. For each cell where there is no cost impact for that company-specific factor, select "No" from the drop-down menu.

9.158 Further detail on the underlying cost activities and cost types impacted by the company-specific factor should be provided in the Business Plan and Business Plan Data Template Commentary.

M26 – Incremental Costs

9.159 The purpose of this worksheet is to collect a snapshot of any incremental investment undertaken by DNOs i.e. costs incurred over and above the core costs not associated with the primary driver for investment, but instead secondary and/or tertiary drivers such as strategic investment for Net Zero.

9.160 Any incremental investment associated with the management of Distribution Losses should be captured in M24 – Losses Snapshot.

Activity

9.161 Column A lists all asset types from CV7 – Asset Replacement. DNOs should report only against asset types in Column A, where they are proposing incremental investment.

9.162 In Column B, DNOs should cross-reference to the relevant BPDT table where the costs and volume data for the activity has been reported.

9.163 In Column C, the title of the programme or project of the policy decision driving the incremental investment should be provided.

9.164 In Column D, the driver for the incremental investment should be provided, for example, Strategic Investment for Net Zero.

9.165 In Column E, DNOs should cross-reference to the relevant BPDT Commentary, Engineering Justification Paper (EJP) and/or Cost Benefit Analysis (CBA) the provides the justification and analysis of the incremental investment.

Units and estimated unit costs

9.166 In Column F, DNOs should state the unit of activity that is being adopted, for example, MVA of capacity added.

9.167 In Column G, DNOs should enter the estimated unit cost of the activity i.e. the total cost of the activity including the core costs associated with the primary driver for investment and the incremental costs associated with the driver for incremental investment.

9.168 In Column H, DNOs should enter the estimated incremental component of the unit cost in Column G, that is justified by Commentary, EJP and/or CBA as cross-referenced in Column E.

Volumes

9.169 In columns I to M, forecast volumes of each activity for every future year up to the end of RIIO-ED2 are required.

Estimated Total Costs

9.170 In columns N to R, the estimated total costs, in nominal prices, for every year of RIIO-ED2 should be entered. This should be equal to the product of the estimated unit cost of the activity and the volumes.

Estimated Incremental Costs

9.171 In columns S to W the Incremental Costs should be entered, in nominal prices, for every year of RIIO-ED2. This should be equal to the product of the estimated unit incremental cost and the volumes.

M27 – Cyber Security Operational IT

9.172 The purpose of this worksheet is to allow Ofgem to assess proposed cyber resilience costs.

9.173 Please refer to the guidance published by the Cyber Resilience Team on the Ofgem website[6].

M28 – Cyber Security Non-operational IT

9.174 The purpose of this worksheet is to allow Ofgem to assess proposed cyber resilience costs.

9.175 Please refer to the guidance published by the Cyber Resilience Team on the Ofgem website[7].

M29 – Data and Digitalisation

9.176 The purpose of this table is to provide a summary of information on Data and Digitalisation (D&D) expenditure that is reported in relevant tables within the BPDT pack, and to reconcile specific costs between the D&D strategies and the BPDT.

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[6]https://www.ofgem.gov.uk/system/files/docs/2020/04/riio2_cyber_resilience_guidelines.pdf
[7]https://www.ofgem.gov.uk/system/files/docs/2020/04/riio2_cyber_resilience_guidelines.pdf

9.177 The DNOs are required to input the costs of ED1 Innovation in cells H44:K44. Other net costs in the M29 table are automatically populated through linking to other worksheets in the BPDT pack.

M30a – SCR Totex

9.178 The purpose of is template is to identify impacts of SCR and align to SCR costs referenced in the SCR Annex. All SCR costs should be entered in this tab and then detailed on the M30b – SCR Breakdown Worksheet only, and should be excluded from any other tables in the BPDT.

9.179 DNOs must fill out at the three 'variant allowance' tables listed below:

- SCR Best View – The impact DNOs expected to be associated with the SCR
- High SCR Impact – These will outline the highest credible impact associated with SCR
- Low SCR Impact – These will outline the lowest credible impact associated with SCR

9.180 DNOs have the opportunity to provide other breakdowns as identified in the Worksheet.

9.181 DNOs should follow the guidance in paras 4.12-4.14 to input the SCR Best View in to the I3 – BPFM Inputs Worksheet and to input the variant allowance, variant allowance capitalisation rate and allocations table that sits underneath it.

M30b – SCR Breakdown

9.182 The purpose of this table to identify what each company has included in their modelling and planning, and what the impact of each of these is. The costs in this table must reconcile with the SCR Best View M30a – SCR Totex.

Instructions for completing the NARM Tables

Background

9.183 In RIIO-ED2, licensees shall have a price control deliverable, the Network Asset Risk Metric (NARM), relating to the reduction in condition based asset risk that is delivered through Asset Replacement and certain Refurbishment activities.

9.184 Within NARM, condition based asset risk is represented using Network Asset Indices, which comprise three components:-

- Health Index - which relates to asset health and probability of failure;
- Criticality Index - which relates to consequences of failure; and
- Risk Index - this is a monetised risk measure, determined from the combination of the Health Index and Criticality Index, which represents the long term risk associated with condition based asset failure and is the present value (£) of the current and future risk associated with a typical asset within the relevant Health Index and Criticality Index bands

9.185 For Asset Register categories included in the NARM deliverable, the NARM tables provide Network Asset Indices information relating to:-

- the health and criticality of the asset population;
- future changes in health and criticality due to forecast deterioration;
- the impact on health and criticality of planned interventions, for intervention types that are considered in the NARM deliverable.

9.186 The asset categories included within the RIIO-ED2 NARM deliverables shall be consistent across all licensees and encompass all asset categories covered by the Common Network Asset Indices Methodology (CNAIM). This would be a common set covering sixty one RRP Asset Register Categories

General instructions and guidance

9.187 An agreed Common Network Asset Indices Methodology shall be directed by Ofgem for use in completion of the RIIO-ED2 NARM tables. The tables shall be completed in accordance with the principles and guidance agreed as part of the Common Network Asset Indices Methodology for RIIO-ED2. Any additional terminology that is used in the Common Network Asset Indices Methodology will be defined there.

9.188 The health of an asset is derived from a combination of various factors including age and condition data. Individual assets are grouped together using Health Index Bands. A

common approach to deriving asset health and assigning Health Index Bands to assets is defined as part of the Common Network Asset Indices Methodology. This approach shall be used to assign to each asset a Health Index Band between HI1 and HI5.

9.189 The Health Index Bands represent the relative Probability of Failure indicated by each asset's health. The lowest Health Index Band, HI1, is assigned to assets where the Probability of Failure is the same as would be expected for a new asset. The highest Health Index Band, HI5, is assigned to assets with the highest values of Probability of Failure relative to other assets within the same asset category.

9.190 Where the NARM tables require a forecast Health Index Band, representing the Health Index in a future year, the future Health Index Band shall be determined in accordance with the methodology for deriving the future Health Index of an asset defined in the Common Network Asset Indices Methodology for RIIO-ED2.

9.191 Criticality Index Bands provide a comparative measure of the Consequences of Failure associated with an asset. A common approach to assigning Criticality Index Bands to assets is defined as part of the Common Network Asset Indices Methodology for RIIO-ED2. This approach shall be used to assign each asset a Criticality Index Band.

9.192 Volumes of assets entered into the Health Index and Criticality Index matrices, within the NARM tables, shall be entered using consistent units to those used for entry of the asset volumes in the BPDT cost and volumes tables.

9.193 The asset categories included within the RIIO-ED2 NARM deliverables shall be consistent across all licensees and encompass all asset categories covered by the Common Network Asset Indices Methodology (CNAIM). This is a common set covering the sixty one RRP Asset Register categories included in the NARM tables.

9.194 Where the licensee does not have a population of assets in a particular Asset Register category, the relevant cells in the NARM tables for that Asset Register category should be populated to show that zero volumes apply.

9.195 Movements in Health Index and Criticality Index should reconcile to the Asset Register movements, or activity volumes, shown in the BPDT cost and volumes tables for the same investment drivers/ reasons for movement.

9.196 Movements in Health Index and Criticality Index due to asset additions shall be entered as positive values.

9.197 Movements in Health Index and Criticality Index due to asset disposals shall be entered as negative values.

9.198 Where the licensee does not forecast movements in the health and criticality rankings for a particular Asset Register category, the relevant cells in the NARM tables for that Asset Register category should be populated to show that zero movement volumes apply.

NARM1 - Risk Index Weightings

9.199 Worksheet NARM1 contains fixed value data for the Risk Index values, used in the NARM measure, for each asset category. These provide the typical values of long term risk that are applied to an asset located in a given Health Index/ Criticality Index combination.

9.200 The Risk Index values within this worksheet correspond to those stated within the agreed Common Network Asset Indices Methodology applicable to this submission.

NARM2 - ED1 NARM Profiles

9.201 This worksheet provides Ofgem with licensee's views of the health and criticality of their assets for the remaining years of RIIO-ED1, as represented using Health Index and Criticality Index information determined using the Common Network Asset Indices Methodology for RIIO-ED2.

'Asset Profile – Start of Current Year (at 01/04/2021)' (Columns F to K)

9.202 In these columns, for each Asset Register category, input the number of assets in each combination of HI bands, HI1 to HI5, and criticality bands, C1 to C4, at 31st March 2021.

9.203 The total volumes of assets shown in each Asset Register category should reconcile to the Total Asset Register volumes shown on table V1 ('V1 - Total Asset Movements') of the BPDT for the closing balance of the reporting year ending 31st March 2021.

'Forecast Asset Profile - End of ED1 (31/03/2023) - With No Further ED1 Intervention' (Columns M to R)

9.204 This provides a forecast of the health and criticality rankings as at the end of RIIO-ED1, for assets in the Current Year asset population (as described in Columns F to K), assuming no interventions are undertaken in the remainder of the RIIO-ED1 period.

9.205 In these columns, for each Asset Register category, input the number of assets in each combination of HI bands, HI1 to HI5, and criticality bands, C1 to C4, using the future Health Index Bands for each asset based on forecasting forwards to the end of 2022/23. Future Health Index Bands shall be determined in accordance with the methodology for deriving the future Health Index of an asset defined in the Common Network Asset Indices Methodology for RIIO-ED2.

9.206 The total volumes of assets shown in each Asset Register category should reconcile to the total volumes for the Asset Register Category shown in the Current Year asset population (in Columns F to K).

'Forecast Asset Profile - End of ED1 (31/03/2023) With ED1 Interventions' (Columns T to Y)

9.207 This provides a forecast of the health and criticality rankings as at the end of RIIO-ED1, taking into account actual and forecast. When compared with the 'Forecast Asset Profile - End of ED1 (31/03/2023) - With No Further ED1 Intervention' (columns M to R), this provides an indication of the impact of actual and forecast licensee activity, in the remainder of RIIO-ED1, upon the health and criticality ranking for each Asset Register category.

9.208 In these columns, for each Asset Register category, input the number of assets forecast to be ranked, at 31st March 2023, in each combination of HI bands, HI1 to HI5, and criticality bands, C1 to C4, taking into account the licensees actual and forecast interventions in the period 1st April 2021 to 31st March 2023.

9.209 The total volumes of assets shown in each Asset Register category should reconcile to the forecast Total Asset Register volumes shown on table V1 ('V1 - Total Asset Movements') of the BPDT for the closing balance of the reporting year ending 31st March 2023.

NARM3 – ED2 NARM Profiles

9.210 This worksheet summarises the overall forecast health and criticality data for the RIIO-ED2 period, for all Asset Register categories where the NARM deliverable is applicable. This shows:-

- the forecast change in asset health during the RIIO-ED2 period; and
- the forecast impact of planned RIIO-ED2 interventions that are intervention types that shall be included within the measure of NARM delivery.

'Forecast Asset Profile - Start of ED2 Period (01/04/2023)' (Columns F to K)

9.211 This provides the forecast health and criticality rankings for the start of the RIIO-ED2 period for the asset populations in each Asset Register category.

9.212 The columns are auto-populated with the forecast health and criticality rankings from the 'Forecast Asset Profile - End of ED1 (31/03/2023) With ED1 Interventions' in table NARM2.

'Impact of Forecast Deterioration to End of ED2 (31/03/2028)' (Columns M to R)

9.213 Forecast deterioration represents the change in Health Index, over time, due to changes in asset health. Deterioration relates only to the impact on the Health Index Band and therefore should not include changes to the Criticality Index Band.

9.214 In these columns the forecast deterioration, for each Asset Register category, is calculated from the change in Health Index profiles between the 'Forecast Asset Profile - Start of ED2 Period (01/04/2023)' (Columns F to K) and the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' (Columns T to Y).

'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' (Columns T to Y)

9.215 This provides a forecast of the health and criticality rankings as at the end of RIIO-ED2, for assets in the Start of ED2 period asset population (as described in Columns F to K), assuming no investment in the RIIO-ED2 period.

9.216 In these columns, for each Asset Register category, input the number of assets in each combination of HI bands, HI1 to HI5, and criticality bands, C1 to C4, using the future Health Index Bands for each asset based on forecasting forwards to the end of 2027/28. Future Health Index Bands shall be determined in accordance with the methodology for deriving the future Health Index of an asset defined in the Common Network Asset Indices Methodology for RIIO-ED2.

9.217 The total volumes of assets shown in each Asset Register category should reconcile to the total volumes for the Asset Register Category shown in the Start of ED2 period asset population (in Columns F to K).

'Forecast movements due to planned Asset Replacement upon 2028 Profile – Disposals' (Columns AA to AF)

9.218 Asset Replacement interventions contribute to NARM delivery, for assets where the Asset Register category is included within NARM. These columns show the forecast impact on health and criticality rankings, as at the end of RIIO-ED2, resulting from asset disposals associated with planned Asset Replacement activity.

9.219 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) due to planned Asset Replacement disposals.

9.220 The total volumes of asset disposals shown in each Asset Register category should reconcile to the total disposal volumes for the Asset Register Category in the RIIO-ED2 period shown in table CV7 of the BPDT.

'Forecast movements due to planned Asset Replacement upon 2028 Profile - Additions' (Columns AH to AM)

9.221 Asset Replacement interventions contribute to NARM delivery, for assets where the Asset Register category is included within NARM. These columns show the forecast impact on health and criticality rankings, as at the end of RIIO-ED2, resulting from asset additions associated with planned Asset Replacement activity.

9.222 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of

ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) due to planned Asset Replacement additions.

9.223 The total volumes of asset additions shown in each Asset Register category should reconcile to the total additions volumes for the Asset Register Category in the RIIO-ED2 period shown in table CV7 of the BPDT.

'Forecast movements due to planned Refurbishment (NARM) activity upon 2028 Profile' (Columns AO to BA)

9.224 Certain Refurbishment interventions contribute to NARM delivery, for assets where the Asset Register category is included within NARM. These are activities are classified as Refurbishment (NARM) activities and are included in table CV9 of the BPDT.

9.225 Other Refurbishment activities are not considered in the delivery of NARM. These are separately identified from Repair & Maintenance activities because they tend to be 'one-off' activities that would not be routinely expected to be undertaken in the life of an asset (and therefore have the potential to distort comparability of R&M activity). However, these activities aren't considered in delivery against the NARM output either because they are not considered to deliver long-term health improvements, or they are activities where a long term health improvement is expected but the improvement cannot be quantified at the time the refurbishment is undertaken (e.g. because it is assessed using a lagging measure), making it unsuitable for inclusion in a delivery metric. These are activities are classified as Refurbishment (no NARM) activities and are included in table CV8 of the BPDT.

9.226 These columns show the forecast impact on health and criticality rankings, as at the end of RIIO-ED2, resulting from those Refurbishment interventions that are considered to contribute to NARM delivery i.e. Refurbishment (NARM) activities only.

'Forecast movements due to planned Refurbishment (NARM) activity upon 2028 Profile - Pre-Refurbishment Health/ Criticality of Refurbished Assets' (Columns AO to AT)

9.227 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) resulting from planned Refurbishment (NARM) interventions, which for each asset relate to the

movements from the Health Index that is forecast if the intervention were not to be undertaken (i.e. the movement from the pre-refurbishment Health Index, which shall be entered as a negative value). These movements should be consistent with the RIIO-ED2 activity shown in table CV9 of the BPDT.

'Forecast movements due to planned Refurbishment (NARM) activity upon 2028 Profile - Post-Refurbishment Health/ Criticality of Refurbished Assets' (Columns AV to BA)

9.228 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) resulting from planned Refurbishment (NARM) interventions, which for each asset relate to the movements to the Health Index that is forecast to be achieved as a result of the intervention being undertaken (i.e. the movement to the post-refurbishment Health Index, which shall be entered as a positive value). These movements should be consistent with the RIIO-ED2 activity shown in table CV9 of the BPDT.

'Forecast movements due to planned HVP activity upon 2028 Profile - Asset Replacement Disposals' (Columns BC to BH)

9.229 Interventions undertaken as part of high value projects may include asset replacement works. These columns show the forecast impact on health and criticality rankings, as at the end of RIIO-ED2, resulting from any asset disposals associated with planned asset replacement activity undertaken as part of high value projects. These works will be reported in these columns and not the respective columns for Asset Replacement activity (i.e. columns AA to AF).

9.230 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) due to planned asset replacement disposals undertaken as part of high value projects.

9.231 The total volumes of asset disposals shown in each Asset Register category should be consistent with table CV25 of the BPDT, noting that asset volumes shown on table CV25 may include asset volumes associated with other investment drivers than asset replacement.

'Forecast movements due to planned HVP activity upon 2028 Profile - Asset Replacement Additions' (Columns BJ to BO)

9.232 Interventions undertaken as part of high value projects may include asset replacement works. These columns show the forecast impact on health and criticality rankings, as at the end of RIIO-ED2, resulting from any asset additions associated with planned asset replacement activity undertaken as part of high value projects. These works will be reported in these columns and not the respective columns for Asset Replacement activity (i.e. columns AH to AM).

9.233 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) due to planned asset replacement additions undertaken as part of high value projects.

9.234 The total volumes of asset additions shown in each Asset Register category should be consistent with table CV25 of the BPDT, noting that asset volumes shown on table CV25 may include asset volumes associated with other investment drivers than asset replacement.

'Forecast movements due to planned HVP activity upon 2028 Profile - Refurbishment (NARM) activity' (Columns BQ to CC)

9.235 Interventions undertaken as part of high value projects may include refurbishment activities that are activity types that are classified as Refurbishment (NARM) activities. These columns show the forecast impact on health and criticality rankings, as at the end of RIIO-ED2, resulting from any planned Refurbishment (NARM) undertaken as part of high value projects. These works will be reported in these columns and not the respective columns for Refurbishment (NARM) activity (i.e. columns AO to BA).

9.236 In these columns, for each Asset Register Category, enter the net movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) due to planned Refurbishment (NARM) interventions undertaken as part of high value projects. These should be consistent with any high value project expenditure included in table CV25 of the BPDT for Refurbishment (NARM) works.

'Forecast movements due to planned HVP activity upon 2028 Profile - Refurbishment (NARM) activity - Pre-Refurbishment Health/ Criticality of Refurbished Assets' (Columns BQ to BV)

9.237 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) resulting from planned Refurbishment (NARM) interventions undertaken as part of high value projects, which for each asset relate to the movements from the Health Index that is forecast if the intervention were not to be undertaken (i.e. the movement from the pre-refurbishment Health Index, which shall be entered as a negative value).

9.238 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) resulting from planned Refurbishment (NARM) interventions undertaken as part of high value projects, which for each asset relate to the movements from the Health Index that is forecast if the intervention were not to be undertaken (i.e. the movement from the pre-refurbishment Health Index, which shall be entered as a negative value).

'Forecast movements due to planned HVP activity upon 2028 Profile - Refurbishment (NARM) activity - Post-Refurbishment Health/ Criticality of Refurbished Assets' (Columns BX to CC)

9.239 In these columns, for each Asset Register Category, enter the movements to the forecast health and criticality profile (with respect to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' in Columns T to Y) resulting from planned Refurbishment (NARM) interventions undertaken as part of high value projects, which for each asset relate to the movements to the Health Index that is forecast to be achieved as a result of the intervention being undertaken (i.e. the movement to the post-refurbishment Health Index, which shall be entered as a positive value).

'Forecast - End of ED2 Period (31/03/2028) With NARM Interventions' (Columns CE to CJ)

9.240 This provides the forecast health and criticality rankings, for each Asset Register category, at the end of the RIIO-ED2 period taking into account the impact of planned NARM related interventions i.e.:-

- Asset Replacement;
- Refurbishment (NARM);
- Asset replacement and Refurbishment (NARM) works undertaken as part of high value projects.

9.241 In these columns the asset profile, for each Asset Register category, is calculated by application of the health and criticality ranking movements entered in columns AA to CC to the 'Forecast Asset Profile - End of ED2 Period (31/03/2028) With No ED2 Intervention' (Columns T to Y).

NARM4 – ED2 NARM Risk Movements

'Risk Index – Long Term Risk (impact on 2028 profile)' (Columns C to I)

9.242 These columns determine the overall value of long term risk for the asset populations and movements shown in sheet NARM3 – ED2 NARM Profiles columns T to CC. The value of long term risk is derived by application of the appropriate value of Risk Index (from sheet NARM1) to the volumes shown in the health and criticality rankings in columns T to CC.

9.243 These columns calculate for each Asset Register category:-

- the overall value of long term risk associated with the asset population based on the health and criticaility assets profile for the start of RIIO-ED2, assuming no interventions in the RIIO-ED2 period (Column C);
- the overall value of long term risk associated with the asset population based on the health and criticality assets profile for the end of RIIO-ED2, assuming no interventions in the RIIO-ED2 period (Column D);
- the overall net value of long term risk movement (relative to the long term risk associated with the asset profile at the end of the RIIO-ED2 period delivered by planned Asset Replacement interventions in the RIIO-ED2 period (Column E);

- the overall net value of long term risk movement (relative to the long term risk associated with the asset profile at the end of the RIIO-ED2 period) delivered by planned Refurbishment (NARM) interventions in the RIIO-ED2 period (Column F);
- the overall net value of long term risk movement (relative to the long term risk associated with the asset profile at the end of the RIIO-ED2 period) delivered by planned asset replacement or Refurbishment NARM interventions undertaken as part of high value projects in the RIIO-ED2 period (Column G);
- the overall value of long term risk associated with the asset population based on the health and criticality asset profile for the end of RIIO-ED2, taking into account planned Asset Replacement, Refurbishment (NARM) interventions in the RIIO-ED2 period, including planned asset replacement and Refurbishment (NARM) interventions undertaken as part of high value projects (Column H);
- the overall net value of long term risk movement relative to the long term risk associated with the asset profile at the end of the RIIO-ED2 period) delivered through planned NARM interventions in the RIIO-ED2 period i.e. Asset Replacement and Refurbishment (NARM) interventions including planned asset replacement and Refurbishment (NARM) interventions undertaken as part of high value projects (Column I).

9.244 Rows 69 to 72 summate the long term risk values, described above, by the voltage of operation of the assets. Row 68 provides an overall total for all Asset Register categories included in the NARM measure.

9.245 Rows 73 to 88 summate the long term risk values, described above, by grouped asset sub categories.

'RIIO-ED2 Total Costs £m'

9.246 These columns calculate the total costs associated with NARM interventions for each Asset Register category:

- The total Asset Replacement costs from sheet CV7a – Asset Repl NARM is calculated here for each Asset Register category (Column K);
- The total Refurbishment NARM costs from sheet CV9 – Refurbishment NARM is calculated here for each Asset Register category (Column L);
- Any NARM related expenditure for HVP – Replacement (Column M) or HVP – Refurbishment (Column N) should be entered for each Asset Register category.

- The total costs associated with NARM interventions are calculated for each Asset Register category (Column O).

9.247 Rows 69 to 72 summate the total costs associated with NARM interventions, described above, by the voltage of operation of the assets. Row 68 provides an overall total for all Asset Register categories included in the NARM measure.

9.248 Rows 73 to 88 summate the total costs associated with NARM interventions, described above, by grouped asset sub categories.

LI – Substations/ LI Substation Groups

Demand group description

Substation/Substation Group

9.249 In the 'LI – Substations/Substation Group worksheets, this column should be populated with a unique name for each primary substation, excluding substations that are solely for a single customer.

9.250 Some DNOs operate an interconnected network of geographically dispersed single transformer primary substations that are interconnected on the low voltage side of the transformers so as to operate in a similar manner to an individual multi-transformer substation. These groups of multiple single transformer substations, that normally operate interconnected on the low voltage side of the substations, shall be reported as if they are a single individual substation with all the substation names listed. These will be reported in the 'LI – Substations' worksheets.

9.251 In the 'LI – Substation Groups' worksheets, this column should be populated with a unique name for a group of substations which are assessed together. This unique name should include a name for the group and include the names of the substations which make up the group. The individual substations that make up the group should also be included in the 'LI – Substations' worksheets.

9.252 Due to the number of ways substation groups can be assessed, DNOs are only required to report Load Index information for substation groups where there is an identified issue and expenditure is planned or in progress. As a starting point, DNOs should include all the substation groups specified in the 'CV102 Reinforcement' worksheet

within the RIIO-ED1 Business Plan Data Template they submitted to Ofgem. For the avoidance of doubt, the full list should be used even if expenditure is no longer planned.

9.253 Where a substation/substation group has been included in the worksheets in a previous year, the same name should be used (unless the substation name has changed) and the associated data should be entered in the same row of the worksheets. This is important to ensure that consistent data is linked through to the multi-year tracker worksheets.

Substation/Substation Group primary voltage

9.254 This column should be populated with the highest voltage in operation at the substation/substation group.

Substation/Substation Group secondary voltage

9.255 This column should be populated with the lowest voltage in operation at each substation/substation group.

No. of customers

9.256 This column should be populated with the number of customers supplied from the substation/substation group.

Load index

Substation/Substation Group firm capacity immediately available under single circuit outage conditions

9.257 This column should be populated with the load index firm capacity as defined in the BPDT Glossary.

9.258 The firm capacity data should correspond to the season of most onerous demand.

9.259 For multi-transformer substations, the firm capacity value shall only include capacity that will be available through automatic processes (eg parallel operation of transformers, hard-wired switchover schemes, automatic SCADA initiated changeover schemes) or manually initiated SCADA changeover schemes. The changeover schemes

that can be included are those which reconfigure running arrangements at primary voltages and changeover supplies to primary substation switchboards. This excludes any activities requiring switching downstream of primary substation switchboards which can be either initiated by SCADA or through manual intervention.

9.260 For single-transformer substations, the firm capacity value shall include the capacity that will be available through both automatic processes and manual processes, provided the manual processes can be carried out within the time constraints specified in Engineering Recommendation P2. This approach avoids single transformer primary substations being assigned an LI ranking of LI5, due to the absence of immediately available alternative capacity.

9.261 The firm capacity value should not include any adjustments for, demand side response's (DSR) or distributed generation's (DG) contribution to security of supply. These are recorded separately.

Available DSR adjustment

9.262 This is the capacity (in MVA) that is released through DNO DSR contracts. These commercial arrangements allow DNOs to request that demand is reduced or disconnected. The available DSR adjustment should only include those DSR arrangements that can reduce demand within the time constraints specified in Engineering Recommendation P2.

9.263 The adjustment that is made should be carried out in line with the recommendations of engineering technical recommendation ETR130.

Assessed contribution towards security supply from DG adjustment

9.264 This is the capacity (in MVA) that is released through the contribution of DG to security of supply compliance. The adjustment that is made should be carried out in line with the recommendations of engineering technical recommendation ETR130.

LI firm capacity

9.265 The calculated firm capacity for use within the derivation of LI ranking and LI risk points. It is the firm capacity calculated as the capacity available under n-1 outage

conditions including the contribution from DNO contracted DSR and the contribution of DG to security of supply compliance.

Season of most onerous demand

9.266 The "Season of most onerous demand" sets out whether the highest utilisation (as defined by the ratio of demand to firm capacity and not taking into account any DSR or generation contribution) occurs during winter or summer. For example whilst the absolute value of demand may be lower in the summer, the utilisation may be higher as a result of lower equipment ratings – this would lead to the summer being the season of most onerous demand.

Limiting Factor

9.267 The "Limiting Factor" refers to the specific restricting factor, of those listed, that determines the substation's/substation group's firm capacity:

    a) Cyclic rating of a transformer
    b) Rating of the incoming circuit(s)
    c) Capacity of normally connected secondary interconnection
    d) Rating of the secondary switchboard
    e) Rating of any ancillary equipment
    f) Voltage regulation
    g) Substation or network configuration
    h) Rating of the primary switchgear or busbars
    i) Redundant substation
    j) Meshed network circuit capacity
    k) Customer connection agreement.

9.268 There could be more than one restricting factor in place. This column should be used to specify the factor that limits the firm capacity to the lowest value.

Substation/substation group observed maximum demand

9.269 The maximum demand (in MVA) which corresponds to the season of most onerous demand for the substation/substation group within the regulatory year corrected only for abnormal running conditions. Correcting for abnormal running conditions relates to removing abnormal demand peaks that may arise, for example, during fault situations

or maintenance outages. These corrections amend measured maximum into observed maximum demand.

Weather correction adjustment to observed maximum demand

9.270 The negative or positive adjustment to maximum demand (in MVA) that results from any weather correction, eg using ambient temperature data to rebase maximum demand values to an average cold spell.

Measurable distributed generation latent demand adjustment to observed maximum demand

9.271 Measurable DG output that coincides with the observed maximum demand and latent demand which needs to be supplied under n-1 conditions. This specifically applies to DG which does not contribute to firm capacity. The latent demand should be determined with reference to the assessment of latent demand as specified in engineering technical recommendation ETR130. This assessment is only required for highly loaded sites (those that are in load index bandings LI3 – LI5). DNOs can include data for all substations/substation groups where the data is readily available.

Capacity committed through Connection Agreements not utilised in year

9.272 When new customers connect to the network, licensees enter into connection agreements which have an agreed supply capacity. The amount of committed capacity will be related to the demand that a customer is expected to use and this demand will have been used for any reinforcement under cost apportionment rules. As a result this agreed supply capacity is committed to the customer. While the customer has been provided the agreed supply capacity they may not be using the full amount. This means that the measured demand on the network understates the amount of demand that would be present if the customer used all the committed capacity. This entry requires the population of the net difference between the demand being used by customers and the capacity committed in connection agreements at the time of maximum demand. It is anticipated that the types of customers that this affects are predominantly industrial and commercial customers..

Connected non-firm demand adjustment to observed maximum demand

9.273 Non-firm demand that can be discounted from maximum demand. For example a DNO may have an agreement with a demand customer that they will be disconnected from the network under fault conditions. This should be entered as a negative value.

LI maximum demand

9.274 The calculated maximum demand for use within the derivation of LI ranking and LI risk points. This is calculated as the observed maximum demand adjusted for the weather correction, measurable DG latent demand and non-firm demand.

LI maximum demand as % of LI firm capacity

9.275 This calculation shows the LI maximum demand as a percentage of the LI firm capacity.

Hours at risk

9.276 This is the amount of time the substation/substation group demand is above 100% of LI firm capacity during the regulatory year.

LI ranking

9.277 This column calculates the LI ranking as directed by the bandings published in Ofgem's Strategy Decision for RIIO-ED1 published in March 2013:

LI ranking	Loading percentage	Duration factor
LI1	>=0 and <80	n/a
LI2	>=80 and <95	n/a
LI3	>=95 and <99	n/a
9.278 LI4	>=99	<9 hours

9.279 LI5	>=99	>=9 hours

LI risk points

9.280 This column calculates the LI risk points consistent with the weightings used in the RIIO-ED1 Business Plan Data Templates submitted to Ofgem.

9.281 The calculation is the product of the number of customers on a substation/substation group and the weighting assigned for the LI ranking, as shown in the table below:

LI ranking	LI risk point weighting
LI1	1
LI2	1
LI3	1
LI4	20
LI5	100

FORECAST LOAD INDEX MAX DEMAND

Historic and forecast max demand (MVA) - excluding forecast reinforcement / including contracted non-firm demand

9.282 Historic and forecast "LOAD INDEX MAXIMUM DEMAND" should be provided on an annual basis covering the period 2015/16 – 2022/28. This figure should include any forecast impact of increased/ decreased levels of non-firm demand connected in future years and reinforcement investment undertaken/ forecast to be undertaken in RIIO-ED1. Where actual maximum demand levels are

available for the 2020/21 reporting year, these should be included in the 2020/21 input cells as though they are a forecast.

FORECAST LOAD INDEX FIRM CAPACITY

<u>Historic and forecast firm capacity (MVA) - including forecast RIIO-ED2 reinforcement / including actual/ forecast RIIO-ED1 reinforcement and all contracted DSR impact</u>

9.283 Historic "LOAD INDEX FIRM CAPACITY" and forecast "LOAD INDEX FIRM CAPACITY" should be provided on an annual basis covering the period 2015/16 – 2022/28. This figure should include any forecast impact of increased/ decreased levels of DSR contracted in future years and reinforcement investment undertaken/ forecast to be undertaken in RIIO-ED1. Where actual maximum demand levels are available for the 2020/21 reporting year, these should be included in the 2020/21 input cells as though they are a forecast.

LOAD INDEX - 31 March 2023 (start of RIIO-ED2)

<u>31 March 2023 LOAD INDEX MAXIMUM DEMAND as % of LOAD INDEX FIRM CAPACITY (start of RIIO-ED2)</u>

9.284 This calculates the 2023 Maximum Demand as % of Substation Firm Capacity for each substation as forecast for the start of the RIIO-ED2 period. The figures for Firm capacity should reflect any interventions carried out, or forecast to be carried out in RIIO-ED1.

<u>31 March 2023 forecast hours / energy at risk (start of RIIO-ED2)</u>

9.285 The amount of time the substation is forecast to spend loaded at 100% or over during its demand peak in the 2022/23 reporting year without investment.

<u>Load Index rating (start of RIIO-ED2)</u>

9.286 Each substation's forecast Load Index rating during 2027/28 without intervention.

LOAD INDEX - 31 March 2028 (with no further RIIO-ED2 intervention)

31 March 2028 LOAD INDEX MAXIMUM DEMAND as % of LOAD INDEX FIRM CAPACITY (with no further RIIO-ED2 intervention)

9.287 This calculates the 2028 Maximum Demand as % of Substation Firm Capacity for each substation as forecast without reinforcement intervention.

31 March 2028 forecast hours / energy at risk (with no further RIIO-ED2 intervention)

9.288 The amount of time the substation is forecast to spend loaded at 100% or over during its demand peak in the 2027/28 reporting year without investment.

Load Index rating (2028 without intervention)

9.289 Each substation's forecast Load Index rating during 2027/28 without intervention.

Expenditure

Historic and forecast reinforcement expenditure (£m)

9.290 Historic and forecast expenditure should be provided on an annual basis covering the period 2015/16 – 2027/28. Where the demand growth at a particular site requires a new substation to be constructed, the expenditure should be populated against the substation that's demand growth is the main driver for the investment.

P2 Compliance

9.291 This column records details of any P2 derogation associated with the substations/substation groups.

9.292 This column must be completed for all substations/substation groups ranked as LI3, LI4 and LI5. It is recognised that not all these substations/substation groups will require intervention as this depends on DNOs policies and approaches to compliance with P2.

- Where a derogation is in place select "Yes, in place".

- Where a derogation is anticipated select "Yes, anticipated". This situation would arise where a substation/substation group is forecast to require intervention, but the planned intervention may be subject to delays and as a consequence the substation/substation group would become non-compliant with P2.
- Where a derogation will be avoided due to interventions taking place select "No, avoided".
- Where a derogation is not required due to P2 requirements being met without intervention select "Not required".
- Where a substation/substation group is LI1 – LI2 select "n/a".

Intervention Details

Intervention action during year

9.293 This column is used to indicate where some form of intervention action that impacts the substation/substation group, has taken place during the regulatory year. This intervention may relate to a multi-year project which has not yet been commissioned. Where this is the case "in progress" should be selected. Where the intervention has been commissioned leading to an increase in capacity or reduction in demand select "completed". For multi-year projects, completed should only be selected once the entire project has been completed.

DNO reference for intervention (eg project id)

9.294 This is the unique reference used by the DNO for the intervention project. The same reference may be used on different rows where a project impacts more than one substation (eg where the installation of a new substation off-loads two existing substations).

9.295 In some cases more than one reference may be required where a DNO uses more than one project for an intervention.

N-1 or N-2 intervention?

9.296 This column indicates whether the intervention is to resolve a single circuit outage (select "n-1") or second circuit outage (select "n-2") issue. Engineering recommendation P2 specifies when an n-2 assessment is required.

9.297 Leave blank if there is no intervention.

<u>Firm capacity change resulting from intervention</u>

9.298 This column records the change in firm capacity (in MVA) that is delivered by the intervention.

9.299 Any change in firm capacity must only be stated once the intervention is commissioned. For multi-year projects that have staged commissioning, the intervention can only be recognised on commissioning of the entire scheme.

9.300 Conventional interventions tend to lead to discrete step changes in capacity, but since innovative solutions, by their nature, can lead to variable changes in capacity, the approach to specifying the change in capacity is more complex.

9.301 It is also anticipated that innovative solutions will continue to be developed during RIIO-ED1, so it is not possible to pre-define how these should be dealt with.

9.302 To enable DNOs to specify the capacity added for innovative solutions the following guiding principles apply:

- DNOs should determine and define how they calculate additional capacity for each innovative solution
- the methodology should be described in the commentary
- following annual submissions of data, Ofgem may identify whether there is a need for standardisation of the calculation methodology where innovative solutions are being used more widely.

<u>Demand change resulting from intervention</u>

9.303 This column records the change in demand (MVA) that arises following the intervention. This may be positive where demand is increased (eg when a new substation is installed and loaded) or negative where demand is off-loaded to another substation.

9.304 For conventional interventions the change in demand should be based upon the new normal running arrangement (eg based upon a new split point on the network).

9.305 Innovative solutions may lead to dynamic operation of the network where the split points change to balance load or reduce losses.

9.306 To enable DNOs to specify the demand change for innovative solutions the following guiding principles apply:

- DNOs should determine and define how they calculate the demand change for each innovative solution
- the methodology should be described in the commentary
- following annual submissions of data, Ofgem may identify whether there is a need for standardisation of the calculation methodology where innovative solutions are being used more widely.

Type of intervention

9.307 This column captures whether the intervention is conventional, innovative or a mixed solution.

9.308 Conventional interventions include replacing existing assets (such as transformers, cables and overhead lines) with larger capacity units or installing additional assets to augment the overall capacity. Changes can usually be measured by discrete increments. To align with 'CV1 – Primary Reinforcement' in the Costs and Volumes Reporting Pack conventional reinforcement is subdivided into substation work and circuit work.

9.309 Innovative solutions are new ways of operating and controlling existing assets or using different assets (eg battery storage, dynamic asset ratings) developed through innovation trials (eg funded through the Low Carbon Networks Fund, Network Innovation Allowance or Network Innovation Competition). Changes are generally dynamic responding to conditions observed on the network.

9.310 Where the intervention only includes work at a substation, select "conventional – substation".

9.311 Where the intervention only includes work on circuits, select "conventional – circuit".

9.312 Where the intervention includes work at a substation and on circuits select "conventional – mixed".

9.313 Where the intervention is solely an innovative solution select "innovative".

9.314 Where the intervention is a combination of a conventional solution and innovative solution select "conventional and innovative".

Intervention description

9.315 This column allows DNOs to provide a brief narrative description of the intervention. This will be used to group similar activities when comparing costs.

9.316 Typical examples of conventional solutions are:

- Uprating of transformers
- Installation of additional transformer
- Uprating upstream circuit
- Uprating current transformers.

9.317 Typical examples of innovative solutions are:

- Dynamic asset ratings
- Load balancing schemes
- Energy storage.

Appendix 1 - Cost Allocation Scenarios Fault and Asset Replacement

Example	RIGS Classification	
	Fault	Non Fault
Cable Scenarios		
An LV UG cable fault requires the length of cable damaged in the fault incident to be replaced to restore the cable to Pre-Fault Availability. The length may vary for different faults because there is no pre-set typical length .	All fault costs	N/A
An LV UG cable fault repair requires an extra length of cable to be installed in addition to the length damaged as a result of the fault incident. This is required either due to having to cut back the existing cable to get to a dry section, or to obtain a suitable jointing postition. In both casesthe full length is required to restore the cable to pre-fault availability.	All fault costs	N/A
An LV UG cable fault repair also addresses previous cable condition or fault history. The full length was required to be replaced to bring back the asset to Pre-Fault Availability. The existence of cable condition or previous fault data is irrelevant once the requirement to do the work is triggered by a fault.	All fault costs	N/A
An LV UG cable fault requires a length of cable to be replaced but DNO elects to replace additional cable based on fault history. The length required to restore the cable to Pre-Fault Availability is classed as faults, the additional length should be classed as asset replacement. Permissible that this was undertaken at the same time.	Minimum repair of 5m fault costs	45m additional asset replacement
LV UG cable fault repair with defective link box found during restoration (not linked to fault). Cable repair to faults, link box to asset replacement.	Cable repair faults costs	Link box replacement asset replacement
A HV UG cable fault requires a length of cable damaged in the fault incident to be replaced to restore cable to Pre-Fault Availability. The length may vary for different faults because there is no pre-set typical length.	All fault costs	N/A
A HV UG cable fault repair is completed during unplanned IIS (interruption incentitive scheme) incident. In this case the repair work is completed before customers are restored. The timing of when the repair is completed is not dependent on the completion	All fault costs	N/A

of an IIS incident. All the costs associated with the repair should be booked to faults.		
A HV UG cable fault repair is completed after customers are restored and IIS incident is closed. In this case the repair work is completed after customers are restored. The timing of when the repair is completed is not dependent on the completion of an IIS incident. All the costs associated with the repair should be booked to faults.	All fault costs	N/A
A HV UG cable fault requires a length of cable to be replaced but prior information exists that the cable had poor fault history. The pre-existence of performance data is irrelevant if the repair is triggered by a fault. All the costs associated with the repair should be booked to faults.	All fault costs	N/A
A HV UG cable fault repair requires a length of cable to be replaced to return the cable to Pre-Fault Availability, but the DNO elects to replace an additional length due to prior information that the feeder had poor fault history. The length required for the fault repair should be classed as faults, the additional length should be classed as asset replacement.	Length required for fault repair treated as fault costs	Additional length to address fault history treated as asset replacement
A potential LV fault is causing fuses to blow, but supplies are being restored with replacement fuses and there is no clear location of the fault to carry out a repair. To monitor the situation LV fault monitoring devices are installed on the network and these identify the possible location of a joint that is breaking down and sniff tests confirm this. A project is undertaken to overlay a short length of cable to remove this joint before a further faults and loss of supplies occur. The initial costs of restoring supplies and installing devices will be logged as fault costs. The work that involves a planned shutdown and replacement of the short cable length is reported as asset replacement.	Initial costs of restoring supplies and installing devices fault costs	Cable overlay asset replacement
While on an LV mains fault, the cut out in a property is observed to be in poor condition. This does not need to be replaced to repair the LV fault and is not the cause of the fault but while on site this is replaced due to its condition. These additional costs for the replacement of the cut out should be reported as asset replacement.	LV mains fault recorded as fault costs	Cut out change reported as asset replacement
An underground cable fault requires a revised route e.g. protected trees, which prevent digging along original route. The entire length of the revised section is classified as faults given this is the work undertaken to bring the cable back into Pre-Fault Availability.	All fault costs	N/A

Excavating as a result of an underground fault reveals that the existing cable is shallow and not in confirmance with HAUC requirements, therefore additional work is undertaken to lower the cable to the correct depth. The costs of repairing and dropping to the current design depth for the length of cable that would have restored the circuit to Pre-Fault Availability are classified as faults. The additional costs to lower further sections of the cable to the correct depth are classified as Shallow Cables in Legal and Safety	Additional length to address fault history treated as asset replacement	Lowering further sections of cables legal & safety
A fire underneath/near a cable bridge results in a network fault and the need to replace and rebuild the entire structure. To reduce the likelihood of a repeat of this incident additional anti-climbing devices and security are installed as part of the same scheme to replace and rebuild the structure. The costs to replace the cables and replace and rebuild the bridge should be reported in faults. The additional anti-climbing devices and security should be reported in legal & safety.	Cable replacement bridge rebuild fault costs	Additional anti climbing devices and security legal & safety
Overhead line scenarios		
During restoration of supplies for a HV overhead fault it is found that there is a defective pole mounted circuit breaker several poles away not related to initial fault. Since the defective circuit breaker is not related to the fault on the overhead line and its replacement is treated as asset replacement.	HV overhead fault costs	Pole mounted circuit breaker asset replacement
During restoration of supplies for a HV overhead fault it is found that there is a defective pole mounted circuit breaker preventing restoration of supplies. Both the overhead line fault and defective circuit breaker are treated as faults but require separate unplanned incidents to be created.	All fault costs	N/A
Pole termination fault. On inspection the pole itself is showing signs of deterioration but can still be used (i.e. the existing pole will need replacing at some point in the future). It is decided to replace the pole at the same time as repairing the termination (rather than attaching the termination to a poor condition pole and then coming back to replace the pole). Since the pole replacement is additional to the work undertaken to restore the termination to Pre-Fault Availability, it is classified as asset replacement.	Termination fault costs	Pole asset replacement
Plant scenarios		
HV switchgear fault requires full replacement of HV switchgear during unplanned IIS incident. In this case the repair work is completed before customers are restored. The timing of when the repair is completed is not dependent on the completion of an IIS incident. All the costs associated with the repair are reported as faults.	All fault costs	N/A

HV switchgear fault requires full replacement of HV switchgear but supplies restored prior to workIn this case the repair work is completed after customers are restored. The timing of when the repair is completed is not dependent on the completion of an IIS incident. All the costs associated with the repair should be booked to faults.	All fault costs	N/A
HV switchgear fault requires full replacement of HV switchgear but supplies restored prior to work – information existed prior to the fault that the equipment was in poor condition. The pre-existence of condition information is not relevant once the fault has occurred. All the costs should be booked to faults.	All fault costs	N/A
HV pole mounted transformer fault requires replacement of transformer during unplanned incident	All fault costs	N/A
HV pole mounted transformer fault requires full replacement of transformer to restore to Pre-Fault Availability but supplies restored prior to work. The timing of when the repair is completed is not dependent on the completion of an IIS incident. All the costs should be booked to faults.	All fault costs	N/A
A ground mounted transformer has faulted and cannot be re-energised so needs to be replaced. The transformer mounted LV cabinet is undamaged in the incident but is not compatible with the new transformer. In this case the work to restored the transformer to Pre Fault Availability is to replace both the transformer and the LV cabinet together with extending and re-terminating the HV and LV cables. This activity should be reported as faults.	All fault costs	N/A
A transformer has faulted and cannot be re-energised so needs to be replaced. The transformer mounted LV cabinet is undamaged in the incident but an assessment is made to indicate it is in poor condition. In this case the minimum fault repair is to replace the transformer, with this work being recorded as faults together with any associated HV cable required to allow the transformer change. The work to replace the LV cabinet should be reported as asset replacement and the associated LV cables as consequential.	Transformer and associated cables fault costs	LV cabinet asset replacement. Associated cables reported as Consequential Assets
A ground mounted transformer has faulted and cannot be re-energised. The fault has also damaged the LV cabinet beyond repair and this also needs to be replaced. The cost of replacing both of these assets together with any LV and HV cable should be reported as faults.	All fault costs	N/A

A faulty contact on an LV pillar or board has caused the loss of supplies to customer. It is found that the contact cannot be replaced within the existing pillar/board either due to a lack of spares or the board and contact is of an obsolete type. In this case, the solution is to replace the whole pillar or board but due to engineering reasons (compatibility of equipment) the transformer also needs to be replaced. The costs and volumes of all of this work, together with any associated cabling, should be reported as faults.	All fault costs	N/A
While this is not causing any loss of supply a link box is found to have a damaged or deteriorating contact which prevents its use for backfeeding. No fault has occurred so the volumes and costs of replacing this link box should be reported as asset replacement.	N/A	Asset replacement
A link box and its contacts are found to be in good condition, but backfeeding is not possible because the contacts for each way are too misaligned to allow the insertion of fuses or links. No fault has occurred so the costs and volumes of replacing this link box should be reported as asset replacement.	N/A	Asset replacement
EHV/132kV transformer :-		
There is a fault within a cable termination, that does not damage the rest of the transformer. The costs of remaking the termination, including any associated cable works should be allocated to faults.	All fault costs	N/A
Fault within a tap-changer, but there is no damage to the main transformer windings. The tap-changer is of a type that can be changed without the need for changing the transformer. The costs of repairing the tap-changer is allocated to faults. If at some later point (once it has been restored to Pre-Fault Availability) it is decided that the transformer needs to be replaced this would be allocated to asset replacement.	Tap changer fault costs	Subsequent Transformer change - asset replacement
Fault within a tap-changer, but the transformer is of a type where the whole transformer needs to be changed to restore it to Pre-Fault Availability. All the costs of replacing the transformer should be allocated to faults.	All fault costs	N/A
Fault within a transformer requiring the whole transformer to be changed. All the costs of replacing the transformer should be allocated to faults.	All fault costs	N/A