

Guidance

RIIO-ED2 Regulatory Instructions and Guidance: Annex B – Costs, Volumes and Revenue

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RIIO-ED2 is the price control for electricity distribution network operators (DNOs) from 1 April 2023 to 31 March 2028.

This document is part of the regulatory instructions and guidance (RIGs) for RIIO-ED2.

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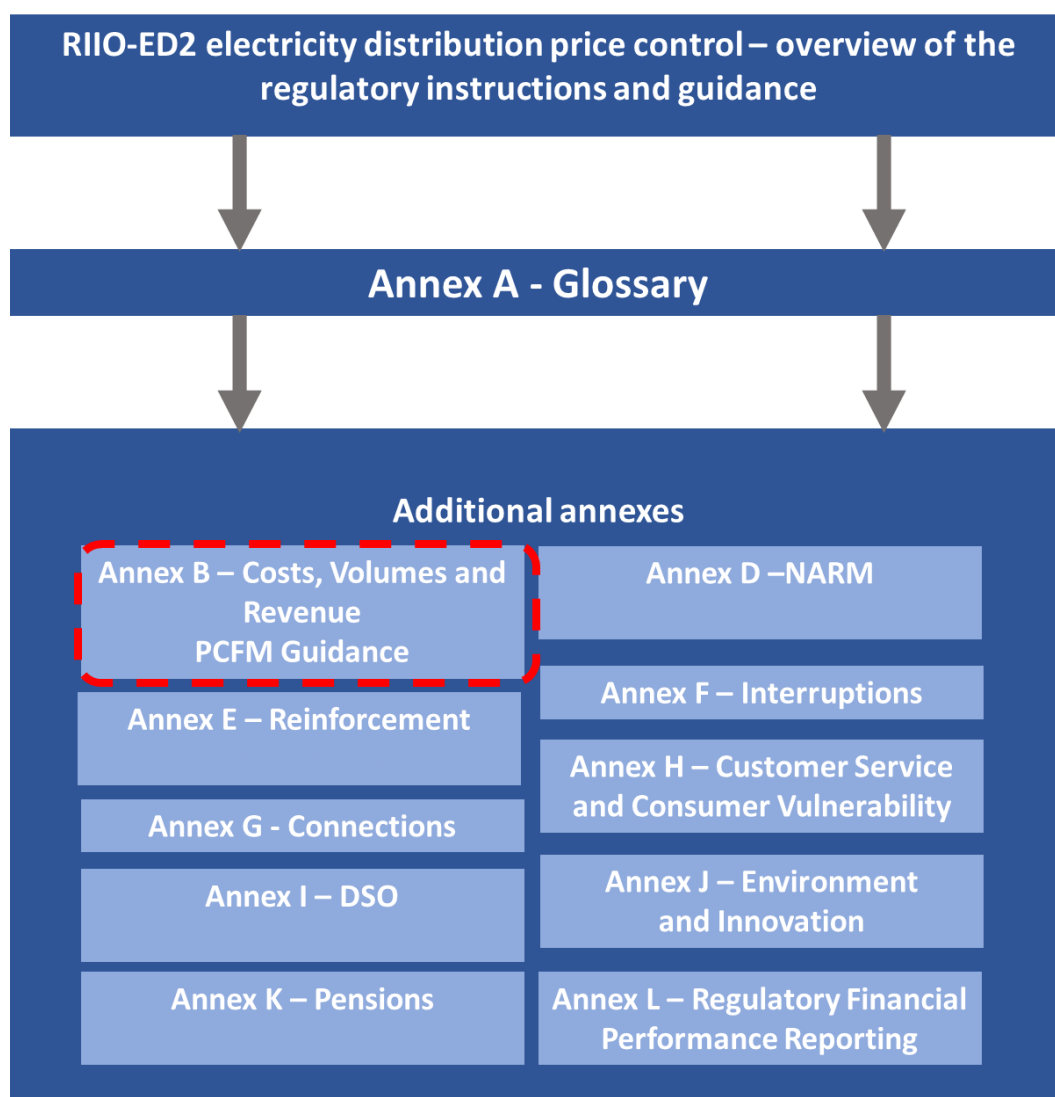
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1. Introduction

Scope of this document

- 1.1 This document is part of the regulatory instructions and guidance (RIGs) for RIIO-ED2. The term RIGs refers to a collection of documents - our instructions and guidance, and the reporting packs and commentaries the electricity distribution network operators (DNOs) have to fill out.
- 1.2 Figure 1.1 shows all the instructions and guidance documents for the RIIO-ED2 RIGs. This document, circled in Figure 1.1, is one of a series of annexes containing instructions and guidance. It provides DNOs with information on how to fill in the Costs, Volumes and Revenue Reporting Pack and Strategic Commentary that they are required to submit to us.

Figure 1.1: Map of the RIIO-ED2 instructions and guidance



1.1

This document should be read in conjunction with:

- the RIIO-ED2 – Overview of the Regulatory Instructions and Guidance document
- Annex A – Glossary for the regulatory instructions and guidance
- the associated Microsoft® Excel reporting pack named “Costs, Volumes and Revenue Reporting Pack”
- the associated commentary named “Strategic Commentary”.

1.2

The purpose of the information we collect in the Costs, Volumes and Revenue Reporting Pack is to monitor DNOs performance in RIIO-ED2 and to provide information that will inform the next Price Control review.

General instructions for completing the worksheets

- 1.3 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.

Costs

- 1.4 All costs are to be entered on a Cash Basis (see Annex A - Glossary) and exclusive of atypical items except where specifically instructed to report data.
- 1.5 For actual costs DNOs must provide data in the prices of the year under report (ie 2023-24 data should be in 2023-24 prices). Actual costs should be entered inclusive of real price effects (RPEs). Forecast costs should be reported in 2023-24 prices.

Allocation of indirects

- 1.3 The DNO must provide their methodology for allocating indirects in the Strategic Commentary submitted alongside the Costs, Volumes and Revenue Reporting Pack each year. Any changes to the methodology from the previous year should be highlighted.
- 1.4 For activities outside the price control and non-distribution activities the Indirect Costs associated with those activities will be allocated out from the indirects to those activities in the C1 matrix.
- 1.5 The reporting of indirect activity allocations will be entered as positive or negative as per the detailed instructions for worksheet C1 - Cost Matrix.

Cost Type split

- 1.6 The costs reported are differentiated into Cost Types. The following lists the Cost Types used in the Costs and Volumes Reporting Pack. Definitions of each of the Cost Types are in Annex A – Glossary:
- Labour
 - Pensions
 - Contractors
 - Materials
 - Wayleaves (including Easements/Servitudes)
 - Streetworks

- Other
- Related Party Margins
- Customer Contributions
- Cost Recoveries.

1.7 All numbers must be entered as positive, except Customer Contributions and Cost Recoveries, which should be entered as a negative.

Income

1.8 All income must be entered as a negative. The income must be that which is shown in the Profit and Loss Account (Income Statement), and itself would represent the income on a WIP basis.

2. Instructions for completing admin, PCFM and revenue worksheets

Cover Sheet

- 2.1 This worksheet requires the DNO to enter key data including the DNO name, the reporting year and the names of Related Parties.
- 2.2 DNOs should maintain the same naming convention for related parties across reporting periods where possible and ensure that the related parties are entered in the same cells across reporting periods to avoid confusion comparing different packs.
- 2.3 The DNOs should enter the name of any relevant Related Party in Rows 20-39. This will automatically link to the C1 matrices.

Template

- 2.4 This worksheet is a blank template version of the cost tabs. No input from the DNOs is required.

Changes Log

- 2.5 The Changes Log must be used by the DNOs to record any amendments (formulae or presentation) that are made to the reporting pack, including the date those changes were made. Ofgem will also record any changes made to the reporting pack in this worksheet.

Data Change Log

- 2.6 The DNO must record any changes that it has made to data that has previously been submitted and the date this change was made. A reason for the change should be included.

Navigation

- 2.7 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.

Check Sheet

- 2.8 This worksheet collects together the results of all the checks included within the reporting pack to provide an easy reference to determine whether there are any clear errors in the pack.
- 2.9 The DNO is not required to input any data on this worksheet.

PCFM Interface

- 2.10 The purpose of this worksheet is to pull together the PCFM Variable Values that are calculated within the Regulatory Reporting Packs (RRP) and needed for entry into the RIIO-ED2 Price Control Financial Model (PCFM) input sheets, for each licensee. The structure of this worksheet is aligned with the RIIO-ED2 PCFM input sheets to aid the licensee in populating the RIIO-ED2 PCFM for each dry run of the Annual Iteration Process, in accordance with the steps set out in the RIIO-ED2 Price Control Financial Handbook and the RIIO-ED2 PCFM Guidance.
- 2.11 As the name suggests, this sheet is an interface between the RRP and the PCFM and contains many of the values necessary to calculate the components of Allowed Revenue.¹
- 2.12 The values on the PCFM Interface sheet are linked to other sheets within the RRP that contain, where relevant, the underlying licence algebra used to calculate them. No input is required from the licensee.
- 2.13 The values on this worksheet are shown in £m and in a 2020/21 price base.

T1 - PCFM Totex Inputs 20-21

- 2.14 The purpose of this worksheet is to sum actual expenditure data under cap rate 1 summarised in T2 – PCFM Actual Totex and actual expenditure data under cap rate 2 summarised in T2 – PCFM Cap Rate 2 Totex. It also converts the data summarised in T2 – PCFM Inputs Nominal into 2020/21 prices. This information will be linked to the PCFM Interface sheet and must be input into the RIIO-ED2 PCFM in a 2020/21 price base. Conversion to 2020/21 prices uses information in worksheet I6 – Inflation.

¹ A number of PCFM Variable Values are contained within the PCFM itself or come from other source files.

T2 - PCFM Actual Totex

- 2.15 The purpose of this worksheet is to summarise the data that is submitted by DNOs in the RRP and used in the RIIO-ED2 PCFM. The information in this worksheet is in nominal prices.
- 2.16 Actual Totex Expenditure is derived from information submitted by DNOs in other worksheets of the reporting pack. It is split between seven categories, the PCFM Cost Type split. Actual non-load related capex – other requires cash proceeds from the sale of assets and scrap to be netted off. This calculation is in this worksheet. Actual controllable opex requires income from theft recovery, value added services (DRS 10) net income/costs Distribution Network Voltage Control Services revenue (DRS 16) net income/costs to be netted off. These calculations are in this worksheet.
- 2.17 Most data on this worksheet is linked to other worksheets and no direct input is required by the DNOs. The only exception is on Rows 74 and 82, concerning the PCFM Cost Type split for High Value Projects.

T3 - PCFM Forecast Totex

- 2.18 The purpose of this worksheet is for DNOs to provide a forecast of their expenditure plans on a Totex basis.
- 2.19 Reporting of forecast costs should be in 2020/21 prices and include the expected impact of real price effects but not the expected impact of economy-wide inflation.
- 2.20 Most data on this worksheet is linked to T5 – Forecasts C1. However, some direct input is required by DNOs, in the yellow input cells, concerning specific adjustments to Totex (sale of assets and scrap to be netted off, income from theft recovery, value added services (DRS 10) and Distribution Network Voltage Control Services revenue (DRS 16)) and specific analysis of Totex (on High value Projects, Related Party Margin and Atypicals).
- 2.21 It is expected that in the Strategic Commentary (Section A), DNOs provide detail of the basis of preparation of their forecast, the key assumptions used and the significant changes in their forecasts.

T4 – PCFM Cap Rate 2 Totex

- 2.22 The purpose of this worksheet is for DNOs to provide Capital Rate 2 totex values.

- 2.23 Reporting of forecast costs should be in 2020/21 prices and include the expected impact of real price effects but not the expected impact of economy-wide inflation.
- 2.24 It is expected that in the commentary, DNOs provide detail of the basis of preparation of their forecast, the key assumptions used and the significant changes in their forecasts.

T5 – Forecasts C1

- 2.25 The purpose of this worksheet is for DNOs to provide a forecast of their expenditure plans on a C1 basis. This forecast then feeds T3 – PCFM Forecast Totex.
- 2.26 For all regulatory years to date, this worksheet should be populated using actual cost data from worksheet S2 - Summary of C1s (Real). In order to do this the DNO must copy the formulae in T5 – Forecasts C1 Rows 16, 33, 50 and 67 into the rows that correspond to the new year under report.
- 2.27 For future years the DNO must input its forecast on a business as usual basis, equivalent to how it would report in C1.
- 2.28 Reporting of forecast costs should be in 2020-21 prices and include the expected impact of real price effects but not the expected impact of economy-wide inflation.
- 2.29 It is expected that in the Strategic Commentary (Section A), DNOs provide detail of the basis of preparation of their forecast, the key assumptions used and the significant changes in their forecasts.

R1 – Price Control Deliverables (PCD)

- 2.30 This worksheet contains PCDs. For all regulatory years to date, this worksheet should be populated using actual cost data from worksheet S2 - Summary of C1s (Real).
- 2.31 For future years the DNO must input its forecast on a business as usual basis, equivalent to how it would report in C1.
- 2.32 Reporting of forecast costs should be in 2020-21 prices and include the expected impact of real price effects but not the expected impact of economy-wide inflation.

2.33 It is expected that in the Strategic Commentary (Section A), DNOs provide detail of the basis of preparation of their forecast, the key assumptions used and the significant changes in their forecasts.

2.34 Further guidance is also contained in the RIIO-ED2 PCFM Guidance document.

R2 – Use It Or Lose it Allowances (UIOLI)

2.35 This worksheet contains UIOLI allowances. No inputs are required from DNOs in this worksheet.

2.36 Further guidance is also contained in the RIIO-ED2 PCFM Guidance document.

R3 – Re-openers

2.37 This table records information relating to all future Re-opener applications.

2.38 This table will be used by Ofgem for ongoing monitoring purposes and for sourcing the estimated value of the adjustment to baseline allowances which will feed into the relevant Re-opener PCFM Variable Value and will be reflected in its allowed revenue at the next Annual Iteration Process.

2.39 Licensees are to provide their best estimates of forecast costs using the best information available at the time and also provide the likely date of submission within the relevant application window.

2.40 The following fields should be answered in the relevant section of the strategic commentary accompanying the RIGs submissions:

- Trigger for application (eg change in legislation)
- Outline of needs case
- Methodology used to arrive at preferred option
- Outline of preferred option
- Evidence used to justify level of costs requested
- Any broader regulatory/policy issues.

2.41 Information should be brief and provide more detail for those applications expected in the next 12 months/regulatory year.

2.42 Further guidance is also contained in the RIIO-ED2 PCFM Guidance document.

R4 – Volume Drivers and Other

2.43 This worksheet calculates the value of the Totex allowance. It calculates the following:

- Total number of PCB Interventions (PCBV)

- Secondary Reinforcement (SRVD)
- Low Voltage Services (LVSVD)
- Carry-over Green Recovery Scheme (CGRS)
- Restoration Costs incurred as a result of a 1-in 20 Severe Weather Event (OTSW)
- Customer Support Costs incurred as a result of a 1-in 20 Severe Weather Event (OTSW)
- Indirects Scaler (IS)

R5 – Output Delivery Incentives (ODI)

2.44 This worksheet calculates the value of the ODI. It requires a mix of input data from DNOs from Revenue Link Tables in the annexes and data from the tab R5a – Output Delivery Incentives Link Table. Where input is required by the DNO it is denoted by yellow input cells and data inputs should match the licence term specified in Column C. It is the sum of:

- Time to Connect (TTC)
- Broad measure of customer service (BMCS)
- Interruptions Incentive Scheme (IQ)
- Major connections (MC)
- Consumer Vulnerability Incentive (CVI)
- Distribution System Operation (DSO)
- Dig, Fix and Go (ENWL only)
- Collaborative Streetworks (UKPN only)

2.45 The terms above are calculated in this worksheet through several calculations.

2.46 Further guidance is also contained in the RIIO-ED2 PCFM Guidance document.

R5a – Output Delivery Incentives (ODI) Link Table

2.47 This worksheet is for submitting the hardcoded values from the revenue link tables from annexes F, G, H and I.

2.48 The values are then linked into the R5 worksheet.

2.49 The onus is on the compiler to pick the correct year when pasting data from the packs into the R5a tab.

R6 – Pass-Through (PT)

2.50 This worksheet contains the Pass-Through Items revenue adjustment. It calculates the following:

- Licence fee payments (LF)
- Prescribed Rates (RB)
- Pass-through Transmission Connection Point Charges (TB)
- Smart Meter Communication Licensee Costs (SMC)
- Smart Meter Information Technology Costs (SMIT)
- Ring Fence Costs (RF)
- Supplier of Last Resort Net Costs (SLR)
- Valid Bad Debt Claims (IBDA)
- Allowance for Pension Scheme Established Deficit repair expenditure (EDE)
- Failed Supplier Recovered Costs (SRC)
- Shetland Extension Variable Energy Costs (SSEH) (SEC)
 - Cost of fuel Lerwick / Sullom Voe (LPSF)
 - Cost of environmental permits (EP)
 - Income from units purchased (SH)
- Assistance for high-cost distributors adjustment (SSEH) (HB)

2.51 These costs are mainly directly linked from C22 – Pass-Through. The exception is the allowance for Pension Scheme Established Deficit repair expenditure which requires a direct input. This value for the purpose of revenue setting is determined by Ofgem as part of the triennial PDAM process – see Chapter 7 of the PCFH.

R7 – Other Revenue Allowances (ORA)

2.52 This worksheet calculates the allowed Network Innovation Allowance (NIA), Carry-Over Network Innovation Allowance (CNIA) and connection guaranteed standards revenue adjustment. It requires the following inputs:

- Aggregate amount notified (AUM)
- Unrecoverable NIA (UNIA)
- Recovered amount (CNIAR)
- Price Index (PI)
- Payments in respect of failures to meet requirements of Connection Regulations (CGSPM)
- Maximum calculated revenue exposure (TCGSR)

2.53 Further guidance is also contained in the RIIO-ED2 PCFM Guidance document.

I3 – Licence Values

- 2.54 The purpose of this worksheet is to provide information that is in the licence and needed for calculations used to derive PCFM Variable Values. This information is used in the Revenue worksheets.
- 2.55 No input is required from DNOs.

I5 – Theft Recovery

- 2.56 The purpose of this worksheet is to report costs, volumes and revenues associated with Theft Recovery activities as set out in Special Condition 9.7 (Categories of Directly Remunerated Service) and related to the provisions of Standard Condition 49 (Electricity Distribution Losses Management Obligation and Distribution Losses Strategy) of the electricity distribution licence.
- 2.57 Reported Income from Theft Recovery (Rows 7 to 10) is automatically deducted from actual controllable opex (ACO) in worksheet T2 – PCFM Actual Totex. The purpose of this is to ensure that the reported income is shared with consumers via the Totex Incentive Mechanism (TIM).
- 2.58 This worksheet excludes the reporting of income from services provided under DRS12. Revenue protection services which should be reported under worksheet CV39 – Directly Remunerated Services.
- 2.59 The following terms are defined in Annex A - 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.
- 2.60 When reporting under:
- Recovery of Value of Electricity Taken (Row 8), 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.

- Recovery of Costs (Row 9), '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.
- 2.61 Total costs incurred in respect of relevant theft of electricity (Row 13) 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.
 - 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.
- 2.62 Additional data on Distribution Losses related activities is reported in worksheet E4 – Losses Snapshot of the Environment and Innovation Reporting Pack (Annex J).

I6 – Inflation

- 2.63 The purpose of this worksheet is to calculate the index needed to convert nominal costs into 2020/21 prices. This information is used in worksheets SI1 – Performance Summary and S2 – Summary of C1s (Real).
- 2.64 DNOs should copy the relevant consumer price inflation including owner occupiers housing costs (CPIH) and retail prices index (RPI) input values from the Ofgem PCFM inflation update in April of each Regulatory Year. .

3. Instructions for completing the costs worksheets

Purpose of costs worksheets

- 3.1 The purpose of the costs worksheets is to collect data that can be used to compare these items to allowances and to provide historic and forecast data for trend and benchmarking reviews. 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

- 3.2 This worksheet is automatically and manually populated from the sources set below and provides key summary information. It collects information on:
- Number of Customers
 - Network Length
 - Total Expenditure (TOTEX)
 - Quality of Service (unplanned and unweighted)
 - Unrestricted Domestic Tariff (adjusted for typical consumption)
 - Connections
- 3.3 Data on the number of customers is automatically populated from M14 Drivers row 9.
- 3.4 Data on Network Length is automatically populated from V1 – Total Asset Movements matrix.
- 3.5 Total Expenditure data is automatically populated from T1 PCFM Totex Inputs 20-21 .
- 3.6 RIIO-ED2 allowances should be populated following the last Annual Iteration Process to align with the last published PCFM. This should report the total of allowances across cap rate 1 and cap rate 2.
- 3.7 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 E14 to Q14
 - Customers Minutes Lost (including exceptional events): cells E15 to Q15
 - Customers Interrupted (excluding exceptional events): cells E16 to Q16
 - Customers Minutes Lost (excluding exceptional events): cells E17 to Q17

- 3.8 For the Domestic Aggregated Tariff, figures are adjusted for a 2900kWh typical domestic consumption value (not including the domestic customer rebate and assuming 365 days in a year) and entered manually by the licensee (20/21 price base).
- 3.9 For Connections, the average Time to Quote and Time to Connect data is to be populated by the licensee using the Connections Reporting Pack, tab "CC8 - TTC & TTQ" cells E5 (for time to quote) and E7 (for time to connect).

S1 – Summary of C1s

- 3.10 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.

S2 – Summary of C1s (Real)

- 3.11 This worksheet is automatically populated from the C1 matrices and I6 – Inflation. It provides the same detail as S1 but in real terms. The base year is shown at the top of the table.

S3 – C1 movements (Real)

- 3.12 This worksheet is automatically populated from worksheet S2 – Summary of C1s (Real) to provide year on year movements in costs.

C1 – cost matrix (2016 to 2028)

- 3.13 These worksheets (13 in total for years 2015/16 to 2027/28) allows 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 7 to 64)

- 3.14 Total Gross Costs (Row 37) and total net cost before allocations (Row 40) and the associated Cost Type split (Rows 8-15 and 38-39) are automatically populated from the relevant C and CV worksheets named in Row 4.

- 3.15 The only input cells are for Related Party Margins. The gross costs in Rows 16-35 and net costs in Rows 45-64 should be split by each relevant Related Party. The Related Party name is automatically linked from the cover sheet.
- 3.16 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.
- 3.17 The allocations as described below are necessary in order to calculate total net costs inside the price control under the correct activities in Row 86.

Allocation of income relating to Closely Associated Indirects (CAIs), Business Support Costs (BSCs) and Non-Operational Capex (Row 66).

- 3.18 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.
- 3.19 Therefore, in Row 66, 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 C66 within the Price Control must be entered as a positive number and the adjustment to the net CAIs in cells BD66:BF66, net BSCs in cells BH66:BJ66 and net Non-Operational Capex in cells AG66:AJ66 must be entered as a balancing negative number.
- 3.20 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 the RIIO-ED2 baseline net cost allowances for network investment, CAIs, BSCs and Non-Operational Capex.
- 3.21 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 68 to 75)

- 3.22 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-ED2, these indirect costs associated with work outside the Price Control must be reallocated.
- 3.23 In Rows 68 to 75, 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 BD68:BF75), BSCs (cells BH68:BJ75) and Non-Operational Capex (cells AG68:AJ75) should be entered as negative numbers. The adjustments to Connections outside the Price Control should be entered as balancing positive numbers (cells BY68:BY75).

Indirect Activity Allocations to Non Distribution (excluding Connections) (Rows 77 to 84)

- 3.24 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.
- 3.25 In Rows 77 to 84, 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 BD77:BF84), BSCs (cells BH77:BJ84) and Non-Operational Capex (cells AG77:AJ84) should be entered as negative numbers. The adjustments to other activities outside the Price Control should be entered as balancing positive numbers (cells BT77:CE84 excluding columns BY, CB and CE).

Memo: Indirect Activity Allocations (Rows 90 to 114)

- 3.26 There are three memo items in C1 to reallocated Indirect costs from the indirect activity to their associated direct activity. These are for:
- High Value Projects RIIO-ED2 (Rows 90 to 97)
 - West Coast of Cumbria (Rows 99 to 106).
 - Connections Inside the Price Control (Rows 108 to 115).

- 3.27 This will provide total costs (directs and indirects) for each of the above. For High Value Projects RIIO-ED2 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.
- 3.28 The adjustments to High Value Projects RIIO-ED2, West Coast of Cumbria and Connections Inside the Price Control should be entered as positive numbers. The adjustment to the corresponding Rows in CAIs, Business and Non-Operational Capex should be entered as balancing negative numbers.

Overview

Cost Type split

- 3.29 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 9 to 16). This Cost Type data feeds into the worksheets C1 matrices.
- 3.30 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.
- 3.31 The check cells in Row 22 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

- 3.32 Income for Customer Contributions (Row 18) and Cost Recoveries (Row 19) should be entered as a negative number.
- 3.33 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

3.34 Total gross costs (Row 17) and total net costs (Row 20) are automatically calculated in each C table. These costs feed into the worksheets C1 matrices.

C2 – Connections Inside the Price Control

3.35 This worksheet is for the input of Connections cost data. The cost data reported in this table relates to Connections costs inside the Price Control only, which comprises the following which are defined in Annex A - Glossary:

- DPCR4 Connections Project
- Element of Connections that is subject to the apportionment rules - Customer Funded
- Element of Connections that is subject to the apportionment rules - DUoS Funded.
- The gross costs and Customer Contributions of the activities listed should be entered.

3.36 Total gross costs should be reported by Cost Type to input to C1. Costs reported in the relevant years' column in this table in the Costs and Volumes Reporting Pack must match the total costs inside the Price Control reported in column K of table CR12 in the relevant annual Connections Reporting Pack.

C3 – Physical Security

3.37 This worksheet provides information on expenditure and activity on physical security directly related to a change in the status of sites that are classified as Critical National Infrastructure (CNI) or a change in Government guidance relating to physical site security. Expenditure should be reported for costs which are necessarily undertaken to meet Government guidance to enhance the physical security of a DNO's network, including the provision of necessary communication sites and associated infrastructure.

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

3.39 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 Government guidance on Physical Security should not be reported in this worksheet.

3.40 The worksheet contains two tables. In the first table, total gross costs should be recorded and split by relevant Cost Type.

- 3.41 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.
- 3.42 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 RIGs or accompanying commentary.
- 3.43 The activities for which expenditure should be reported comprise the following which are defined in Annex A - Glossary:
- Post-Delivery Support Agreements (PDSA)
 - Direct Labour
 - Data Communications
 - Other Operating Costs
 - Enhanced Physical Security (Capex).
- 3.44 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16) and total income should be entered in Rows 18 and 19.
- 3.45 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 98.

C4 – IT & Telecoms (Non-Operational)

- 3.46 This worksheet collects IT & Telecoms (Non-Operational) cost data.
- 3.47 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in Annex A – Glossary, under the term IT & Telecoms (Non-Operational):
- Hardware and infrastructure costs
 - Application software development costs.
- 3.48 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16) and total income should be entered in Rows 18 and 19.
- 3.49 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 28.
- 3.50 At the bottom of this worksheet, there are two memo tables included in Rows 30 to 33 to capture any costs that are defined as Cyber Resilience OT, and rows 35 to 38 for Cyber Resilience IT. This information should align with the cyber PCD reports.

- 3.51 Rows 40 to 44 to report costs in relation to DSO Cost categories in these memo tables are as discussed above. The DSO Cost categories will be included in the M19 - DSO Memo table.
- 3.52 At the bottom of the worksheet, there is a memo table included to capture costs in relation to Data & Digitalisation (Rows 46 to 47). These costs will be included in the M29 – D&D Memo table.

C5 – Property (Non-Operational)

- 3.53 This worksheet collects all Non-Operational Property costs by Cost Type only. The key term for this worksheet, defined in Annex A - Glossary, is:
- Property (Non-Operational).
- 3.54 Further disaggregation is required by NGED to reflect additional reporting for the NGED specific evaluative PCD 'New Depots'. NGED only should report the annual costs incurred before and after NPCA on each of the 3 depots which comprise the PCD. Commentary on the status of the PCD is required in the Strategic Commentary for table C5, in line with the requirements in document "Price Control Deliverable Reporting Requirements and Methodology Document: Version 3", paras 6.1-6.3

C6 – Vehicles and Transport (Non-Operational)

- 3.55 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 Annex A – Glossary, is:
- Vehicles and Transport (Non- Operational).
- 3.56 At the bottom of this worksheet there is a memo table starting at Row 22 to capture asset volumes for vehicles and generators of different categories. These assets should be reported as the total (not additional) number of assets at 31/3 of every year.

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

- 3.57 This worksheet collects all Small Tools, Equipment, Plant and Machinery (Non Operational) costs by Cost Type only. No further disaggregation is required.
- 3.58 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)

- 3.59 This worksheet collects the costs for Remote Location Generation (Opex).
- 3.60 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.
- 3.61 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16) and total income should be entered in Rows 18 and 19.
- 3.62 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 29.

C9 – Core CAI

- 3.63 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
- 3.64 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in Annex A - Glossary:
- Network Design and Engineering
 - Project Management
 - Engineering Management and Clerical Support (EMCS)
 - System Mapping
 - Network Policy
 - Call Centre
 - Control Centre
 - Stores
- 3.65 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16) and total income should be entered in Rows 18 and 19.
- 3.66 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 35.
- 3.67 At the bottom of this worksheet, there is a memo table included in rows 45 to 56 to capture any costs in relation to DSO. Cost categories in the memo table are as shown above. These costs are included in the M19 - DSO Memo table.

- 3.68 A further memo table has also been included in rows 59 to 70 to capture costs in relation to Data & Digitalisation. Cost categories in this memo table are as shown above. These costs are included in M29 – D&D Memo table.

C10 – Wayleaves (CAI)

- 3.69 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.
- 3.70 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in Annex A - Glossary:
- Wayleave Payments
 - Wayleaves and Easements/Servitudes Admin Costs
 - Substation Rents.
- 3.71 Costs reported on this table exclude Wayleaves (inc Easements/Servitudes) costs associated with network investment which should be reported on the appropriate table.
- 3.72 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16) and total income should be entered in Rows 18 and 19.
- 3.73 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 29.

C11 – Vehicles and Transport (CAI)

- 3.74 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 and asset volumes reported in Rows 23 to 36. ..
- 3.75 The key term for this worksheet, defined in Annex A - Glossary, is:
- Vehicles and Transport (CAI).
- 3.76 At the bottom of this worksheet there is a memo table starting at row 22 to capture asset volumes for vehicles and generators of different categories. These assets should be reported as the total (not additional) number of assets at 31/3 of every year for vehicles that have been leased.

C12 – Core Business Support

- 3.77 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.

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

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

3.79 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). Income should be entered as a negative in Rows 18 and 19.

3.80 The total gross costs in Row 17 should reconcile with the total gross costs by category type in Row 32.

3.81 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..

3.82 A further memo table has also been included in Row 53 to capture costs in relation to Data & Digitalisation. These costs will be included in the M29 – D&D Memo table.

3.83 For the DSO and data & Digitalisation memos, we have added categories of expenditure that were not reported in RIIO-ED1; we have now added these should they become applicable to a DNO through RIIO-ED2. Please leave any categories that remain not applicable to a DNO blank.

C13 – IT&T (Business Support)

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

3.85 Gross costs should be reported by Cost Type only.

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

- IT & Telecoms (Business Support).

3.87 At the bottom of this worksheet, there are memo rows to capture any ongoing support costs for Cyber Resilience, DSO activities and costs in relation to Data &

Digitalisation. For rows relating to cyber resilience IT and OT, these should align with the cyber PCD reports.

C14 – Property Management (Business Support)

- 3.88 This worksheet collects costs for Property Management expenditure and related income by year to feed into the C1 table.
- 3.89 Gross costs should be reported by Cost Type only. No further disaggregation is required.
- 3.90 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.
- 3.91 The key term for this worksheet, defined in Annex A – Glossary, is:
- Property Management (Business Support).

C15a – Atypicals Inside Totex, C15b – Atypicals Excluded Totex, C15c – Atypicals Non PC

- 3.92 These worksheets collect data on atypical events, excluding severe weather events for each Cost Type category.
- 3.93 Atypical events are those events as defined in Annex A - Glossary and other one-off events that DNOs may consider falls under the definition of Atypical. DNOs should discuss with Ofgem where they may be ambiguity as to whether these are included. A clear explanation should be provided in the Strategic Commentary.
- 3.94 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).
- 3.95 There are three different tabs:
- C15a – Atypicals Inside Totex
 - C15b – Atypicals Excluded Totex

- C15c – Atypicals Non PC

C16 – Smart Meters Outside Price Control

- 3.96 This worksheet is designed to collect the elective smart meter data costs for all years of RIIO-ED1 and RIIO-ED2 .
- 3.97 Gross costs should be reported by Cost Type and for the following cost categories, which are defined in Annex A - Glossary:
- Elective Communication Services
 - Smart Meter Communication Licensee Costs.
- 3.98 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16) and total income should be entered in Rows 18 and 19.
- 3.99 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 28.

C17 – Legacy Meters

- 3.100 This worksheet collects costs and revenue related to legacy metering activity.
- 3.101 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).
- 3.102 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16) and total income should be entered in Rows 18 and 19.
- 3.103 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 28.

C18 – De Minimis

- 3.104 Costs and revenue for De Minimis business activities, by activity, are reported in this worksheet.
- 3.105 In the table “By Category” 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.
- 3.106 The key term for this worksheet, defined in Annex A – Glossary, is:
- De Minimis Business.

C19 – Other Consented Activity

- 3.107 Costs and revenue for Other Consented Activities, by activity, are reported in this worksheet.
- 3.108 In the table “By Category” 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.
- 3.109 The key term for this worksheet, defined in Annex A – Glossary, is:
- Other Consented Activity.

C20 – Connections Outside Price Control

- 3.110 This worksheet is for the input of Connections cost data to C1. The cost data reported in this table relates to Connections costs outside the Price Control only comprising the following, which are defined in Annex A - Glossary:
- Metered Connections Projects
 - Sole Use Expenditure on DG Connections projects
 - Unmetered Connections Projects.
- 3.111 The gross costs and customer contributions of the activities listed should be entered.
- 3.112 Total gross costs are reported by Cost Type only to input to C1. Costs reported in the relevant years’ column in this table in the Costs, Volumes and Revenue Reporting Pack must match the total costs inside the Price Control reported in column Q of table CC1 in the relevant annual Connections Reporting Pack.

C21 – Out of Area Networks

- 3.113 Costs and revenue for Out of Area Networks are reported in this worksheet.
- 3.114 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.
- 3.115 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16) and total income should be entered in Rows 18 and 19.

3.116 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 29.

C22 – Pass Through

3.117 Costs incurred on Pass-Through items provided for under SpC 6.1 (Pass-through expenditure) are reported in this worksheet. This information is necessary to calculate Allowed Distribution Network Revenue.

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

- Licence Fee Payments
- Prescribed Rates
- Pass-Through Transmission Connection Point Charges Incurred
- Smart Meter Communication Licensee Costs
- Smart Meter Information Technology Costs
- Ring Fence Costs incurred
- Supplier of Last Resort Net Costs
- Eligible Use of System Bad Debt Costs Incurred
- Recovered Bad Debt
- Valid Bad Debt claim
- Pensions Established Deficit Repair Payments
- Shetland Variable Energy Costs incurred (SSEH only)
- Shetland Variable Energy Costs (SSEH only)
- Shetland New Energy Solution Residual costs incurred (SSEH only)

3.119 No Cost Type split is required.

3.120 In the table “By category” DNOs should report costs for each Pass-Through item listed above, except Shetland Variable Energy Costs, Supplier of Last Resort Net Costs and Eligible Use of System Bad Debt costs incurred. These should be reported under the subcategory tables “Components of the Shetland variable energy costs”, “Components of Supplier of Last Resort” and “Components of Eligible UoS Bad Debt costs incurred” respectively.

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

C23 – Other Non Activity Based Costs (NABC)

3.122 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.

3.123 Key terms for 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
- 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.

3.124 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

3.125 In Rows 41-61, 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 36 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 T2 – PCFM Totex Inputs Nominal, as they are required to be netted off Totex.

3.126 All income/proceeds must be reported as a negative number.

C24 – Related Party Margin

- 3.127 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.
- 3.128 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-ED2 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.
- 3.129 If external data is not provided, then the revenue Related Party margin adjustment will automatically exclude the entire margin for that Related Party.
- 3.130 The table allows DNOs to report data for up to twenty related parties that transact with the DNO. Where the DNO transacts with more than twenty 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.
- 3.131 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 E to Q 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 E to Q the margin – a positive reflects that the Related Party is making a profit, while a negative indicates a loss.
- 3.132 The Related Party Margin impacting on the DNO directly in column E to Q (for 2016-2028 reporting years) will be automatically populated from the relevant year's analysis per Related Party, from Row 48 and below.

3.133 Using this Total Margin per Related Party block, in columns U to AA for 2024, and then ongoing for future years, there is a further split of this margin by PCFM Cost Type, namely:

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

3.134 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.

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

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

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

3.137 Values in the manual input column 'RP Margin included in indirects allocated outside of Totex PC activities' (AP for 2024) 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)

3.138 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.

3.139 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 their Ex Ante Allowance.

3.140 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

3.141 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).

3.142 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 the inclusion of these memo items are for information only.

4. Instructions for completing the cost and volume worksheets

Purpose of cost and volume worksheets

- 4.1 The data in the CV tables can be used to compare these items to allowances and to provide historic and forecast data for trend and benchmarking reviews. 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

- 4.2 As noted above, all CV tables must be differentiated into Cost Types. The DNO must enter total gross costs by Cost Type (Rows 9-16). This Cost Type data feeds into the C1 matrices.

Customer Contributions and Cost Recoveries

- 4.3 Income for customer contributions (Row 18) and cost recoveries (Row 19) should be entered as a negative number.
- 4.4 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

- 4.5 Total gross costs (Row 17) and total net costs (Row 20) are automatically calculated in each CV table. These costs feed into the C1 matrices.

Category type data

- 4.6 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.
- 4.7 The check cells in Row 22 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 22 will ensure that in the input for total net costs by Cost Type and total net costs by category type reconcile.

Asset base

4.8 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 28-132). 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
- CV2a – Off Gas Grid PCD (UKPN only)
- CV3 – Fault Level Reinforcement
- CV4 – New Transmission Capacity Charges
- CV5 – Diversions
- CV6 – Diversions Rail Electrification
- CV7 – Asset Replacement
- CV7a – Asset Replacement NARM
- CV7b – Asset Replacement Non NARM
- CV7c – Asset Replacement Civils Driven
- CV8 – Refurbishment Non NARM
- CV9 – Refurbishment NARM
- CV12 – Electricity System Restoration
- CV13 – BT21CN
- 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
- CV23a to e – High Value Projects RIIO-ED1
- CV24 – High Value Projects DPCR5
- CV25a to e – High Value Projects RIIO-ED2
- CV26 – Faults
- CV27 – Severe Weather 1-in-20

- CV28 – Occurrences Not Incentivised (ONIs)
- CV31 – Repairs and Maintenance
- CV32 – Dismantlement
- CV34 – Smart Meter Intervention
- CV36 – Network Innovation Allowance (NIA)
- CV37 – Network Innovation Competition (NIC)
- CV38 – Low Carbon Network (LCN) Fund
- CV39 – Directly Remunerated Services (DRS)
- CV40 – SIF
- CV42 - West Coast of Cumbria (ENWL only)
- CV43 – Smart Street (ENWL only)

CV1 – Primary Reinforcement

- 4.9 This worksheet collects reinforcement activity undertaken to resolve capacity constraints on the on the Primary Network (33kV and above).
- 4.10 DNOs must report work undertaken to manage capacity constraints (including keeping voltage within statutory limits) affecting either an individual substation or substation group. Within these categories, reporting must be disaggregated between reinforcement for n-1 or n-2 schemes.
- 4.11 Reporting has changed at RIIO-ED2 to capture gross MVA capacity additions and disposals, rather than net capacity released, associated with reinforcement activity undertaken to resolve capacity constraints on the on the Primary Network (33kV and above). The gross capacity added should reflect the new firm capacity of the substation/group after intervention. The disposal should reflect the firm capacity of the substation/group before reinforcement. It is not necessary to restate previously reported (pre-ED2) net capacity released, on a gross capacity additions & disposals basis.
- 4.12 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 gross capacity added at time of energisation (in MVA) by three types of intervention. Asset disposals should also be recorded where relevant.:
- 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 paragraphs below)).

- 4.13 The cost and capacity of capacity additions and disposals 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 additions should be the amount associated with each solution. For example, a total scheme may cost £10m and add 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 should be calculated as set out in the guidance to the Innovative Solutions worksheet.
- 4.14 The costs and gross MVA capacity of capacity additions and disposals 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, eg 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).
- 4.15 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.
- 4.16 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.
- 4.17 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 on the Primary Network that may otherwise require a Conventional Solution or other Innovative Solution to provide the necessary capacity.
- 4.18 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconcile with total gross costs from all category types.

- 4.19 Costs and volumes for the Green Recovery Scheme should not be reported alongside all other reinforcement costs and volumes. DNOs should separately report costs and volumes associated with the Green Recovery Scheme in the specific Green Recovery Scheme memo table.

CV2 – Secondary Reinforcement

- 4.20 This worksheet collects reinforcement activity on the Secondary Network (LV and HV). This information will be used to track actual costs and volumes against the Price Control settlement, calculate SRVDt and LVSVDt and to provide data for the monitoring of the secondary reinforcement volume driver and the low voltage services volume driver. DNOs must report work undertaken to manage capacity constraints affecting substations and/or circuits.
- 4.21 For capacity constraints affecting a substation, the table is disaggregated between reinforcement done at pole mounted and ground mounted substations. Net capacity released for the purpose of the SRVDt monitoring metrics will be calculated as the difference of the gross capacity added and disposed. The DNO must provide the gross capacity added by the work at time of energisation (in MVA). Both Conventional and Innovative Solutions should be included. For Innovative Solutions where a firm capacity is not available, this should be calculated as set out in the guidance to the Innovative Solutions worksheet. In the event that there is an asset disposal as part of the solution to address the capacity constraint, the disposal should be reported against the asset type that has been disposed.
- 4.22 For capacity constraints affecting a circuit, the table is disaggregated between LV and HV network, and OHL and UG asset type. The DNO must provide the gross circuit length added (in km). Both Conventional and Innovative Solutions should be included. In the event that there is an asset disposal as part of the solution to address the capacity constraint, the disposal should be reported against the asset type that has been disposed
- 4.23 Where capacity constraints affect both a circuit(s) and transformer(s), the DNO must provide the costs, volumes (MVA or km as required) and disposals (where appropriate) relating to the substations and circuits separately, in the relevant tables.
- 4.24 For situations where an overhead line is reinforced using an overhead line solution all the costs and lengths shall be reported against overhead. Similarly, where an underground cable is reinforced using an underground cable solution, all the costs and lengths shall be reported against underground. However, where

an overhead line is reinforced using an underground cable solution the reporting shall be:

- Costs reported against underground
- Length added reported against underground
- Length disposed reported against overhead.

Where a mix of overhead line and underground cable is reinforced using a different mix of overhead line and underground cable the reporting shall be:

- Costs associated with the installation of overhead line reported against overhead;
- Costs associated with the installation of underground cable reported against underground;
- Costs for disposal of existing assets should be reported against the installed asset as appropriate;
- Length of overhead line added reported against overhead
- Length of underground cable added reported against underground
- Length of overhead line disposed reported against overhead.
- Length of underground cable disposed reported against underground.

- 4.25 There is a table for reporting "Other reinforcement activities". 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.
- 4.26 DNOs should use the table entitled "Flexibility" to capture the total 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 to provide the necessary capacity.
- 4.27 DNOs should report the cost and volumes of activities relating to Proactive Service Reinforcement and Reactive Service Reinforcement. The total number of Unlooped Properties, as a result of Proactive Service Reinforcement and Reactive Service Reinforcement, should be recorded in the memo table.
- 4.28 DNOs should report the number of interventions (transformers added and disposed), costs, gross capacity added in MVA and gross capacity disposed in MVA for Pole Mounted and Ground Mounted Transformers , against utilisation

bands in the memo tables titled 'Interventions - Pole Mounted Transformers Capacity Released' and 'Interventions - Ground Mounted Transformers Capacity Released'. The data should be reported in the substation type after intervention and, against the forecast Utilisation Band prior to reinforcement (with the forecast representing utilisation at the end of the next Regulatory Year, ie up to 31 March 2025 for the RRP submission at the end of the Regulatory Year ending 31 March 2024).

- 4.29 In the event that there is a transformer disposal as part of the intervention, the disposal should be reported in the same row as the transformer/gross capacity addition. Where a ground mounted transformer is installed instead of a pole mounted transformer, all the details about interventions, costs, capacity added, and capacity disposed shall be reported against ground mounted transformers.
- 4.30 The following example provides guidance on how to treat dissimilar transformer types and utilisation forecasts. A pole mounted transformer is utilised at 95% at the end of March 2024 but is forecast to be loaded at 103% at the end of March 2025. An intervention is carried out during the regulatory year up to the end of March 2024 which replaces the 0.2MVA pole mounted transformer with a 0.5MVA ground mounted transformer. This will result in the following reporting:
- All activity is reported against Ground Mounted Transformers
 - All activity is reported against the 100-120% utilisation band (to reflect the forecast utilisation)
 - All activity is reported against 2024
 - A count of one intervention addition is included (for the addition of the 0.5MVA ground mounted transformer)
 - A count of one intervention disposal is included (for the disposal of the 0.2MVA pole mounted transformer)
 - The costs of the work are recorded
 - 0.5MVA is reported against capacity added
 - 0.2MVA is reported against capacity disposed.
- 4.31 DNOs are required to report the total number of HV/LV transformers against each of the network Utilisation Bands for pole mounted and ground mounted transformers separately in the memo tables titled 'Network Utilisation - Pole Mounted Transformers' and 'Network Utilisation - Ground Mounted Transformers'. In these tables, all transformers should be reported (not only those where an

intervention has taken place) and transformers, in commission as at 31 March of the Regulatory Year being reported, should be reported against the Utilisation Band that best reflects their utilisation in the relevant Regulatory Year being reported.

- 4.32 For example: if a 0.2MVA pole mounted transformer utilised at 95% is replaced by a 0.5MVA ground mounted transformer during the Regulatory Year being reported, the pole mounted transformer does not exist at the end of the Regulatory Year. The utilisation of the ground mounted transformer at the end of the Regulatory Year is 38% ($0.95 \times 200 / 500 = 0.38$). This requires a count of one to be included in the 20-40% utilisation band for ground mounted transformers.
- 4.33 DNOs are required to complete memo tables relating to LV monitoring. Licensees are required to calculate their (i) year-on-year annual peak demand growth and (ii) year-on-year annual electricity consumption growth measured by LV Monitoring, where LV Monitoring means the use of direct measurement, or advanced analytics, to allow for real time measurement and assessment of network conditions on the licensee's LV network, as defined in the RIIO-ED2 licence. In each case, where LV Monitoring is being deployed, the year-on-year percentage growth should be calculated in accordance with the LRE Volume Drivers Governance Document and should be reported against the relevant growth band.
- 4.34 Year on year growth will require data for two complete and consecutive Regulatory Years. Where LV monitoring is being undertaken at any given transformer but for less than 2 years, Licensees should report these data points as 'Monitored sites with insufficient data'. DNOs should complete these tables for all transformers where LV monitoring has been installed. Transformers where LV Monitoring has been in place for > 2 years but where data cannot be retrieved or where data is anomalous, data should be recorded in the row titled 'Monitored sites with sufficient data but bad data / nil return'.
- 4.35 Costs and volumes for the Green Recovery Scheme should not be reported alongside all other reinforcement costs and volumes. DNOs should separately report costs and volumes associated with the Green Recovery Scheme in the specific Green Recovery Scheme memo table.

CV2a – Off Gas Grid PCD

- 4.36 This worksheet collects details anticipatory investment under the Off-Gas Grid PCD. It applies to UKPN only.

- 4.37 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconcile with total gross costs from all category types.

CV3 – Fault Level Reinforcement

- 4.38 This worksheet collects details of Fault Level Reinforcement activity on the distribution network.
- 4.39 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).
- 4.40 DNOs should only use the table “Other Reinforcement 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.
- 4.41 During RIIO-ED2 it is anticipated that DNOs will continue to 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.
- 4.42 Typical conventional solutions are:
- Replacing the switchgear
 - Increasing the size of cables
 - Replacing transformers with higher impedance units.
- 4.43 Anticipated innovative solutions are:
- Fault current limiting devices
 - Real-time management of fault level.
- 4.44 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.
- 4.45 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.

- 4.46 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconcile with total gross costs from all category types.

Technical Details

- 4.47 Technical data about the number of switchboards affected by fault level issues allows Ofgem to monitor the required levels of Fault Level Reinforcement Schemes.
- 4.48 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)

- 4.49 In RIIO-ED2, DNOs have been provided with ex ante allowances for projects that will 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.
- 4.50 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.
- 4.51 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 Annex A - Glossary:
- TCPs Reinforced - Licensee Requirement
 - TCPs New - Licensee Requirement.
- 4.52 The total charges payable to the transmission licensee should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in

Row 22 is to ensure the total gross costs in Row 17 reconcile with total gross costs by category type in Row 138.

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

CV5 - Diversions

- 4.54 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).

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

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

- 4.57 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 Annex A - Glossary:

- Conversion of wayleaves to easements, easements, injurious affection
- Diversions due to Wayleave Terminations etc.
- Diversions for Highways (funded as detailed in NRSWA).

- 4.58 For the purposes of this worksheet, volumes must only be recorded once the claim is settled or the Diversion completed. In the case of a settled injurious affection claim representing multiple customers, the reported volume of injurious affection claims settled should be based on the number of customers included in the claim.

- 4.59 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.

- 4.60 The unit cost tables on the right of the worksheet (columns BQ to CE) are formula driven from the cost and volume data entered. They calculate the annual unit cost.
- 4.61 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconcile with total gross costs by category type in Rows 140, 147 and 154.
- 4.62 This worksheet requires the reporting of asset additions and disposals as a result of Diversion programmes.
- 4.63 DNOs should provide a breakdown of ED2 costs and volumes reported at Rows 137 to 140 for Conversion of wayleaves to easements, easements and injurious affection in the memo tables for Injurious affection claims settled (Rows 165 to 168) and Wayleaves and Easements (Rows 172 to 174). Input cells have been provided for the RIIO-ED1 period so that data can be reported if available, but RIIO-ED1 data is not required to be reported. The purpose of the check cell in Row 177 is to ensure the costs and volumes reported reconcile with the total costs and volumes for Conversion of wayleaves to easements, easements and injurious affection in Row 145.
- 4.64 DNOs should also report the volume of injurious affection claims received but not yet settled (or that do not yet have a new agreement in place) in the Injurious affection claims received memo table at Rows 157 to 160. Claim volumes should be reported in all years that they are in existence until the year of settlement (not just reported once in the year of receipt). In the case of a claim representing multiple customers, the reported volume of injurious affection claims received should be based on the number of customers included in the claim.
- 4.65 Once an injurious affection claim has been settled or dismissed it should no longer be reported in the Injurious affection claims received memo table. If the claim has been settled with an injurious affection payment it should be reported in the Injurious affection claims settled memo table (Rows 164 to 167) for that year.

CV6 – Diversions (Rail Electrification)

- 4.66 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).

- 4.67 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.
- 4.68 The sum of CV6 Diversions for rail electrification and CV6 Diversion should amount to the total overall expenditure and workload for diversionary activities funded by the DNO.
- 4.69 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.
- 4.70 The check cell in Row 214 tests if these two sections reconcile.
- 4.71 Both sections of the worksheet contain the following activity categories, which are defined in Annex A - Glossary:
- Diversions – Wayleave Terminations
 - Diversions – Highways (funded as detailed in NRSWA).
- 4.72 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.
- 4.73 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.
- 4.74 For the purposes of this worksheet, volumes must only be recorded once the diversion is completed.
- 4.75 The unit cost tables on the right of the worksheet (columns BQ to CE) are formula driven from the cost and volume data entered. They calculate the annual unit cost.
- 4.76 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 149.

4.77 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

4.78 There are four Asset Replacement worksheets:

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

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

4.80 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.

4.81 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.

4.82 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).

4.83 There are two types of Replacement activity:

- Asset Replacement NARM: Asset Replacement interventions to asset types included in the NARM.

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

CV7 – Asset Replacement

4.85 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.

- 4.86 The two activities recorded within this worksheet, defined in Annex A – Glossary, are:
- Asset Replacement
 - Civil Works Driven by Asset Replacement.
- 4.87 For Asset Replacement reporting, DNOs should report on asset additions (cells U28:AG132 in CV7a – Asset Replacement NARM and CV7b – Asset Replacement Non NARM) and disposals (cells AK28:AY133 in CV7a – Asset Replacement NARM and CV7b – Asset Replacement Non NARM). 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.
- 4.88 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.
- 4.89 The unit cost tables on the right of the worksheet (columns BQ to CE) are formula driven from the cost and volume data entered against plant assets. They calculate the annual unit cost.
- 4.90 No civil works costs or volumes are to be entered in the asset replacement tables.
- 4.91 The costs of acquiring and the credits associated with utilising Strategic Spares are to be entered on to row 136 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.
- 4.92 There are two treatments to be considered when recording the activities relating to Strategic Spares:
- **Treatment on the acquisition of Strategic Spares:**
 - The costs of acquisition should be recorded as a positive value within the year of purchase on row 136 of Table CV7b.
 - 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).

- 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:**

- 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 136 of Table CV7b (any subsequent replenishment would be treated as an acquisition (as above)).
- 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').
- 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).
- 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).

4.93 For Civils Works Driven by Asset Replacement, only costs (no volumes) are summarised (Rows 139 to 144) by the six categories listed.

4.94 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). This Cost Type split should be inclusive of both asset replacement and Civil Works Driven by Asset Replacement.

4.95 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 147.

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

- Steel mast memo
- Asset Replacement memo.

4.97 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.

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

CV7a – Asset Replacement NARM

- 4.99 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.
- 4.100 For Asset Replacement reporting, DNOs should report on asset additions (cells U28:AG132) and disposals (cells AK28:AW132) 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.
- 4.101 The unit cost tables on the right of the worksheet (columns BQ to CE) are formula driven from the cost and volume data entered against plant assets. They calculate the annual unit cost.
- 4.102 No civil works costs or volumes are to be entered in the asset replacement tables.
- 4.103 The total gross costs, for years 2023/24 onwards, should be split by Cost Type at the top of the worksheet (Rows 9 to 16). This Cost Type split should be for asset replacement interventions that are included in the measure of delivery of the NARM.
- 4.104 The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 147.

CV7b – Asset Replacement non NARM

- 4.105 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.
- 4.106 For Asset Replacement reporting, DNOs should report on asset additions (cells U28:AG132) and disposals (cells AK28:AW132) 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.
- 4.107 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.

- 4.108 The unit cost tables on the right of the worksheet (columns BQ to CE) are formula driven from the cost and volume data entered against plant assets. They calculate the annual unit cost.
- 4.109 No civil works costs or volumes are to be entered in the asset replacement tables.
- 4.110 The total gross costs, for years 2023/24 onwards, should be split by Cost Type at the top of the worksheet (Rows 9 to 16). This Cost Type split should be for asset replacement interventions that are included in the measure of delivery of the NARM. The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 147.

CV7c – Asset Replacement Civils Driven

- 4.111 For Civil Works Driven by Asset Replacement, only costs (no volumes) should be entered (cells E139:Q144) by the six categories listed.
- 4.112 The total gross costs, for the years 2023/24 onwards, should be split by Cost Type at the top of the worksheet (Rows 9 to 16). This Cost Type split should be for Civil Works Due to Asset Replacement only.

CV8 – Refurbishment non NARM and CV9 – Refurbishment NARM

- 4.113 There are two refurbishment worksheets:
- CV8 – Refurbishment non NARM
 - CV9 – Refurbishment NARM.
- 4.114 These tables are for the input of cost and volume data related to Refurbishment works.
- 4.115 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).
- 4.116 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.

4.117 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.

4.118 There are two types of Refurbishment activity:

- 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.
- 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.

4.119 Refurbishment activities that are reported in the Refurbishment – NARM worksheet are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Annex A - Glossary. These are Type 1 activities.

4.120 Refurbishment activities that are reported in the Refurbishment – Non NARM worksheet are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Annex A - Glossary. These are Type 2 activities.

CV8 – Refurbishment Non NARM

4.121 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.

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

4.123 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.

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

- 4.125 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 133.

CV9 – Refurbishment NARM

- 4.126 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.
- 4.127 Cost and volume data is reported against the asset type upon which the Refurbishment activity was undertaken.
- 4.128 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 (eg "Painting of tower", "Replacement of individual steelwork members" and "Replacement of tower foundations") into a single reporting category (eg 66kV Tower).
- 4.129 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.
- 4.130 An additional split of refurbishment volumes by key refurbishment activity is reported within the memo table in Rows 136 to 150. The volume data to be reported shall represent the number of assets where (disaggregated) Refurbishment - NARM activities have been undertaken. Where multiple activities have been undertaken for the same asset, the volumes reported in this table may not reconcile with the volumes reported in the Asset Class table above.
- 4.131 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 133.

CV10 – Civil Works Condition Driven

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

- 4.133 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, EHV 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.
- 4.134 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.
- 4.135 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.
- 4.136 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 144.

CV11 – Operational IT&T

- 4.137 This worksheet collects cost and volume data relating to Operational IT&T expenditure, excluding expenditure associated with BT 21st Century.
- 4.138 Gross costs should be reported for the following categories, which are defined in Annex A - Glossary:
- Substation RTU, Marshalling Kiosk and Receivers
 - Communications for Switching and Monitoring
 - Control Centre Hardware and Software
 - Cyber Resilience.
- 4.139 Volumes should also be reported for Substation RTU, Marshalling Kiosk and Receivers.
- 4.140 For each Operational IT category, DNOs are required to enter a cost breakdown for each distinct programme, project or initiative.
- 4.141 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 139 and row 148.
- 4.142 The DSO memo table is in Rows 237 to 240 to capture any costs in relation to DSO. These costs will be included in the M19 - DSO Memo table.

- 4.143 In Rows 151 to 152, 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.
- 4.144 In cells U151 and U155, DNOs should input the total number of pole mounted and ground mounted sites with installed monitoring for 2016 respectively.
- 4.145 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.
- 4.146 Costs and volumes for the Green Recovery Scheme should not be reported alongside all other reinforcement costs and volumes. DNOs should separately report costs and volumes associated with the Green Recovery Scheme in the specific Green Recovery Scheme memo table.

CV12 – Electricity System Restoration

- 4.147 This table provides expenditure and activity on Electricity System Restoration 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. It will be reviewed in light of the recommendations of the Electricity Task Group to the Energy Emergency Executive Committee (E3C).
- 4.148 In the first table 'Sites resolved' DNOs should report the volumes of sites where System Restoration resilience has been achieved and the costs of achieving this. The costs and volumes of Securing of Existing Telecommunications Infrastructure by site should also be recorded.
- 4.149 The unit cost tables on the right of the worksheet (columns BQ to CE) are formula driven from the cost and volume data entered. They calculate the annual unit cost.
- 4.150 In the second table 'Outstanding population of sites to be resolved' DNOs are required to provide the number of outstanding sites to be resolved by:
- EHV substations
 - 132kV substations
 - Securing of Existing Telecommunications Infrastructure.

- 4.151 The volumes of sites requiring the Securing of Existing Telecommunications Infrastructure should also be recorded.
- 4.152 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by sites resolved in Row 142.
- 4.153 This worksheet requires the reporting of asset additions and disposals as a result of Electricity System Restoration activities.
- 4.154 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 Annex A - Glossary (under the prefix "Electricity System Restoration Resilience"), are:
- Protection Batteries
 - SCADA Batteries
 - Generator
 - DC Disconnection Scheme
 - Land lines & Internal Telephony
 - Mobile Voice Communications
 - SCADA Infrastructure.
- 4.155 Volumes for the first four categories should be reported by voltage (EHV and 132kV).
- 4.156 Annual unit costs are populated automatically using the activity and cost data.

CV13 – BT21CN

- 4.157 This worksheet is for the input of volume and cost data for work carried out relating to BT's 21st century project.
- 4.158 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.
- 4.159 The categories for this worksheet, defined in Annex A - Glossary (under the prefix "BT21CN") are:
- Protection Communication Circuits – Replacement
 - Protection Operational Measures
 - Infrastructure Enabling.
- 4.160 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.

- 4.161 The costs associated with these works must be entered into the respective total direct costs cells.
- 4.162 The unit cost tables on the right of the worksheet (columns BQ to CE) 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.
- 4.163 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 139.
- 4.164 This worksheet requires the reporting of asset additions and disposals as a result of BT21CN activities.

CV14 – Legal and Safety

- 4.165 This worksheet is for the input of cost and volume data for Legal and Safety activities.
- 4.166 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
 - LineSIGHT - No. of sensors on high risk circuits
 - LineSIGHT - No. of sensors on normal risk circuits
 - LineSIGHT - Total no. of sensors installed
 - LineSIGHT - Length of high voltage overhead line circuits covered

- 4.167 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.
- 4.168 The unit cost tables on the right of the worksheet (columns BQ to CE) are formula driven from the cost and volume data entered. They calculate the annual unit cost.
- 4.169 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Rows 153 and 196.
- 4.170 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

- 4.171 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.
- 4.172 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).
- 4.173 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Rows 143.
- 4.174 This worksheet requires the reporting of asset additions and disposals as a result of QoS and North of Scotland resilience works.

CV16 – Flood Mitigation

- 4.175 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.
- 4.176 DNOs should input costs and volumes associated with:
- flood mitigation schemes by substation

- flooding site surveys by substation.
- 4.177 There are separate sections to report these activities for both Fluvial/Coastal and Pluvial mitigation work.
- 4.178 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).
- 4.179 For pluvial schemes, only a breakdown by voltage is required.
- 4.180 The volumes are the number of substations for all of the above.
- 4.181 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.
- 4.182 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.
- 4.183 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 179.
- 4.184 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.

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)

4.185 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.

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

4.187 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 32)
- Number of Rising and Lateral Mains (Row 34)
- Number of LV Services associated with RLMs (Row 36)
- Number of LV Circuit Breakers (Row 37)
- Number of LV Pillars (ID) (Row 38)
- Number of LV Boards (WM) associated with RLMs (Row 41)
- Number of LV cut outs (metered) (Row 44)
- Number of LV Boards (X-type network) (WM) (Row 45).

4.188 The second section is the Inspection and Maintenance costs associated with RLMs. Data is required for the following, which are defined in Annex A - Glossary:

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

4.189 The total gross costs of these first two sections should equal the total gross costs by Cost Type split in Row 17.

4.190 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 17. The data should be captured by the type of property – House, Flat and Multi-Storey (defined in Annex A – Glossary).

- 4.191 The unit cost tables on the right of the worksheet (columns BQ to CE) are formula driven from the cost and volume data entered. They calculate the annual unit cost.
- 4.192 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconcile with the RLM Total (Row 142).

CV18 – Overhead Line Clearances

- 4.193 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).
- 4.194 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.
- 4.195 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 Annex A - 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.
- 4.196 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.
- 4.197 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.
- 4.198 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.

- 4.199 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 2015-16. The calculation uses the reference volumes, adding any additional sites identified in subsequent years and subtracting the sites that are resolved in subsequent years.
- 4.200 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.
- 4.201 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by sites resolved in Row 140.
- 4.202 This worksheet requires the reporting of asset additions and disposals as a result of OH Clearances programmes.

CV19 – Worst Served Customers (WSCs)

- 4.203 This worksheet is for the reporting of direct costs, volumes of schemes and asset changes related to investment for Worst Served Customers (WSCs).
- 4.204 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.
- 4.205 Gross costs should be reported by Cost Type only. No further disaggregation is required.
- 4.206 The key terms for this worksheet, defined in Annex A – Glossary, are:
- Worst Served Customers (WSCs)
 - Worst Served Customer Schemes.
- 4.207 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.
- 4.208 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.

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

CV20 – Visual Amenity

4.210 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. The Visual Amenity funding mechanism allows undergrounding of overhead lines for Visual Amenity Inside Designated Areas and allows for up to 10% of the total allowances to be used for undergrounding of overhead lines for Visual Amenity Outside Designated Areas.

4.211 The following terms are defined in Annex A - Glossary:

- Designated Areas
- OHL Inside Designated Areas at End of Reporting Year (km)
- OHL (Overhead Lines)
- OHL (km) Removed During Year
- UG Cables Installed During Year (km)
- Visual Amenity Allowance
- Visual Amenity Expenditure
- Visual Amenity Inside Designated Areas
- Visual Amenity Outside Designated Areas
- Visual Amenity Project.

4.212 The Volume - Visual Amenity Inside Designated Areas and Volume - Visual Amenity Outside Designated Areas tables are for recording the volume related to this activity for each Regulatory Year.

4.213 The Costs table is for recording the costs of activity for Visual Amenity Inside and Designated Areas and Visual Amenity Outside Designated Areas. For the avoidance of doubt, costs recorded in this table are only those for eligible Visual Amenity Projects funded under the Visual Amenity Allowance.

4.214 The Total Gross Costs entered in CV20 – Visual Amenity of the Costs, Volumes and Revenue Reporting Pack must be equal to the Total Visual Amenity Expenditure (Row 183) of this table.

4.215 Where no activity has been undertaken in a particular Designated Area, these cells should remain blank. Total volumes of lines in place in the relevant

Designated Area should be reported here, regardless of how any work relating to them was funded.

CV21 – Losses

- 4.216 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.
- 4.217 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 Annex A - Glossary:
- Equipment to Manage Losses
 - Operational Activities to Manage Losses.
- 4.218 We would expect the costs reported for Equipment to Manage Losses to be associated with the asset class list reported in this worksheet.
- 4.219 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 138.
- 4.220 This worksheet requires the reporting of asset additions and disposals as a result of Losses activities.
- 4.221 Additional data and commentary on distribution losses related activities is reported in worksheet E4 – Losses Snapshot of the Environment and Innovation Reporting Pack (Annex J).

CV22 – Environmental Reporting

- 4.222 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 also collects data on compliance with environmental legislation.
- 4.223 The following terms are defined in Annex A - glossary:
- Contaminated Land Clean Up
 - Environmental Civil Sanction
 - 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
- Persistent organic pollutant Asset Changes
- Persistent organic pollutant Oil Testing
- Persistent organic pollutant Oil Changes
- SF6 Emitted Mitigation Schemes
- Undergrounding for Visual Amenity.

4.224 Costs and volumes for each activity should be reported by category listed in the table “Environmental costs and volumes”. These should be recorded here where the primary driver of the activity undertaken was environmental improvements. DNOs are able to include additional costs and volumes as necessary in Rows 145 to 154.

4.225 It is not intended that the reporting requirements should be any more onerous than would be required by current reporting or management practices. It is therefore expected that DNOs will use existing information systems to report these measures (including those introduced to support the National Operating Code on the Management of Fluid Filled Cable Systems).

4.226 Ofgem continues to take an interest in Schedule 9 matters. Ofgem may request Schedule 9 statements from DNOs.

CV23 – High Value Projects DPCR5 and RIIO-ED1

4.227 This worksheet is for the input of volume and cost data on DPCR5 and RIIO-ED1 High Value Projects (HVP). HVPs cover specific schemes where the related expenditure is forecast to exceed the high value project threshold as determined by Ofgem. For RIIO-ED1 the threshold for projects to be considered high value is £25m per bespoke project. For DPCR5 the threshold was set to £15m.

4.228 In Rows 136 to 151 the basic project information should be entered (ie scheme name and project/scheme ID). The corresponding total direct costs should be reported in the adjacent table.

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

- 4.230 The three tables “Expenditure Breakdown by driver” collect HVP volume and expenditure data by driver. If there are two or more investment drivers for a project the costs need to be allocated across the investment drivers. In other words, if one project has two investment drivers and this is set out over two rows then the costs across the two rows must equal the project total.
- 4.231 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 secondary deliverables reporting pack
- 4.232 Customer Contributions and Cost Recoveries costs should also be reported by driver.
- 4.233 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by sites resolved in Row 176.
- 4.234 Customer Contributions and Cost Recoveries should also be reported in Rows 18 and 19.

CV24 – RIIO-ED2 High Value Projects

- 4.235 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.
- 4.236 The asset list should be populated with the volumes additions and disposals) for all projects.
- 4.237 The tables “HVP1”, “HVP2” and “HVP3” collect 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.
- 4.238 The “Expenditure Breakdown by driver” table populates automatically from data contained above.
- 4.239 Information about HVP progress and completion should be included in the narrative.
- 4.240 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross

costs in Row 17 reconciles with the total gross costs by sites resolved in Rows 183, 235 and 287.

CV26 – Faults

- 4.241 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.
- 4.242 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.
- 4.243 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.
- 4.244 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.
- 4.245 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 is not compatible with the new transformer and therefore the LV pillar is also replaced. The fault cost includes the replacement of both items

4.246 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.

4.247 Appendix 1 of these RIGs provide 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.

4.248 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.

4.249 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.

4.250 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.

4.251 The unit cost tables on the right of the worksheet (Columns BQ to CE) are formula driven from the cost and volume data entered.

4.252 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.

- 4.253 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 licensee's ability to deliver NARM outputs. This can be considered by Ofgem when assessing licensee's delivery against the NARM monetised risk target under SpC 3.1 (Allowed Network Asset Risk Metric expenditure).
- 4.254 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 164.
- 4.255 This worksheet requires the reporting of asset additions and disposals as a result of unplanned incident activity.
- 4.256 Fault rates are automatically populated in cells CS136:DE163.

CV27 – Severe Weather 1-in-20

- 4.257 The purpose of this table is to record the costs and volume of Troublecall unplanned incidents associated with Severe Weather 1-in-20 Events.
- 4.258 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 SpC 4.4 (Interruptions incentive scheme output delivery incentive) 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

- 4.259 The costs and volumes data provided in this worksheet should not be included in CV26 – Faults.
- 4.260 The volume of unplanned incidents should be disaggregated by the voltage and Power System Voltage Equipment categories listed within the worksheet.
- 4.261 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.
- 4.262 The costs incurred for the purposes of supporting Customers during a Severe Weather 1-in-20 event should also be provided in this worksheet. This includes costs associated with providing customers with food, drink or temporary accommodation, welfare items as well as surge staff for customer contact centres.
- 4.263 The number of 1-in-20 severe weather events in the Regulatory Year should also be provided.
- 4.264 All categories listed within this worksheet are defined in Annex A - Glossary.
- 4.265 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type across Rows 170 and 172.
- 4.266 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)

- 4.267 This worksheet is for the input of cost and volume data for Troublecall Occurrences Not Incentivised (ONIs).
- 4.268 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.

- 4.269 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 (ie 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.
- 4.270 The reporting of cost and volume data for ONIs is separated into two categories, which are defined in Annex A - Glossary:
- Power System Voltage Equipment/No Unplanned Incident
 - Other Occurrences (Not Affecting Power System Voltage Equipment).
- 4.271 Each category is further disaggregated into a number of sub-categories, which are also defined in Annex A - Glossary.
- 4.272 The unit cost table is formula driven from the cost and volume data entered.
- 4.273 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 152.
- 4.274 This worksheet requires the reporting of asset additions and disposals as a result of ONI activity.
- 4.275 In respect of cut outs (metered services), where cost and activity volumes were reported as an ONI in the preceding reporting years and have since been identified as smart meter related there is a row (Cut Outs (Metered Services) - Prior Year Adjustment due to Smart Meter Rollout) to adjust for smart meter costs and volumes for the previous reporting periods (ie Costs and volumes adjustments should be specified in this row and a corresponding adjustment included in row Row 138 of CV34 – Smart Meter Interventions DNO. The adjustments should be included in the reporting Regulatory Year (ie although the adjustment relates to interventions in a previous year, it should be reported in the cells for the current Regulatory Year of reporting).

- 4.276 Provide commentary to explain any distortion in unit costs for Rows 138 and 139 because there will be volumes recorded in two separate rows for street lighting and cut outs but costs recorded in one row.
- 4.277 Following the end of the Smart Meter Roll Out, any faults on smart meters should be reported under ONIs.

CV29 – Tree Cutting

- 4.278 This worksheet is for the input of cost and volume data related to Tree Cutting.
- 4.279 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.
- 4.280 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.
- 4.281 The total activity costs and volumes are to be reported by the applicable categorisation listed within each table.
- 4.282 The unit cost tables on the right of the worksheet (Columns BQ to CE) are formula driven from the cost and volume data entered.
- 4.283 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 9 to 16).

The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 78.

4.284 The 'Network Parameters and 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.

4.285 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.

4.286 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

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

4.288 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.

4.289 All categories within this worksheet are defined in Annex A - Glossary.

4.290 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.

- 4.291 The unit cost tables on the right of the worksheet (Columns BQ to CE) are formula driven from the cost and volume data entered.
- 4.292 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 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 169.

CV31 – Repair and Maintenance

- 4.293 This worksheet is for the input of cost and volume data related to Repair & Maintenance.
- 4.294 Cost and volume data is reported against the asset type upon which the Repair & Maintenance activity was undertaken.
- 4.295 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

- 4.296 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 4 of Annex A - Glossary.
- 4.297 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.
- 4.298 The unit cost tables on the right of the worksheet (Columns BQ to CE) are formula driven from the cost and volume data entered.
- 4.299 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 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Rows 133 and 141.

CV32 – Dismantlement

- 4.300 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.
- 4.301 Costs are required by Cost Type only.
- 4.302 The key term for this worksheet, defined in Annex A – Glossary, is:
- Dismantlement.
- 4.303 This worksheet requires the reporting of asset additions and disposals as a result of dismantlement activity.

CV33 – Substation Electricity

- 4.304 The purpose of this table is to collect information relating to the both the cost and volume of electricity consumed at substations.
- 4.305 Key terms for this worksheet, defined in Annex A – Glossary, are:
- Cost per unit £/MWh
 - Substation Electricity
 - Substation Electricity Costs
 - Units Consumed.
- 4.306 DNOs should insert the costs and units consumed, in MWh, at DNOs substation in the appropriate cells.
- 4.307 The cost per MWh of electricity consumed at substations is derived by formula.

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

CV34 – Smart Meter Intervention DNO

4.309 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.

4.310 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.

4.311 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 Interventions – Category A Intervention
- Smart Meter Interventions – Category B Intervention
- Smart Meter Interventions – Category C Intervention
- Smart Meter Interventions – Proactive Interventions

4.312 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 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs by category type in Row 145.

4.313 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.

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

4.315 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.

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

- reported defect code
- reported details of the defect
- date of reporting.

4.317 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.

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

4.319 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.

4.320 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.

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

Process A

4.322 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.

4.323 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.

4.324 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. Any defects now identified as associated with Smart Meter Installation should be reported as an adjustment in both the Smart Meter and ONI's tables within the column for the current reporting year in the cells for Smart Meter Interventions – prior years' restatement.

Process B (applies only to category B defect notifications)

4.325 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:

- 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)

4.326 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)

4.327 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.

4.328 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.

4.329 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 C18 - De-Minimis. Any costs associated with training contractors within DNO training facilities should also be reported in the same way.

4.330 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.

4.331 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.

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

4.333 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.

4.334 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.

4.335 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.

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

4.337 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)

- 4.338 This worksheet is for reporting costs and volumes related to NIA funding. This worksheet is for RIIO-ED1 and RIIO-ED2 costs.
- 4.339 NIA is a set allowance that the licensee can use to fund innovation projects each year on a use it or lose it basis.
- 4.340 Gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The Cost Type split should exclude indirect costs. Expenditure by project should be entered in Rows 140-157. This sheet also captures Carry-over Network Innovation Allowance.

CV37 – Network Innovation Competition (NIC)

- 4.341 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 was 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.
- 4.342 DNOs are also required to report costs, including indirects, against the following for each NIC project, which are defined in Annex A – Glossary:
- NIC Funding, Halted Project Revenues, Disallowed Expenditure in line with the Project Direction
 - NIC Royalties, Directly Attributable Costs, Returned Royalty Income and Retained NIC Royalties.
- 4.343 Gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The Cost Type split should exclude indirect costs. The purpose of the check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the sum of total gross costs for all projects.

CV38 – LCN Fund

- 4.344 This worksheet is for recording costs and volumes related to projects funded through the LCN Fund and expenditure from the LCN Fund project bank account.
- 4.345 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.
- 4.346 This worksheet records costs and volumes for projects that have previously been funded, undertaken and completed through DPCR5 and RIIO-ED1. It was assumed that all such projects would be complete by the end of RIIO-ED1 and thus no costs would be forecast in RIIO-ED2.
- 4.347 Eligible LCN Fund expenditure is to be reported by Cost Type at the top of this worksheet (Rows 9 to 16). The Cost Type split should exclude indirect costs.

CV39 – Directly Remunerated Services (DRS)

- 4.348 Costs and revenue for each category of directly remunerated service, set out in SpC 9.7 (Directly Remunerated Services), are reported in this worksheet with the exception of “DRS1 Connection services” which should be reported in C1 – Connections inside the Price Control and C20 – Connections outside the Price Control.
- 4.349 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
 - DRS10. Value Added Services
 - DRS11. Top-up, standby, and enhanced system security
 - DRS12. Revenue protection services
 - DRS13. Metering Services
 - DRS14. Smart Meter Roll-out rechargeable services
 - DRS15. Miscellaneous
 - DRS16. Distribution Network Voltage Control Services.
- 4.350 Revenue for each DRS should be input in columns U to AG. 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.

CV40 – Strategic Innovation Fund (SIF)

- 4.351 This worksheet is for reporting costs and volumes related to projects funded through the SIF.
- 4.352 Gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The Cost Type split should exclude indirect costs. The purpose of the check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the sum of total gross costs for all projects.
- 4.353 Expenditure by project should be entered in Rows 135 to 144.

CV42 – West Coast of Cumbria

- 4.354 This worksheet collects details activities under the West Coast of Cumbria project. It applies to ENWL only. The purpose of this worksheet is to record the relevant DUoS costs of ENWL's work carried out under the West Cost of Cumbria project project to feed into C1 and associated asset additions and disposals to feed into V1 – Total Asset Movements.
- 4.355 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconcile with total gross costs from all category types
- 4.356 For Asset reporting, DNOs should report on asset additions (cells U28:AG132) and disposals (cells AK28:AW132). 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.
- 4.357 The expenditure breakdown by driver tables volume and expenditure data. This includes information by driver, customer contributions and total cost recoveries. The corresponding total direct costs should be reported in the adjacent table.
- 4.358 The "Net Total" table populates automatically from data contained above.

CV43 – Smart Street (ENWL only)

- 4.359 This worksheet is for the reporting of costs, volumes of schemes and asset changes related to Electricity North West's Smart Street Project.
- 4.360 The investment for Smart Street 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.
- 4.361 The key terms for this worksheet, defined in Annex A – Glossary, are:

- Smart Street
- On-load tap changer

4.362 Gross costs of Smart Street projects and the “Number of on-load tap changers installed” should be recorded in row 136

4.363 The total gross costs should be split by Cost Type at the top of the worksheet (Rows 9 to 16). The purpose of check cell in Row 22 is to ensure the total gross costs in Row 17 reconciles with the total gross costs in Row 137.

4.364 This worksheet requires the reporting of asset additions and disposals as a result of Smart Street activities.

5. Instructions for completing the volume worksheets

Overview

- 5.1 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.
- 5.2 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

- 5.3 DNOs are required to input the closing balance of assets for the 2014/15 reporting year in column BA of this worksheet. The total asset movements worksheet is then auto populated by addition and disposal volumes from the activity areas.
- 5.4 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.
- 5.5 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.
- 5.6 The LV Fuses (PM) count is auto populated from the PMT count in the top table.

V2 - Cleansing

- 5.7 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

- 5.8 This worksheet is for the input of Connections volume data to V1 – total asset movements.
- 5.9 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

- 5.10 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 (2016 to 2028)

- 5.11 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 2015/16 to 2027/28.

AP1 - Age Profile

- 5.12 The key terms for this worksheet, which are defined in Annex A – Glossary are:
- Average Asset Lives
 - Standard Deviation of Lives
 - Strategic Spares.
- 5.13 DNOs must input the existing asset quantities (by asset category as specified in the worksheet and Annex A - Glossary) in the Regulatory Year in which they were added to the network.

- 5.14 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).
- 5.15 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.
- 5.16 Assets under construction must not be included in the age profile.
- 5.17 Strategic spares must not be included in this table until installed and energised on the system.
- 5.18 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.
- 5.19 Asset data must be disclosed by operating, and not by construction, voltage.

6. Instructions for completing memo worksheets

Overview

- 6.1 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.
- 6.2 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.
- 6.3 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

- 6.4 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 DESNZ and other bodies, and to provide a cross check with the aggregated costs reported in CV16 – Flood Mitigation.
- 6.5 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.
- 6.6 DNOs are required to list the substations within their defence plans (with primary/secondary voltages) in columns B to D, followed by details of the numbers of customers served, including the number and type of critical customers in columns E to G.
- 6.7 Column H 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.
- 6.8 Columns I to L 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 I): 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” (Col J): 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 K): For each substation that is at risk of flooding, identify the flood impact for that particular site.
- “Societal Impact Assessment Complete” (Col L): 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 N 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.

- 6.9 Once an appropriate solution has been chosen for the scheme, based on the levels of flood risk and a cost/benefit assessment, Columns O and P are used to record the date of completion of the detailed scheme design and of the scheme’s implementation. Once complete, DNOs should enter completed against the substation concerned.
- 6.10 In column Q, “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.
- 6.11 In Column R, 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 H. The remainder of the columns in the table to the right of and including Column S 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 181 of CV16 tests this reconciliation.

M2 – RIIO-ED2 Worst Service Customer (WSC) Projects

- 6.12 The purpose of this worksheet is to collect data on the number of Worst Served Customers (as defined in the RIIO-ED2 WSC mechanism) for Regulatory Years in RIIO-ED2 and on the activity volumes and expenditure incurred due to projects commissioned under the WSC mechanism. 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.
- 6.13 In the “RIIO-ED2 WSC project non-cost information” table, the DNO is to populate details of the projects carried/ being carried out. The table should be completed in line with the WSC Governance Document.
- 6.14 In the “Annual cost of the WSC Project (£k)” table, the DNO should insert the expenditure on each WSC Project in the Regulatory Year.
- 6.15 Where no activity has been undertaken as part of this mechanism, then the DNO should leave these cells blank.

M3 – ED1 WSC Projects

- 6.16 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.
- 6.17 This worksheet collects data on the number of Worst Served Customers (as defined for the ED1 Worst Served Customer mechanism) for Regulatory Years in RIIO-ED1 and on the activity volumes and expenditure incurred due to schemes commissioned under the Worst Served Customers mechanism.
- 6.18 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.
- 6.19 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 DPCR5
- Project details
- Number of HV+ incidents within the reference period
- Number of HV+ incidents post scheme completion
- Costs (£k)
- Performance Improvement Target.

- 6.20 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.
- 6.21 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.
- 6.22 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.

- 6.23 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.
- 6.24 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.
- 6.25 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.
- 6.26 In the "Costs (£k)" table, the DNO should insert the expenditure on each project in the Regulatory Year.
- 6.27 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.
- 6.28 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.
- 6.29 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.

- 6.30 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.
- 6.31 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 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.
- 6.32 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.

6.33 Where no activity has been undertaken as part of this mechanism, then the DNO should leave these cells blank.

M4 – Vulnerability Deliverables

- 6.34 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. DNOs developed and submitted vulnerability strategies as part of their RIIO-ED2 Business Plans and in these strategies, DNOs 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.
- 6.35 We expect all costs associated with DNOs' delivery of their vulnerability strategies to be captured in the relevant reporting tables.
- 6.36 In the M4 table, DNOs should provide annual cost totals associated with the three key vulnerability delivery areas: Priority Services Register support, Fuel Poverty services and Low Carbon Transition services. DNOs should separate costs associated with activities that fall within the scope of the Consumer Vulnerability incentive, and those that fall outside the scope of the incentive.

M6 – SRVD & LVSVD

- 6.37 The purpose of this worksheet is to determine the allowable volumes for the secondary reinforcement volume driver and the LV services volume driver in the Regulatory Year under report, when taking previously disallowed volumes and caps into account.
- 6.38 The Cost of Disallowed Volumes should be entered in the year in which the disallowed volumes were first reported as volumes on CV2.

M7 – SRVD Flexibility

- 6.39 The purpose of this worksheet is to determine the secondary reinforcement volume driver flexibility allowances that are used in M6 – SRVD & LVSVD. Information from this worksheet is also required for reporting in accordance with the LRE Volume Drivers Governance Document.
- 6.40 WACC should be entered in row 83, in each reporting year where WACC is the vanilla weighted average cost of capital, derived in accordance with Chapter 4 of the ED2 Price Control Financial Handbook.
- 6.41 Transformer capacity deferred (gross, counterfactual): DNOs are required to record the MVA of the asset that would have been built if flexibility hadn't been procured (ie the MVA of capacity that was deferred). The MVA should only be recorded in the first year that flexibility was procured for a specific contract, and it should be recorded in the cell denoting the length of the contract that has been signed. If the length of the contract is over 5 years, then it should be recorded as 5 years. MVA should not be recorded in any subsequent year for a multi-year contract.
- 6.42 Circuit length deferred (gross, counterfactual): DNOs are required to record the km of the circuit that would have been built if flexibility hadn't been procured (ie the km of circuit that was deferred). The km should only be recorded in the first year that flexibility was procured for a specific contract, and it should be recorded in the cell denoting the length of the contract that has been signed. If the length of the contract is over 5 years, then it should be recorded as 5 years. Circuit km should not be recorded in any subsequent year for a multi-year contract.
- 6.43** Pole / GMT mounted transformers capacity (existing) (split by utilisation band): The existing number of transformers and the existing capacity (MVA) should be recorded within the forecast utilisation band of the existing asset (PMT / GMT). The forecast should be made when the flexibility solution is procured and will be the forecast utilisation at the March 31st following the RRP submission. The MVA should be recorded in the first year that flexibility was procured, and it should be recorded in the cell which denotes the length of the contract that has been signed. If the length of the contract is over 5 years, then it should be recorded as 5 years. MVA should not be recorded in any subsequent year.

M9 - Streetworks

- 6.44 This table collects Streetworks costs to inform future cost assessment and to collect information for the Specified Street Works Costs Re-opener.

- 6.45 All ongoing Streetworks costs, should be embedded in the relevant cost activity tables and reported in the Street Works Cost Type split. The admin associated with all Street Works should be reported in Engineering Management and Clerical Support (EMCS).
- 6.46 Total Streetworks Costs, excluding administration costs, across the Street works should closely reconcile with the Streetworks Cost Type expenditure reported in the C1 tables for the RIIO-ED1 and RIIO-ED2 years.
- 6.47 The Street Work Costs table (Rows 9 to 60) separately identifies the costs and volumes associated with Street Works (see definition).
- 6.48 Gross costs and volumes should be reported for the following categories, which are defined in Annex A – Glossary (under the prefix “Streetworks”):
- 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 (costs only, no volumes).
 - Street Works Admin (costs only, no volumes).
 - Suspensions and Closures (costs only, no volumes).
 - 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
 - Permit and Lane Rental Set Up Costs (costs only, no volumes)
 - Permit and Lane Rental Administration Costs (costs only, no volumes).
- 6.49 DNOs are also expected to report the income for the following in Rows 62 to 65, also defined in Annex A - Glossary (under the prefix “Street Works”):
- Income from Connectee
 - Penalties Recovered from Contractor.
- 6.50 All income and penalties recovered should be entered as a negative number.
- 6.51 Related Party costs should be reported as if incurred by the DNO.

- 6.52 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 customer funded.

M11a – Subsea Cables Proactive

- 6.53 The purpose of this worksheet is to assist in the assessment of the subsea cables. This worksheet is for the input of volume and cost data on Subsea Cable Condition Replacement.
- 6.54 The 'Submarine Cables – Total Costs' in Row 184 sums the total costs for submarine cables for any specific year.
- 6.55 The 'Submarine Cables – Asset Replacement Costs' section should be filled in with the Ref. No. which is an internal reference number for SSEH, the name of the cable, the voltage (11kV, EHV, 132kV), and the number of customers connected.
- 6.56 The 'Submarine Cables – Inspections' section should be filled in with the Ref. No. which is an internal reference number for SSEH, the voltage (11kV, EHV, 132kV), the number of customers connected. The costs should be allocated to the year in which costs are incurred and cable, and the volume (km) inspected should be allocated to the corresponding year.
- 6.57 The 'Submarine Cables – Diesel Generation Costs' section should be filled in with the Ref. No. which is an internal reference number for SSEH, the voltage (11kV, EHV, 132kV) and the number of customers. The costs are for Diesel Generation during the project driven by proactive replacement. The volume would be quantified as the number of hours for which the diesel generation had run.
- 6.58 The 'Submarine Cables – Dismantlement' section should be filled in with the Ref. No. which is an internal reference number for SSEH, the voltage (11kV, EHV, 132kV) and the number of customers. The costs are for dismantlement activities.

M11b – Subsea Cable Reactive

- 6.59 The purpose of this worksheet is to assist in the assessment of the subsea cables. This worksheet is for the input of volume and cost data on Subsea Cable Fault Replacement.
- 6.60 The 'Submarine Cables – Total Costs' in Row 182 sums the total costs for submarine cables for any specific year.
- 6.61 The 'Submarine Cables – Fault Replacement Costs' section should be filled in with the Ref. No. which is an internal reference number for SSEH, the name of the cable, the voltage (11kV, EHV, 132kV), and the number of customers connected.

- 6.62 The 'Submarine Cables – Inspections' section should be filled in with the Ref. No. which is an internal reference number for SSEH, the voltage (11kV, EHV, 132kV), the number of customers connected. The costs should be allocated to the correct year and cable, and the volume (km) inspected should be allocated to the corresponding year.
- 6.63 The 'Submarine Cables – Diesel Generation Costs' section should be filled in with the Ref. No. which is an internal reference number for SSEH, the voltage (11kV, EHV, 132kV) and the number of customers. The costs are for Diesel Generation during the project driven by reactive replacement. The volume would be quantified as the number of hours for which the diesel generation had run.
- 6.64 The 'Submarine Cables – Dismantlement' section should be filled in with the Ref. No. which is an internal reference number for SSEH, the voltage (11kV, EHV, 132kV) and the number of customers. The costs are for dismantlement activities.

M12 - West Coast of Cumbria (ENWL only)

- 6.65 The purpose of this worksheet is to assist in the assessment of the West Coast of Cumbria reopener. It brings together all costs relating to West Coast of Cumbria – a project to build a new nuclear power station in Cumbria which will significantly impact ENWL's electricity distribution network. There are two tables.
- 6.66 The first table collects total Costs within the Price Control and requires input from DNOs.
- 6.67 The second table provides the tax pool split for the PCFM for the DUoS-funded totex costs.

M14 - Drivers

- 6.68 The purpose of this worksheet is for DNOs to provide cost driver information, which may be used for future and within period benchmarking.
- 6.69 This worksheet collects data in the following tables:
- Exogenous Totex Drivers
 - Quality of Service (unplanned and unweighted)
 - Number of LCTs (new in each regulatory year)
 - Network Operating Characteristics
 - Installed Network Assets.
- 6.70 DNOs are required to input data in the first three 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).
- Number of LCTs (new in each Regulatory Year)

6.71 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

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

- Customers Interrupted (CI)
- Customer Minutes Lost (CML)
- Customer²
- GWh
- MVA
- Span.

6.73 The values for exogenous Totex drivers and DNO output levels in each reporting year should be actuals up to and including that reporting year ,

6.74 The values for Number of LCTs should be as follows;

- Heat Pumps: the total number of heat pumps installed at the end of the relevant Regulatory Year, using data from the Microgeneration Certification Scheme (MCS) Installation Database (MID).
- Electric Vehicles: the total number of plug-in vehicles (PIVs) registered at the end of the relevant Regulatory Year, using the most recent (quarterly) df_VEH0145 dataset published by DfT & DVLA. It is acknowledged that due to the lag in publishing this dataset, between the end of the relevant quarter and the publication date, data may not be available for the whole of the

² These values should be provided on the same basis as that used for the IIS returns.

Regulatory Year under report. Data for the previous reporting year should therefore also be updated in each Regulatory Year, to include all registered PiVs registered at the end of the previous Regulatory Year. Additionally;

- Vehicles registered to LSOA areas with <100 PiVs should be distributed across DNO regions using the LSOA areas where they are registered.
- Vehicles registered to LSOA areas with >100PiVs will not all be allocated to the DNO area that contains the LSOA area where they are registered but instead to all DNO regions on the same proportion as the vehicles registered in LSOA areas with <100 PiVs. This will ensure that leased PiVs are distributed across all DNO areas rather than just to those DNO areas where the lease companies are registered.
- Where part of a single LSOA is located in two or more DNO regions, all of the vehicles within that LSOA should be allocated to the DNO region which contains the majority of the area of the LSOA.

6.75 DNOs should report the Number of LCTs in each regulatory year of ED1 on the same basis and using the same data sources described in 6.77 above, to enable the number of new LCTs added in each Regulatory Year to be calculated.

6.76 This worksheet will be developed further during RIIO-ED2.

M18 – Full Time Equivalents

6.77 The purpose of this worksheet is for DNOs to provide an estimated number of Full Time Equivalents (FTEs) at 31 March in each occupational group (SOC code) in the table.

6.78 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.

6.79 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 SOC³ manual should be referred to.

3

[https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificati
onsoc](https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificati
onsoc)

M19 – DSO

- 6.80 The purpose of this worksheet is for DNOs to provide an estimated value and categorisation of expenditure incurred in the current reporting year on incremental IT and indirect costs associated with DSO implementation and activities.
- 6.81 The DNOs are required to input the costs of Innovation in Row 40. Other net costs in the main M19 table are automatically populated through linking to other worksheets in the Costs, Volumes and Revenue pack.
- 6.82 It is expected that in the strategic commentary, DNOs provide further detail of the types of DSO costs they are incurring to support the costs reported in this table.
- 6.83 For the Total Closely Associated section, we have added categories of expenditure that were not reported in RIIO-ED1; we have now added these should they become applicable to a DNO through RIIO-ED2. Please leave any categories that remain not applicable to a DNO blank.

M20 – LCTs (low carbon technologies)

- 6.84 This is a Memo worksheet. All costs and volumes forecast here should also be included in CV1 and CV2 as appropriate.
- 6.85 This worksheet captures the number and size of Low Carbon Technologies (LCTs) connected in the Regulatory Year. The worksheet also captures costs and volumes associated with schemes implemented and the capacity released (peak) on the primary and secondary network.
- 6.86 The term Low Carbon Technologies is defined in the Glossary.

Low Carbon Technologies

Number and Size of LCTs Installed

- 6.87 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 (EHV+) and Secondary (HV and LV) voltages. The volumes recorded in this table should be for new technologies connected in that year, and not a cumulative total.
- 6.88 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.

6.89 DNOs must report on the following LCTs:

- Heat pumps
- Electric vehicle (EV) chargers, both slow and fast charging
- 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.

6.90 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”

6.91 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 strategic commentary.

6.92 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.

LCT notifications

6.93 As well as the number and size of LCTs installed, DNOs must also provide detail of the number of customer notifications of EV charger and heat pumps and installations.

M29 – Data and Digitalisation

6.94 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 Costs, Volumes and Revenue Pack .

6.95 The DNOs are required to input the costs of Innovation in Row 40. Other net costs in the M29 table are automatically populated through linking to other worksheets in the pack.

- 6.96 For the Total Closely Associated section, we have added categories of expenditure that were not reported in RIIO-ED1; we have now added these should they become applicable to a DNO through RIIO-ED2. Please leave any categories that remain not applicable to a DNO blank.

M31 – Dig, Fix and Go (ENWL only)

- 6.97 The purpose of this worksheet is to calculate the average End-to-End Restoration Time (ESD) which will in turn be used to calculate the dig, fix and go output delivery incentive term (DFG) under Special Condition 4.9 for ENWL that feeds into table R5. The effect of the condition is to reward or penalise ENWL in relation to the ESD following unplanned emergency streetworks.
- 6.98 For clarity the volumes in this table should only include unplanned emergency street works where, as set out in ENWL business plan the following volumes are excluded; private street works, duplicate work orders such as remedial, interim reinstatement works, defects and temporary reinstatement works, all planned works such as connections activity, EHV faults works and no excavations works.

Appendix 1 – Cost Allocation Scenarios Fault and Asset Replacement

Example	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 position. In both cases the 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.	Length required for fault repair treated as fault costs	Additional length to address fault history treated as 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 incentive 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 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 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

Example	Fault	Non Fault
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 eg 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 conformance 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

Example	Fault	Non Fault
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 (ie 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 work. 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
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

Example	Fault	Non Fault
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 restore 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

Example	Fault	Non Fault
<p>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.</p>	<p>Tap changer fault costs</p>	<p>Subsequent Transformer change - asset replacement</p>
<p>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.</p>	<p>All fault costs</p>	<p>N/A</p>
<p>Fault within a transformer requiring the whole transformer to be changed. All the costs of replacing the transformer should be allocated to faults.</p>	<p>All fault costs</p>	<p>N/A</p>