

# RIIO-ED1 regulatory instructions and guidance: Annex B – Costs and Volumes

## Guidance

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### Overview:

RIIO-ED1 is the price control for electricity distribution network operators (DNOs) from 1 April 2015 to 31 March 2023.

This document is part of the regulatory instructions and guidance (RIGs) for RIIO-ED1.

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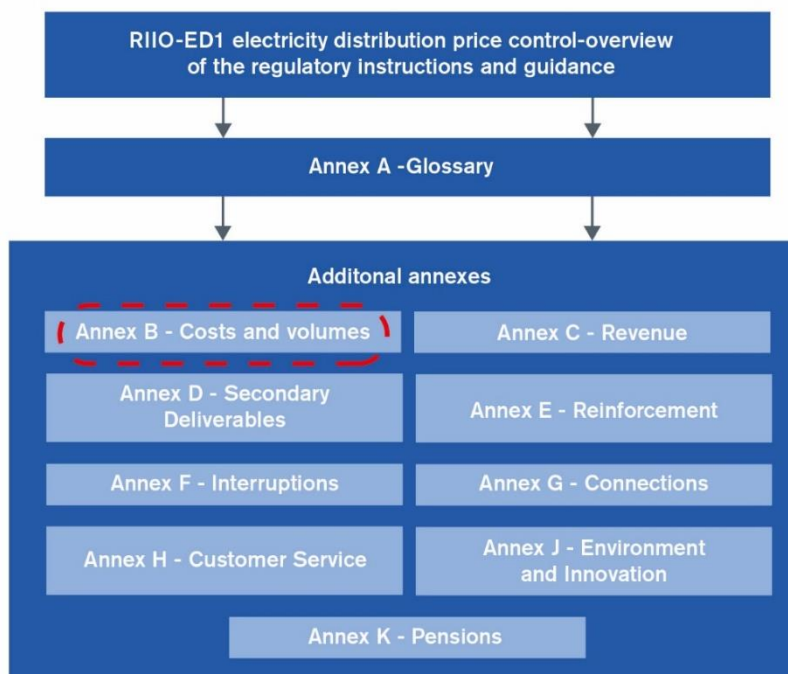
# 1. Introduction

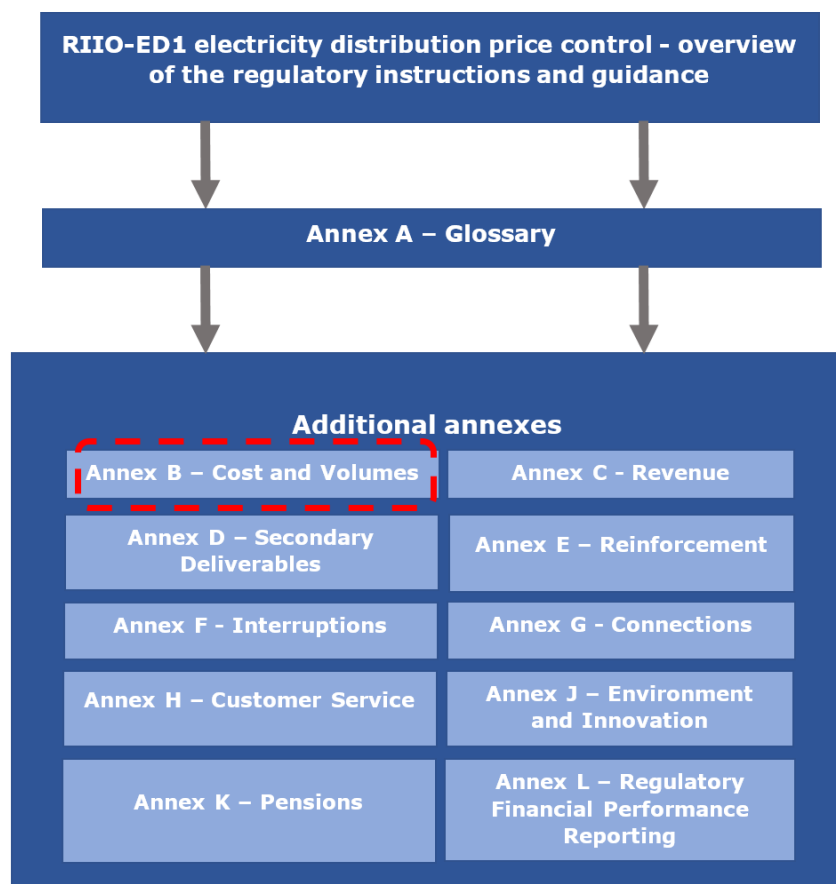
## Scope of this document

1.1. This document is part of the regulatory instructions and guidance (RIGs) for RIIO-ED1. 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-ED1 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 and Volumes Reporting Pack and Strategic Commentary that they are required to submit to us.

**Figure 1.1: Map of the RIIO-ED1 instructions and guidance**





1.3. This document should be read in conjunction with:

- the RIIO-ED1 electricity distribution price control – overview of the regulatory instructions and guidance document
- Annex A – Glossary for the regulatory instructions and guidance
- the associated Microsoft® Excel 2010 reporting pack named “Costs and Volumes Reporting Pack”
- the associated commentary named “Strategic Commentary”.

1.4. The purpose of the information we collect in the Costs and Volumes Reporting Pack is to monitor DNOs performance in RIIO-ED1 and to provide information that will inform the next Price Control review.

## General instructions for completing the worksheets

1.5. 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**

1.6. 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.

1.7. For actual costs DNOs must provide data in the prices of the year under report (ie 2015-16 data should be in 2015-16 prices). Actual costs should be entered inclusive of real price effects (RPEs). Forecast costs should be reported in 2012-13 prices.

## **Allocation of indirects**

1.8. The DNO must provide their methodology for allocating indirects in the Strategic Commentary submitted alongside the Costs and Volumes Reporting Pack each year. Any changes to the methodology from the previous year should be highlighted.

1.9. 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.

1.10. 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**

1.11. The costs reported are differentiated into Cost Types. The following lists the costs 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)
- Street Works
- Other
- Related Party Margins
- Customer Contributions
- Cost Recoveries.

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

## **Income**

1.13. 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 and input worksheets

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### 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 19-33. This will automatically link to the C1 matrices.

### Changes Log

2.4. 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

2.5. 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

2.6. 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

2.7. 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.

2.8. The DNO is not required to input any data on this worksheet.

## I1 – PCFM Inputs 2012-13

2.9. The purpose of this worksheet is to convert the data summarised in I2 – PCFM Inputs Nominal into 2012-13 prices. This information will be used as inputs to the ED1 Price Control Financial Model (PCFM) and therefore must be in 2012-13 prices. This information will be used in the Annual Iteration Process for the ED1 PCFM. Conversion to 2012-13 prices uses information in worksheet I6 – RPI

2.10. Allowed expenditure for specified areas is also derived from information submitted in the RIGs. These areas are:

- visual amenity projects
- worst served customers
- smart meter roll-out.

2.11. Allowed expenditure for each of these areas is calculated based on actual expenditure and volume information. The formulae contained in the relevant licence conditions are replicated in this worksheet. The information required is:

- Actual expenditure or volumes - submitted in relevant worksheets of the reporting pack template.
- Fixed values from the relevant conditions of the electricity distribution licence – contained in worksheet I3 – licence values. These values are fixed and no input is required from DNOs.

2.12. The Authority may direct revised PCFM variable values for these areas. To ensure that the information in the RIGs is up-to-date DNOs are required to input the directed PCFM variable values in the relevant yellow cells in this worksheet. DNOs are only required to input values for the Regulatory Years prior to the Regulatory Year under report.

## I2 – PCFM Inputs Nominal

2.13. The purpose of this worksheet is to summarise the data that is submitted by DNOs in the RIGs and used in the ED1 Price Control Financial Model (PCFM). The information in this worksheet is in nominal prices.

2.14. No input is required from DNOs. This worksheet links to other worksheets in the reporting pack.

2.15. Actual Totex expenditure is derived from information submitted by DNOs in other worksheets of the reporting pack. It is split between 7 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 ~~and~~ value added services (DRS 8) net income/costs and bid preparation costs to be netted off. ~~This~~These calculations ~~s-is are~~ are in this worksheet.

2.16. This worksheet also collates information used to derive allowed expenditure in the following areas:

- visual amenity projects
- worst served customers
- smart meter roll-out.

### **I3 – Licence Values**

2.17. 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 worksheet I1 – PCFM inputs 2012-13 and, in the case of forecast amount related to theft recovery, in the worksheet I5 – Theft Recovery.

2.18. No input is required from DNOs.

### **I4 – Revenue Pack Inputs**

2.19. The purpose of this worksheet is to summarise the information submitted in this reporting pack template that is used in the Revenue Reporting Pack (Annex C).

2.20. No input is required from DNOs. This worksheet links to other worksheets in the reporting pack template.

### **I5 – Theft Recovery**

2.21. The purpose of this worksheet is to report costs, volumes and revenues associated with Theft Recovery activities as set out in CRC 5F (Treatment of income from recovery in respect of Relevant Theft of Electricity) and related to the provisions of Standard Condition 49 (Electricity Distribution Losses Management Obligation and Distribution Losses Strategy) of the electricity distribution licence.

2.22. Reported Income from Theft Recovery (Rows 9 to 11) is automatically deducted from actual controllable opex (ACO) in worksheet I2 – PCFM inputs nominal. The purpose of this is to ensure that the reported income is shared with consumers via the Totex Incentive Mechanism (TIM).

2.23. This worksheet excludes the reporting of income from services provided under DRS5. Revenue protection services which should be reported under worksheet CV39 – Directly Remunerated Services.

2.24. 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<sup>1</sup>
- Total Costs Incurred in Respect of Relevant Theft of Electricity.

2.25. When reporting under:

- Recovery of Value of Electricity Taken (Row 9), 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 10), '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.

2.26. Total costs incurred in respect of relevant theft of electricity (Row 14) 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.<sup>2</sup>
- 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.

2.27. Additional data on Distribution Losses related activities is reported in worksheet E4 – Losses Snapshot of the Environment and Innovation Reporting Pack (Annex J).

## I6 – RPI

2.28. The purpose of this worksheet is to calculate the index needed to convert nominal costs into 2012-13 prices. This information is used in worksheets I1– PCFM

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<sup>1</sup> DNOs are not required to report the forecast amount of revenue relating to theft recovery in the RIGs. Worksheet I4 contains the value for the Forecast amount related to theft recovery that is fixed as part of CRC 5F. If applicable to the calculation of income from the theft recovery, the value for the Forecast amount related to theft recovery is automatically included within any deduction from ACO in worksheet I2 – PCFM inputs nominal.

<sup>2</sup> An initial investigation could incur costs across multiple years, so this avoids any potential double counting of the associated volume.

Inputs 2012-13, S2 – Summary of C1s Real and M13 – Uncertainty Mechanism Information.

2.29. Ofgem will inform the DNOs by the end of May what the relevant retail prices index (RPI) input value for the previous Regulatory Year was. DNOs are required to input the RPI for the relevant Regulatory Year. DNOs should enter the arithmetic Regulatory Year average of the general index of retail prices for all items published by the Office for National Statistics (ONS) each month (ONS code name is CHAW). The values must be entered to 3 decimal places.

## 3. Instructions for completing the financial worksheets and commentary

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### Introduction

3.1. The purpose of this chapter is to provide instructions and guidance on the completion of the financial worksheets. The information input into these worksheets will be used to derive inputs for the purposes of the tax clawback for use in the Price Control Financial Model (PCFM) as well as recording detailed debt and interest information. The reporting pack also reconciles cost data collected in the Costs and Volumes worksheets to the audited regulatory accounts.

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

3.3. The following worksheets are no longer included in the pack and are not required to be submitted to Ofgem: F1 – Financial Statements, F3 – Financing Requirements, F4 – Tax Computation, F5 – Allocation to Tax Pools, F7 – Pensions, F9 – Links.

3.4. Worksheet F6 – Tax Clawback has been incorporated into F2 – Net Debt and Tax Clawback.

3.5. DNOs should submit numbers in £m correct to two decimal places.

3.6. For *F8 – Reconciliation to Regulatory Accounts* only error checks (orange cells) have a tolerance which is correct to the nearest whole number, to align with the precision of the Regulatory Accounts.

3.7. All values in these worksheets are reported in nominal prices.

3.8. Any definitions required to complete the financial worksheets can be found in Annex A – Glossary.

### **F2 – Net Debt & Tax Clawback (Reported in RFPR, not required for 2018-19 reporting)**

3.9. The purpose of this worksheet (now integrated with F6 – *Tax Clawback Data*) is to provide a framework for DNOs to provide detailed information on their net debt position and an analysis of interest income and expenses. This information is collected for ongoing monitoring of DNOs' financial stability and is adjusted to match the regulatory definitions for use in the Tax Clawback calculation.

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

3.11. Further specific guidance:

- The net debt summary is a reconciliation between the debt items A to H and total net debt (I to O).
- There are additional manual input lines to reconcile any differences that may arise between the net debt analysis and net debt per the balance sheet due to inclusion of derivatives and classification differences.
- For A to H, balance sheet debits and cash must be entered as negative values and balance sheet credits must be entered as positive values. Input year end values as per the Regulatory Accounts.
- For A to O space for associated commentary has been provided.

3.12. The worksheet makes adjustments to the Regulatory Accounts Net Debt and Net Interest figures to bring them in line with the regulatory definitions contained in the July 2009 open letter to network operators on the tax clawback, which sets out ex post adjustments following DPCR4.<sup>3</sup>

3.13. The adjusted Net Debt and Net Interest figures will be required to calculate the value of the tax benefit due to excess gearing as part of the RIIO-ED1 Annual Iteration Process.<sup>4</sup>

3.14. Where short term loans to related parties display the characteristics of long term loans, eg repeated renewal, they should be included within net debt as long term loans.

3.15. Where a company has restricted cash balances, these should be excluded from cash and short-term deposits. This should be presented within the other adjustment rows of the net debt conversion table.

## **F8 – Reconciliation to the Regulatory Accounts (Reported in RFPR, not required for 2018-19 reporting)**

3.16. The purpose of this worksheet is to reconcile total expenditure balances as per Regulatory Accounts to total expenditure reported in the Costs and Volumes Reporting Pack.

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<sup>3</sup> [Clawback of tax benefit due to excess gearing \(July 2009\)](#)

<sup>4</sup> [Section 3 - Adjustments driven by gearing levels and corporate debt interest costs \('tax clawback'\) methodology \(ED1 Price Control Financial Handbook\)](#)

3.17. DNOs are required to detail all reconciling items between the Regulatory Accounts and Costs and Volumes Reporting Pack in the yellow input cells.

3.18. 'Other' column does not need to be completed for the 2017/18 reporting. This is included at this stage to bring the table into alignment with other sectors.



## 4. Instructions for completing the costs worksheets

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### Purpose of costs worksheets

4.1. 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

4.2. 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
- Quality of Service
- Unrestricted Domestic Tariff
- Connections

4.3. Data on the number of customers is automatically populated from M14 Drivers row 9..

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

4.5. Total Expenditure data is automatically populated from I1 PCFM Inputs 12-13 by summing rows 11 to 17.

4.6. RIIO-ED1 allowances should be populated following the last Annual Iteration Process from row 46 in the PCFM “Totex” tab.

4.7. 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 AI14 to AP14
- Customers Minutes Lost (including exceptional events): cells AI15 to AP15
- Customers Interrupted (excluding exceptional events): cells AI16 to AP16
- Customers Minutes Lost (excluding exceptional events): cells AI17 to AP17

4.8. For the Unrestricted Domestic Tariff, figures are adjusted for a 3100 kWh typical domestic consumption value (not including the domestic customer rebate and assuming 365 days in a year) and entered manually by the licensee (12/13 price base).

4.9. 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 (Nominal)**

4.10. 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)**

4.11. This worksheet is automatically populated from the C1 matrices and I6 – RPI. 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)**

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

## **S4 – C1 summary**

4.13. This worksheet is automatically populated from the C1 matrices and provides an in-year summary of each C1 cost matrix. Cell D7 allows the selection of the year. It provides a summary of:

- Cost Type split
- Total gross costs
- Total net costs before allocations
- Allocation of Income relating to Closely Associated Indirects (CAIs)
- Allocation of Income relating to Business Support Costs (BSCs) and IT & Telecoms (Non-Operational)
- Indirect activity allocations to Connections outside of the Price Control
- Indirect activity allocations to non-distribution (excluding Connections)
- Total net costs after allocation
- Indirect activity allocation to High Value Projects – reopener
- Indirect activity allocation to Moorside – reopener
- Indirect activity allocation to Connections inside the Price Control.

## C1 – cost matrix (2011 to 2023)

4.14. These worksheets (13 in total for years 2010-11 to 2022-23) 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 10 to 59)**

4.15. Total Gross Costs (Row 35) and total net cost before allocations (Row 38) and the associated Cost Type split (Rows 11-18 and 36-37) are automatically populated from the relevant C and CV worksheets named in Row 8.

4.16. The only input cells are for Related Party Margins. The gross costs in Rows 19-33 and net costs in Rows 44-58 should be split by each relevant Related Party. The Related Party name is automatically linked from the cover sheet.

4.17. Row 38 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.

4.18. The allocations as described below are necessary in order to calculate total net costs inside the price control under the correct activities in Row 80.

### **Allocation of income relating to Closely Associated Indirects (CAIs), Business Support Costs (BSCs) and Non-Operational Capex (Row 60).**

4.19. 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.

4.20. Therefore, in Row 60, 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 E60 within the Price Control must be entered as a positive number and the adjustment to the net CAIs in cells AZ60:BC60, net BSCs in cells BE60:BG60 and net Non-Operational Capex in cells AE60:AH60 must be entered as a balancing negative numbers.

4.21. 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-ED1 baseline net cost allowances for network investment, CAIs, BSCs and Non-Operational Capex.

4.22. 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 62-69)**

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

4.24. In Rows 63 to 68, 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 AZ63:BC68), BSCs (cells BE63:BG68) and Non-Operational Capex (cells AE63 to AH68) should be entered as negative numbers. The adjustments to Connections outside the Price Control should be entered as balancing positive numbers (cells BU63:BU68).

### **Indirect Activity Allocations to Non Distribution (excluding Connections) (Rows 72-79)**

4.25. 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.

4.26. In Rows 72 to 77, 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 AZ72 to BC77), BSCs (cells BE72 to BG77) and Non-Operational Capex (cells AE72 to AH77) should be entered as negative numbers. The adjustments to other activities outside the Price Control should be entered as balancing positive numbers (cells BP72:BT77, BV72:BW77 and BY72:BZ77).

### **Memo: Indirect Activity Allocations (Rows 82-109)**

4.27. 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-ED1 (Rows 84 to 91)
- Moorside (Rows 93 to 100).
- Connections Inside the Price Control (Rows 102 to 109).

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

4.29. The adjustments to High Value Projects RIIO-ED1 (cells AK85:AK90), Moorside (AM94:AM99) and Connections Inside the Price Control (cells E103:E108) should be entered as positive numbers. The adjustment to the corresponding Rows in CAIs (columns AZ to BC), Business Support (columns BE to BG) and Non-Operational Capex (columns AE to AH) should be entered as balancing negative numbers.

## Overview

### Cost Type split

4.30. 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 916). This Cost Type data feeds into the worksheets C1 matrices.

4.31. 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.

4.32. 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

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

4.34. 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

4.35. 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

4.36. 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.
- ~~Cost Recoveries~~

4.37. The gross costs and Customer Contributions of the activities listed should be entered.

4.38. 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

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

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

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

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

4.43. 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.

4.44. 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-ED1 RIGs or accompanying commentary.

4.45. The activities for which expenditure should be reported comprise the following which are defined in Annex A - Glossary:

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

4.46. 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.

4.47. 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 99.

## **C4 – IT & Telecoms (Non-Operational)**

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

4.49. 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.

4.50. 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.

4.51. 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.

## **C5 – Property (Non-Operational)**

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

- Property (Non-Operational).

## **C6 – Vehicles and Transport (Non-Operational)**

4.53. 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).

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

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

4.55. 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)**

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

4.57. 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.

4.58. 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.

4.59. 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**

4.60. 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

4.61. 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.

4.62. 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.

4.63. 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.

## **C10 – Wayleaves (CAI)**

4.64. The worksheet collects costs on the Wayleaves activity to feed the input to the C1 cost matrix. It also provides a split of Wayleaves.

4.65. 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.

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

4.67. 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.

4.68. 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)**

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

4.70. The key term for this worksheet, defined in Annex A - Glossary, is:

- Vehicles and Transport (CAI).

## **C12 – Core Business Support**

4.71. 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.

4.72. 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 Street Works)
- CEO.

4.73. 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.

4.74. The total gross costs in Row 17 should reconcile with the total gross costs by category type in Row 33.

4.75. Income should be reported by year for the following categories, which are defined in Annex A - Glossary:

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

4.76. The total net costs in Row 20 should reconcile with the total net costs by category type in Row 36.

4.77. Once the total income of each category type has been entered, the check cells will ensure that the total income reconciles on Row 23.

### **C13 – IT&T (Business Support)**

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

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

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

- IT & Telecoms (Business Support).

### **C14 – Property Management (Business Support)**

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

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

4.83. 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.

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

- Property Management (Business Support).

## **C15 – Atypicals Non Severe Weather (2011 to 2023)**

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

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

4.87. 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).

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

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

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

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

4.91. Provision data for DPCR5 included all provisions. The revised treatment commences from 1/4/2016 with no restatement of DPCR5 data. The amounts

reported within the columns for “Utilised” are to be further analysed into (a) source by payer (ie DNO or related parties), (b) cost row type reported within Total Cost Matrix and for Totex only (c) the cost category for the PCFM .

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

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

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

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

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

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

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

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

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

4.99. Tables then sum automatically for:

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

**Allocation of Utilisation in year to PCFM cost categories**

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

4.101. For the avoidance of doubt the costs entered in this worksheet are direct costs only. Any associated indirect costs will be captured in the relevant indirect worksheets. DNOs will then allocate the indirect associated with Atypicals in C1 (Rows 72 to 77).

## **C16 – Smart Meters Outside Price Control**

4.102. This worksheet is designed to collect the elective smart meter data costs for all years of RIIO-ED1 and DCC licence fee costs in the last two years of the price control, after the end of the smart meter roll out.

4.103. 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.

4.104. 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.

4.105. 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.

## **C17 – Legacy Metering Equipment**

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

4.107. 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).

4.108. 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.

4.109. 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.

## **C18 – De Minimis**

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

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

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

- De Minimis Business.

## **C19 – Other Consented Activity**

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

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

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

- Other Consented Activity.

## **C20 – Connections Outside Price Control**

4.116. 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.
- Cost Recoveries

4.117. The gross costs and customer contributions of the activities listed should be entered.

4.118. 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 and Volumes Reporting Pack must match the total costs inside the Price Control reported in column Q of table CR12 in the relevant annual Connections Reporting Pack.

## **C21 – Out of Area Networks**

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

4.120. 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.

4.121. 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.

4.122. 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 30.

## **C22 – Pass Through**

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

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

- Licence Fee Payments
- Business Rates Payments
- Pass-Through Transmission Connection Point Charges Incurred
- Smart Meter Communication Licensee Costs
- Smart Meter Information Technology Costs
- Ring Fence Costs
- Shetland Variable Energy Costs.

4.125. No Cost Type split is required.

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

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

## **C23 – Other Non Activity Based Costs (NABC)**

4.128. 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.

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

- Any Other Ex-Gratia/Goodwill Compensation Payments
- Bad Debt Expense (net of recoveries)
- Carbon Reduction Commitment Scheme
- Connection Guaranteed Standards of Performance Compensation Payments

- Contingent Pension Asset Costs
- DG Network Unavailability Rebate Payments
- Depreciation
- Distributed Generation Standards Direction issued under Standard Condition 15A
- Ex-Gratia Compensation Payments
- Ex-Gratia Compensation Payments (Connections)
- Ex-Gratia Compensation Payments (Distributed Generation Standards Direction issued under Standard Condition 15A)
- GS Compensation Payments
- Pensions Established Deficit Repair Payments
- Proceeds of Sale of Non-Operational Assets
- Proceeds of Sale of Operational Assets
- Proceeds From Sale of Scrap
- Profit/Loss on Disposal of Fixed Assets
- Profit/Loss on sale of Fixed Assets and Scrap.

4.130. 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**

4.131. In Rows 43-64, 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 I2 – PCFM Inputs Nominal, as they are required to be netted off Totex.

4.132. In accordance with the instructions in paragraphs 1.16, all income/proceeds must be reported as a negative number.

### **Reporting of guaranteed standards and ex-gratia compensation payments**

~~4.133. All values reported as guaranteed standards or ex-gratia compensation payments should be consistent with values reported elsewhere in the RIGs (Guaranteed Standards of Performance Reporting Pack and Connections Guaranteed Standards (SLC 15A) Reporting Pack).~~

~~4.134. Reconciliation tables have been included in Rows 68-216 to collate details of payments made by the DNO. These separately identify payments made in the current year relating to events in the previous year and payments made in the current year relating to events that year, and feed through to Rows 27-33. Therefore payments reported in this worksheet are the total of actual payments made in the reporting year.~~

~~4.135. Reconciliation tables are included for the following categories:~~



- ~~GS Compensation Payments~~
- ~~Ex Gratia Compensation Payments~~
- ~~Connections Guaranteed Standards of Performance Compensation Payments~~
- ~~Ex Gratia Compensation Payments (Connections)~~
- ~~Distributed Generation Standards Direction issued under Standard Condition 15A~~
- ~~Ex Gratia Compensation Payments (Distributed Generation Standards Direction issued under Standard Condition 15A)~~
- ~~Any Other Ex Gratia/Goodwill Compensation Payments.~~

~~4.136. Reconciliation tables are only required for the years 2015/16 onwards, as reconciliations for the DPCR5 years will have been performed previously in the DPCR5 RIGs. Therefore historic information prior to 2015/16 should be entered directly in Rows 27-33.~~

~~4.137-4.133.~~ -To clarify, costs entered in this worksheet are direct costs only. Any associated indirect costs will be captured in the relevant indirect worksheets. DNOs will then allocate the indirect associated with NABC in C1 (Rows 72-77).

## C24 – Related Party Margin

~~4.138-4.134.~~ 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.

~~4.139-4.135.~~ The table will be used to help identify recharges that flow through more than one related party before reaching the DNO and provide the percentage of external revenue so that margins can be identified and removed, where appropriate, for comparison to the RIIO-ED1 allowances and to calculate revenue. If External Income accounts for 75% or more of the Related Party income then the margin will be allowable, if not it will be removed.

~~4.140-4.136.~~ If external data is not provided, then the revenue RP margin adjustment will automatically exclude the entire margin for that related party.

~~4.141-4.137.~~ The table allows DNOs to report data for up to fifteen related parties that transact with the DNO. Where the DNO transacts with more than fifteen related parties the tables in the worksheet must be completed for those related parties that have the highest turnover from the DNO. Other related parties must be reported in the commentary to this worksheet with the details required in this worksheet.

~~4.142-4.138.~~ 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 M to Y the turnover data for the related party as charged to each DNO in the group, other related parties and external customers. Input as positive numbers. Input in the block M to Y the margin – a positive reflects that the Related Party is making a profit, while a negative indicates a loss.

4.143-4.139. The Related Party Margin impacting on the DNO directly in column M to Y (for 2011-2023 reporting years) will be automatically populated from the relevant year's analysis per Related Party, from Row 46 and below.

4.144-4.140. Using this Total Margin per Related Party block, in columns AC to AH for 2016, 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 Related Capex – Other
- Faults
- 100% Revenue Pool
- Controllable Opex.

4.145-4.141. 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.

4.146-4.142. There are automatic inputs from each years' C1 Table into columns headed:

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

4.147-4.143. These inputs calculate 'Totex – Within price Control' automatically.

4.148-4.144. Values in the manual input column 'RP Margin included in indirects allocated outside of Totex PC activities' (AJ for 2016) should be entered as positive values. The Total input here should equal:

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

## 5. Instructions for completing the cost and volume worksheets

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### **Purpose of cost and volume worksheets**

5.1. 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**

5.2. 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**

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

5.4. 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**

5.5. 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**

5.6. 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.

5.7. 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

5.8. 363 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 28-130). These asset movements are then linked to the summary volumes tables for each year (V5 – volume matrices) and then to V1 - total asset movements. The following CV tables require this data:

- CV1 – Primary Reinforcement
- CV2 – Secondary Reinforcement
- CV3 – Fault Level Reinforcement
- CV4 – New Transmission Capacity Charges
- CV5 – Diversions
- CV6 – Diversions Rail Electrification
- CV7 – Asset Replacement
- CV12 – Black Start
- CV13 – BT21C
- CV14 – Legal and Safety
- CV15 – QoS and North of Scotland resilience
- CV16 – Flood Mitigation
- CV17 – Rising Laterals and Mains
- CV18 – OH Clearances
- CV19 – Worst Served Customers
- CV20 – Visual Amenity
- CV21 – Losses
- CV22 – Environmental Reporting
- CV23a to e – High Value Projects RIIO-ED1
- CV24 – High Value Projects DPCR5
- CV25a to d – Moorside, Shetland and Subsea cables
- CV26 – Faults
- CV27 – Severe Weather 1-in-20
- CV28 – Occurrences Not Incentivised (ONIs)
- CV32 – Dismantlement
- CV36 – Network Innovation Allowance (NIA)
- CV37 – Network Innovation Competition (NIC)
- CV38 – Innovation Funding Incentive (IFI) and Low Carbon Network (LCN) Fund
- CV39 – Directly Remunerated Services (DRS).

### CV1 – Primary Reinforcement

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

5.10. DNOs must report work undertaken to manage capacity constraints (including voltage) affecting either an individual substation or substation group. Within these

categories, reporting must be disaggregated between reinforcement for n-1 or n-2 schemes.

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

- Conventional – substation: reinforcement using Conventional Solutions at substations
- Conventional – circuit: reinforcement using Conventional Solutions on circuits
- Innovative: any Innovative Solution.

5.12. The cost and capacity released should be apportioned according to the type of solution used. A single scheme involving multiple types of solution should be reported across all relevant rows. The costs should be allocated based upon the actual costs of each solution. The capacity released should be the amount associated with each solution. For example, a total scheme may cost £10m and release 100MVA but the values reported would be £9m and 60MVA for the conventional part and £1m and 40MVA for the Innovative part. Where a solution does not provide firm capacity, the capacity released should be calculated as set out in the guidance to the Innovative Solutions worksheet.

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

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

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

5.16. 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.

## CV2 – Secondary Reinforcement

5.17. 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. DNOs must report work undertaken to manage capacity constraints affecting either a substation or circuit.

5.18. For capacity constraints affecting a substation, the table is disaggregated between reinforcement done at pole mounted and ground mounted substations. The type of solution is disaggregated between Conventional and Innovative solutions. Innovative solutions are those that the DNO has included in the Innovative Solutions worksheet. Conventional solutions are any other activities. The DNO must provide the capacity released by the work at time of energisation (in MVA). 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. If a reinforcement scheme includes both Innovative and Conventional solutions, the capacity should be apportioned between the two categories on the basis of the capacity released by each solution type. The cost should be apportioned on the basis of the cost of each solution type.

5.19. For capacity constraints affecting a circuit, the table is disaggregated between LV and HV network. The type of solution is disaggregated between Conventional and Innovative solutions. Innovative Solutions are those that the DNO has included in the Innovative Solutions worksheet. Conventional solutions are any other activities. Volume information is not required for circuit reinforcement. If a reinforcement scheme includes both Innovative and Conventional solutions, the cost should be apportioned on the basis of the cost of each solution type.

5.20. 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. DNOs must report any socialised reinforcement activity that is required under Standard Licence Condition 13C, in the Connection pack.

5.21. 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

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

5.23. 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).

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

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

5.26. Typical conventional solutions are:

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

5.27. Anticipated innovative solutions are:

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

5.28. 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.

5.29. 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.

5.30. 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

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

5.32. 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)**

5.33. In RIIO-ED1, 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.

5.34. 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.

5.35. 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.

5.36. 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 136.

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

## **CV5 - Diversions**

5.38. 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).

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

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



5.41. 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).

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

5.43. 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.

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

5.45. 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 Row 157.

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

## **CV6 – Diversions (Rail Electrification)**

5.47. 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).

5.48. 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.

5.49. 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.

5.50. 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.

5.51. The check cell in Row 210 tests if these two sections reconcile.

5.52. 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).

5.53. 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.

5.54. 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.

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

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

5.57. 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.

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

## **CV7 – Asset Replacement**

5.59. This worksheet is for the input of cost and volume data for condition based replacement of assets and for civil works driven by asset replacement.

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

- Asset Replacement
- Civil works Driven by Asset Replacement.

5.61. For Asset Replacement reporting, DNOs should report on asset additions (cells M28:Y130) and disposals (cells AD28:AP130) 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.

5.62. 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.

5.63. The unit cost tables on the right of the worksheet (columns BL28 to BX130) are formula driven from the cost and volume data entered against plant assets. They calculate the annual unit cost.

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

5.65. The costs of acquiring and the credits associated with utilising Strategic Spares are to be entered on to row 134. No volumes are reported for strategic spares in Table CV7, but are recorded against the relevant row of the CV table where the strategic spare is subsequently utilised. Instructions on how to record Strategic Spares costs are included below..

5.66. 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 134 of Table CV7.
- 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 134 of Table CV7 (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).

5.67. For Civils Driven by Asset Replacement, only costs (no volumes) should be entered (cells M150:Y153) by the six categories listed.

5.68. 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.

5.69. 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.

5.70. At the bottom of this worksheet are two memo items:

- Steel mast memo
- Asset Replacement memo.

5.71. 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.

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

## **CV8 – Refurbishment No Secondary Deliverable Improvement and CV9 – Refurbishment with Secondary Deliverable Improvement**

5.73. There are two refurbishment worksheets:

- CV8 – Refurbishment No SDI
- CV9 – Refurbishment SDI.

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

5.75. The two separate worksheets enable expenditure for activities that have the potential to impact Network Asset Secondary Deliverables, to be separately identified from all other Refurbishment expenditure.

5.76. Some, but not all, asset types are included in the Network Asset Secondary Deliverables for RIIO-ED1. The asset types where Network Asset Secondary Deliverables are agreed may differ between licensees.

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

5.78. There are two types of Refurbishment activity:

- *Type 1 – Refurbishment SDI*: Refurbishment activities that, if the licensee were to agree (either currently, or in the future) a Network Asset Secondary Deliverable for the relevant asset type, would relate to interventions that would be included in the measure of delivery of the Network Asset Secondary Deliverables. All Type 1 Refurbishment activities are reported on worksheet CV9 – Refurbishment SDI, irrespective of whether the licensee has agreed Network Secondary Deliverables.
- *Type 2 – Refurbishment no SDI*: Refurbishment activities that, if the licensee were to agree (either currently, or in the future) a Network Asset Secondary Deliverable for the relevant asset type, would relate to interventions that are not included in the measure of delivery of the Network Asset Secondary Deliverables. All Type 2 Refurbishment activities are reported on worksheet CV8 – Refurbishment No SDI, irrespective of whether the licensee has agreed Network Secondary Deliverables.

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

5.80. Refurbishment activities that are reported in the Refurbishment – No SDI worksheet are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Annex A - Glossary. These are Type 2 activities.

## **CV8 – Refurbishment No SDI**

5.81. This table is for the input of cost and volume data related to Type 2 Refurbishment works.

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

5.83. Refurbishment activities that are reported in the Refurbishment – No SDI are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Annex A - Glossary. These are Type 2 activities.

5.84. The volume data to be reported shall represent the number of assets where Refurbishment - No SDI activities have been undertaken, irrespective of whether

multiple Refurbishment – No SDI activities have been undertaken on the same asset (eg if two Refurbishment – No SDI 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 – No SDI work has been undertaken

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

- each joint or termination where Refurbishment – No SDI work has been undertaken; and

each distinct hydraulic, or gas, section where Refurbishment – No SDI work has been undertaken.

5.85. 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.

5.86. 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 132.

## CV9 – Refurbishment SDI

5.87. This table is for the input of cost and volume data related to Type 1 Refurbishment works.

5.88. Cost and volume data is reported against the asset type upon which the Refurbishment activity was undertaken. All Type 1 Refurbishment works should be recorded in this table irrespective of whether a Network Asset Secondary Deliverable has been agreed for this asset category in the RIIO-ED1 period.

5.89. Refurbishment activities that are reported in the Refurbishment –SDI table are identified in the Refurbishment and Repairs & Maintenance Task Allocation Tables in Chapter 4 of Annex A - Glossary. These are Type 1 activities.

5.90. Asset categories associated with a Health Index Category that has an Asset Replacement or Refurbishment SDI activity included as where the individual licensee has an agreed Network Asset Secondary Deliverables should be identified by inputting 'Yes' in the column H (headed 'Is there a Network Asset Secondary Deliverable agreed for this asset category in the RIIO-ED1 period?') (cells H28 to H131). A 'yes' should be indicated irrespective of whether the licensee has carried out Refurbishment SDI activity for the asset category. The use of the 'yes' indicator This enables expenditure relating to activities that contribute to delivery of the Network Asset Secondary Deliverables agreed by the licensee, to be separately identified from all other Refurbishment expenditure.

5.91. Asset categories which are not associated with the ~~where the individual licensee does not have an~~ agreed Network Asset Secondary Deliverables should be identified by inputting 'No' in column H.

5.92. The volume data to be reported shall represent the number of assets where Refurbishment - SDI activities have been undertaken, irrespective of whether multiple Refurbishment – SDI activities have been undertaken on the same asset (eg if two Refurbishment – SDI 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.

5.93. 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.

5.94. 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 132.

## CV10 – Civil Works Condition Driven

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

5.96. 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.

5.97. 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.

5.98. 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.

5.99. 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 143.

## CV11 – Operational IT&T

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

5.101. 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.

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

5.103. For each Operational IT category, DNOs are required to enter a cost breakdown for each distinct programme, project or initiative. Check cells in Row 182 confirm that the total costs for each of these separate programmes, projects or initiatives reconciles with the total costs reported for Operational IT&T in Row 138.

5.104. 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.



## CV12 – Black Start

5.105. This table provides expenditure and activity on Black Start resilience enhancement for electrical distribution systems and associated telecoms and SCADA assets at DNO substations with a secondary voltage of 11kV (or 6kv) excluding single customer sites as defined in ENA Engineering Regulation G91. It will be reviewed in light of the recommendations of the Electricity Task Group to the Energy Emergency Executive Committee (E3C).

5.106. In the first table 'Sites resolved' DNOs should report the volumes of sites where Black Start 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.

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

5.108. In the second table '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.

5.109. The volumes of sites requiring the Securing of Existing Telecommunications Infrastructure should also be recorded.

5.110. 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 138.

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

5.112. 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 "Black Start Resilience"), are:

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

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

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

## **CV13 – BT21CN**

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

5.116. 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.

5.117. The categories for this worksheet, defined in Annex A - Glossary (under the prefix "BT21CN") are:

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

5.118. 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.

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

5.120. The unit cost tables on the right of the worksheet (columns BL to BX) 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.

5.121. 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 137.

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

## **CV14 – Legal and Safety**

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

5.124. The categories for which gross costs and volumes are to be reported in 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

5.125. 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.

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

5.127. 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 160.

5.128. 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**

5.129. 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.

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

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

5.131. 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 Rows 144.

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

## CV16 – Flood Mitigation

5.133. 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.

5.134. DNOs should input costs and volumes associated with:

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

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

5.136. 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).

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

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

5.139. 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.

5.140. 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.

5.141. 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 183.

5.142. 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.

5.143. The information provided in this table and in M1 - Flood Mitigation (site) will be shared with DECC.

## **CV17 – Rising and Lateral Mains (RLMs)**

5.144. 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.

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

5.146. 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 43)
- Number of LV Boards (X-type network) (WM) (Row 44).

5.147. 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.

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

5.149. 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).

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

5.151. 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 total costs of the assets installed (Row 131) and inspection and maintenance activities (Row 138).

## CV18 – Overhead Line Clearances

5.152. 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).

5.153. 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.

5.154. 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.

5.155. 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.

5.156. 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.

5.157. 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.

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

5.159. 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.

5.160. 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.

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

## **CV19 – Worst Served Customers (WSCs)**

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

5.163. 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.

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

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

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

5.166. 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.

5.167. 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.

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

## **CV20 – Visual Amenity**

5.169. 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.

5.170. Costs are required by Cost Type only. No further disaggregation of costs is required.

5.171. Detailed reporting of Visual Amenity Projects is provided in worksheet E1- Visual Amenity of the Environment and Innovation Reporting Pack (Annex J). The gross costs reported in Row 17 should match those in Row 46 of worksheet E1.

## **CV21 – Losses**

5.172. 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.

5.173. 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.

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

5.175. 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 137.

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

5.177. 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**

5.178. 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.

5.179. Costs are required by Cost Type only. No further disaggregation of costs is required.



5.180. The detailed reporting is provided in worksheet E2 – Environmental Reporting of the Environment and Innovation Reporting Pack (Annex J). The gross costs reported in Row 17 should match those in Row 18 of worksheet E2.

5.181. This worksheet requires the reporting of asset additions and disposals as a result of Environmental activity.

## **CV23 – RIIO-ED1 High Value Projects Summary**

5.182. This worksheet provides a summary of all RIIO-ED1 HVPs reported in worksheets 23a to 23e. It is auto populated and requires no input from the DNOs.

### **CV23 (a-e) – RIIO-ED1 High Value Projects HVP (a-e)**

5.183. This worksheet is for the input of volume and cost data on 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. Each of the RIIO-ED1 HVPs, should be reported in a separate tab (tabs a-e). For the DPCR5 HVP the designated tab (CV24) should be used.

5.184. At the top of the worksheet (cell E6) the basic project information should be entered (ie scheme name and project/scheme ID).

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

5.186. The table “Expenditure Breakdown (by driver)” collects HVP volume and expenditure data by driver. If there are two or more investment drivers for a project the costs needs 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.

5.187. 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

5.188. Customer Contributions and Cost Recoveries costs should also be reported by driver.

5.189. 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.

5.190. Customer Contributions and Cost Recoveries should also be reported in Rows 18 and 19. The purpose of check cell in Row 23 is to ensure the total net costs in Row 20 reconciles with the total net costs by the disaggregated reporting.

## CV24 – HVP DPCR5

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

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

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

5.194. The “Expenditure Breakdown (by driver)” table populates automatically from data contained above.

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

5.196. 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 146.

## CV25 – Moorside (ENWL only)

~~5.197.~~ The purpose of this worksheet is to record the relevant DUoS costs of ENWL's Moorside project to feed into C1 and associated asset additions and disposals to feed into V1 – Total Asset Movements.

~~5.198.~~ ~~5.197.~~ Costs are required by Cost Type only. No further disaggregation of costs is required.

## CV26 – Faults

~~5.199.~~ ~~5.198.~~ 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.

~~5.200~~5.199. 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.

~~5.201~~5.200. 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.

~~5.202~~5.201. 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.

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

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.

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.

~~5.203.~~5.202. 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.

~~5.204.~~5.203. 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. For greater understanding of the impact of metal theft these costs and volumes are also reported in memo table M6 – Metal Theft.

~~5.205.~~5.204. 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.

~~5.206.~~5.205. The unit cost tables on the right of the worksheet (cells BL134:BX161) are formula driven from the cost and volume data entered.

~~5.207.~~5.206. 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.

~~5.208.~~5.207. 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 Network Asset Secondary Deliverables (NASD). This can be considered by Ofgem when assessing licensee delivery against NASD monetised risk target under Licence Condition CRC5D.

~~5.209.~~5.208. 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 162.

~~5.210~~**5.209.** This worksheet requires the reporting of asset additions and disposals as a result of unplanned incident activity.

~~5.211~~**5.210.** Fault rates are automatically populated in cells CA134:CM161.

## CV27 – Severe Weather 1-in-20

~~5.212~~**5.211.** The purpose of this table is to record the costs and volume of Troublecall unplanned incidents associated with Severe Weather 1-in-20 Events.

~~5.213~~**5.212.** The costs and volumes in this worksheet should be for only those incidents which occur as part of Severe Weather 1-in-20 events for which exceptional event exemptions have been requested as set out in CRC2D of the distribution licence, and which meet the 1-in-20 thresholds shown in the table below.

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

~~5.214~~**5.213.** The costs and volumes data provided in this worksheet should not be included in CV26 – Faults.

~~5.215~~**5.214.** The volume of unplanned incidents should be disaggregated by the voltage and Power System Power System Voltage Equipment categories listed within the worksheet.

~~5.216~~**5.215.** 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.

~~5.217~~5.216. The number of 1-in-20 severe weather events in the Regulatory Year should also be provided.

~~5.218~~5.217. All categories listed within this worksheet are defined in Annex A - Glossary.

~~5.219~~5.218. 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 162.

~~5.220~~5.219. 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)**

~~5.221~~5.220. This worksheet is for the input of cost and volume data for Troublecall Occurrences Not Incentivised (ONIs).

~~5.222~~5.221. 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.

~~5.223~~5.222. The data required for this worksheet is predominantly from the enquiry service operated by the licensee under standard condition 8 (Safety and Security of Supplies Enquiry Service). In some limited cases, DNOs may use alternative systems for some of the data, eg the management of non-urgent street lighting faults. Where this applies all relevant data should be reported in this worksheet. Reactive work that has to be addressed quickly (i.e. Category A defects requiring urgent action and Category B defects preventing work, which need resolving within a short timescale) should be reported in ONIs. Work which does not need to be resolved in a short timescale should be reported in CV7 – Asset Replacement, as effectively this is information for the DNO to inform its asset replacement programme.

~~5.224~~5.223. 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).

~~5.225~~5.224. Each category is further disaggregated into a number of sub-categories, which are also defined in Annex A - Glossary.

~~5.226~~5.225. The unit cost table is formula driven from the cost and volume data entered.

~~5.227~~5.226. 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 152.

~~5.228~~5.227. This worksheet requires the reporting of asset additions and disposals as a result of ONI activity.

~~5.229~~5.228. In respect of cut outs (metered services), where cost and activity volumes were reported as an ONI in the preceding ~~two~~ 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 Roll Out. The adjustments should be included in the reporting Regulatory Year (i.e. although the adjustment relates to interventions in a previous year, it should be reported in the cells for the current Regulatory Year of reporting).

~~5.230~~5.229. Provide commentary to explain any distortion in unit costs for rows "BL136:BX136" and "BX138:AP138" because, there will be volumes recorded in two separate rows for street lighting and cut outs but costs recorded in one row.

~~5.231~~5.230. Following the end of the Smart Meter Roll Out, any faults on smart meters should be reported under ONIs.

## CV29 – Tree Cutting

~~5.232~~5.231. This worksheet is for the input of cost and volume data related to Tree Cutting.

~~5.233~~5.232. 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.

~~5.234~~5.233. 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)
- Span length Average
- Cut Cycle
- Other work to achieve ETR 132 compliance
- Overhead network length cleared
- Network Parameters
- Tree Cutting Policy
- Tree Cutting Cycle.

5.235-5.234. The total activity costs and volumes are to be reported by the applicable categorisation listed within the each table.

5.236-5.235. The unit cost tables on the right of the worksheet (cells BL29:BX36) are formula driven from the cost and volume data entered.

5.237-5.236. 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 106.

5.238-5.237. The 'Network Parameters and ENATS 43-8 Tree Cutting Policy' table collects volume data. The total volumes data should be reported by the applicable voltage category and categorisation listed within the table.

5.239-5.238. 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.

5.240-5.239. 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

**5.241-5.240.** The worksheet reports the volumes and costs associated with inspections by asset type.

**5.242-5.241.** 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.

**5.243-5.242.** All categories within this worksheet are defined in Annex A - Glossary.

**5.244-5.243.** 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.

**5.245-5.244.** The unit cost tables on the right of the worksheet (cells BL27:BX58) are formula driven from the cost and volume data entered.

**5.246-5.245.** 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 59.

## CV31 – Repair and Maintenance

**5.247-5.246.** This worksheet is for the input of cost and volume data related to Repair & Maintenance.

**5.248-5.247.** Cost and volume data is reported against the asset type upon which the Repair & Maintenance activity was undertaken.

**5.249-5.248.** 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

Asset Type	Unit
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

**5.250-5.249.** 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.

**5.251-5.250.** Where Repair & Maintenance activities are undertaken as part of other works that are classified as Refurbishment (No SDI) or Refurbishment (SDI), then the associated costs shall be recorded on the appropriate Refurbishment worksheet.

**5.252-5.251.** The unit cost tables on the right of the worksheet (cells BL28:BX136) are formula driven from the cost and volume data entered.

~~5.253~~**5.252.** 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 137.

## **CV32 – Dismantlement**

~~5.254~~**5.253.** 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.

~~5.255~~**5.254.** Costs are required by Cost Type only.

~~5.256~~**5.255.** The key term for this worksheet, defined in Annex A – Glossary, is:

- Dismantlement.

~~5.257~~**5.256.** This worksheet requires the reporting of asset additions and disposals as a result of dismantlement activity.

## **CV33 – Substation Electricity**

~~5.258~~**5.257.** The purpose of this table is to collect information relating to the both the cost and volume of electricity consumed at substations.

~~5.259~~**5.258.** Key terms for this worksheet, defined in Annex A – Glossary, are:

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

~~5.260~~**5.259.** DNOs should insert the costs and units consumed, in MWh, at DNOs substation in the appropriate cells.

~~5.261~~**5.260.** The cost per MWh of electricity consumed at substations is derived by formula.

~~5.262~~**5.261.** DNOs should insert the total Substation Electricity Costs split by cost type at the top of the table.

## **CV34 – Smart Meter Intervention DNO**

~~5.263~~**5.262.** 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.

~~5.264.~~5.263. Provision of this data will also enable the relevant uncertainty mechanisms to operate correctly as this worksheet collects the data necessary for the operation of the Smart Meter Roll-out volume driver as set out in CRC 3E Smart Meter Roll-out Costs.

~~5.265.~~5.264. 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.

~~5.266.~~5.265. The key terms for this worksheet, defined in Annex A – Glossary, are:

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

~~5.267.~~5.266. 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 146.

5.267. At the end of the table, volume calculations for the tapering factor are included, based on CRC 3E (Smart Meter Roll-out Costs) of the electricity distribution licence. The calculations are automatic based on the input data.

5.268. 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 in accordance with paragraph 5.276.

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

5.270. 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, ~~or~~ through the D0135 (Asset Condition Report) data flow or identified proactively.

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

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

5.272. 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.

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

5.274. 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.

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

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

5.273:5.277. 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.

5.274:5.278. The following processes can be used to identify reported Category A and B defects associated with Smart Meter installation:

Process A

~~5.275-5.279.~~ 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 ~~the reporting year and the reporting year -1 during RIIO-ED1~~ (ie for 2016-17 reporting, the report should cover the period from 01/04/2015 to 31/03/2017 ~~and therefore will contain data for 2015-16 and 2016-17~~).

~~5.276-5.280.~~ 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 ~~disregarded~~.

~~5.277.~~ ~~As all Category A and B defects require the Meter Operator to stop work on site and return to change the meter at a later date once the DNO issue has been rectified, if the Smart Meter installation date is not within 24 months after the defect resolution date, the defects are disregarded.~~

~~5.278.~~ ~~It is assumed that the remaining defects (ie those that have a Smart Meter Installation within 24 months of the defect rectification) are Smart Meter related. The confirmation of meter defect and details of work undertaken are reviewed to separately identify DNO-related defects and non-DNO defects.~~

~~5.279-5.281.~~ 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 ~~two~~ preceding regulatory years to the subsequent Smart Meter ~~i~~nstallation, and information about the ~~s~~Smart ~~m~~eter ~~i~~nstallation 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 ~~prior two~~ previous years to identify any additional Smart Meter Interventions which took place in those years (~~'Smart Meter Interventions' is defined in CRC3E~~). 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. ~~Any additional Smart Meter Interventions not originally reported against the two prior years should be reported as a restatement against the Regulatory Year of reporting (ie Smart Meter Interventions – prior years' restatement). Smart Meter Interventions reported in any given regulatory year, must accord with the definition given in CRC3E. 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 year. Defects from reporting year -1 and reporting year -2 should be compared against updated data flows used for the identification of smart meter installations. Any defects now identified as associated with Smart Meter installation should be reported as an adjustment in both the Smart Meter and ONIs tables.~~

Process B (applies only to category B defect notifications)

~~5.280.~~**5.282.** 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).

~~5.281.~~**5.283.** 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.

~~5.282. Note, for the avoidance of doubt and based on the licence definitions of a smart meter intervention, if you do one or more activities in a regulatory year as part of the same smart meter installation, this counts as one intervention in the year. 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 year.~~

~~5.283. Proactive Interventions: Proactive Interventions are instances where the DNOs become aware of defects that would prevent the installation of a Smart Meter (for example, where the DNO receives one category B notification from a supplier, but can identify other properties on the same street that will have the same issue). DNOs should undertake the work and record the multiple interventions if it is the efficient way of managing the network. DNOs will need to maintain records of these instances and be able to provide details of the work completed and justification for inclusion as a proactive intervention.~~

~~5.284. Proactive interventions would need to be one or more of the activities defined in CRC 3E.19 to qualify. Extra care will be required to avoid double counting if a subsequent defect is reported via a supplier mechanism. One or more activities at the same Smart Meter Installation should be counted as one Smart Meter Intervention.~~

~~5.285. 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.~~

## CV35 – Operational Training (CAI)

~~5.286.~~**5.284.** 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.

~~5.287~~**5.285.** 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.

~~5.288~~**5.286.** Operational Training includes only the costs of training employee, Related Parties and Agency Staff. No contractor training costs should be reported in this activity. Where a DNO incurs costs assessing the capability of contractors, these costs should be included in De-Minimis (C18). Any costs associated with training contractors within DNO training facilities should also be reported in the same way.

~~5.289~~**5.287.** 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.

~~5.290~~**5.288.** 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.

~~5.291~~**5.289.** The check cells will ensure that the input for total costs by Cost Type and the costs by category (at gross cost level) reconcile.

~~5.292~~**5.290.** 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.

~~5.293~~**5.291.** 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.

**5.294-5.292.** 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.

**5.295-5.293.** There are no volumes to be reported in this area.

**5.296-5.294.** 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)

**5.297-5.295.** This worksheet is for reporting costs and volumes related to NIA funding. NIA is a set allowance that the licensee can use to fund innovation projects each year on a use it or lose it basis. It also records costs related to preparing bids for the Network Innovation Competition (NIC).

~~5.298~~5.296. The output of this worksheet are the following two terms that will be used in the calculation of the DNO's Allowed Distribution Network Revenue, which are defined in Annex A - Glossary:

- Eligible NIA Expenditure (ENIA term)
- Eligible NIC Bid Preparation Costs (BPC term).

~~5.299~~5.297. The table "Eligible NIA Expenditure by Project" should be used to record costs by project and by year for all projects funded through the NIA. These costs should include indirects.

~~5.300~~5.298. The table "Eligible NIC Bid Preparation Costs" should be used to record costs by year related to preparing bids for the NIC. These costs should include indirects.

~~5.301~~5.299. Total gross costs for each year in table "Costs allocated by PCFM cost type" must equal the sum of costs in each year recorded in tables "Eligible NIA Expenditure by project" and "Eligible NIC Bid Preparation Costs". The check cells in Row 157 will test this reconciliation.

~~5.302~~5.300. Under "Eligible NIA Expenditure by project" extra rows may be added to list additional NIA projects.

~~5.303~~5.301. 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 plus the total indirect costs associated with NIA (taken from the relevant C1 worksheet), reconciles with the sum of total gross costs for "Eligible NIA Expenditure by project" and "Eligible NIC Bid Preparation Costs" in Row 145.

~~5.304~~5.302. The costs reported here are for eligible expenditure only. Unrecoverable NIA Project Expenditure is an input into the Revenue Reporting Pack.

## **CV37 – Network Innovation Competition (NIC)**

~~5.305~~5.303. This worksheet is for reporting costs and volumes related to projects funded through the NIC and expenditure from the NIC project bank account. The NIC is an annual competition for funding larger-scale innovative projects that have the potential to deliver carbon or other environmental benefits to consumers.

~~5.306~~5.304. 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.

~~5.307~~**5.305.** Total gross costs in table “Costs allocated by PCFM cost type” for each year must equal the sum of costs for each year recorded for each area listed above. The check cells in Row 277 will test this reconciliation.

~~5.308~~**5.306.** 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 plus the total indirect costs associated with NIC (taken from the relevant C1 worksheet), reconciles with the sum of total gross costs for all projects.

~~5.309~~**5.307.** At the bottom of this worksheet is one memo item:

- Network Licensees’s Compulsory Contribution

~~5.310~~**5.308.** The memo table allow for the entry of the compulsory minimum contribution to the cost of projects.

## **CV38 – Innovation Funding Incentive (IFI) & Low Carbon Network (LCN) Fund**

~~5.311~~**5.309.** This worksheet is for recording costs and volumes related to projects funded through the Innovation Funding Incentive (IFI), LCN Fund and expenditure from the LCN Fund project bank account.

~~5.312~~**5.310.** The LCN Fund was an annual competition for funding larger-scale innovative projects that had the potential to deliver carbon or other environmental benefits to consumers. The LCN Fund has been replaced by the NIC for RIIO-ED1. This worksheet records costs and volumes for projects that have previously been funded but have not yet completed.

~~5.313~~**5.311.** DNOs are also required to report costs, including indirects, against the following (for each LCN Fund project), which are defined in Annex A – Glossary:

- LCN Fund Second Tier Funding, Halted Project Revenues, Disallowed Expenditure in line with the Project Direction
- LCN Fund Royalties, LCN Fund Directly Attributable Costs, Returned LCN Fund Royalties and Retained LCN Fund Royalties
- Discretionary Funding.

~~5.314~~**5.312.** Total gross costs in table “Costs allocated by PCFM cost type” for each year must equal the sum of costs for each year recorded for each area listed in paragraph above.

~~5.315~~**5.313.** The IFI was introduced in DPCR4 and its cost should only be entered for the DPCR5 years 2011-2015. Indirects should be recorded directly to IFI rather than to gross indirects and reallocated.

~~5.316:~~5.314. Eligible IFI expenditure and LCN Fund expenditure are to be reported by Cost Type together at the top of this 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 plus the total indirect costs associated with NIC (taken from the relevant C1 worksheet), reconciles with the sum of total gross costs for all projects.

## **CV39 – Directly Remunerated Services (DRS)**

~~5.317:~~5.315. Costs and revenue for each category of directly remunerated service, set out in CRC 5C (Directly Remunerated Services), are reported in this worksheet with the exception of “DRS1 Connection services” which should be reported in C1 – Connections inside the Price Control and C20 – Connections outside the Price Control.

~~5.318:~~5.316. The following DRS categories are to be reported in this worksheet and are defined in Annex A – Glossary:

- DRS2. Diversionary works under an obligation
- DRS3. Works required by an alteration of premises
- DRS4. Top-up, standby, and enhanced system security
- DRS5. Revenue protection services
- DRS6. Metering Services
- DRS7. Smart Meter Roll-out rechargeable services
- DRS8. Value Added Services
- DRS9. Miscellaneous.

~~5.319:~~5.317. Revenue for each DRS should be input in columns AD to AP. Direct costs for each category should be input by Cost Type. The total gross costs for each directly remunerated service are calculated from this information.

## 6. Instructions for completing the volume worksheets

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### Overview

6.1. 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, and will inform and enable modelling through the period.

6.2. 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

6.3. DNOs are required to input the closing balance of assets for the 2009-10 reporting year in column BK of this worksheet. The total asset movements worksheet is then auto populated by addition and disposal volumes from the activity areas.

6.4. 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.

6.5. 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.

6.6. The LV Fuses (PM) count is auto-populated from the PMT count in the top table.

6.7. This worksheet also includes a table for Shared Infrastructure for Telecoms, with the number of shared poles or towers to be input.

## **V2 - Cleansing**

6.8. The cleansing worksheet is for the input of any volume cleansing required within the period. Volumes are to be entered as net values of additions and removals. Downward adjustments should be entered as a negative number.

## **V3 – Connections**

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

6.10. This asset volume data to be reported in this worksheet relates to asset movements for all Connections activity whether the activity is within or outside of the Price Control. This is because it is not possible to split assets between these activities.

## **V4 – Other Asset Movements**

6.11. This worksheet records asset addition and disposal volumes which are not the recorded in the other V tables - V2 Cleansing, V3 Connections or in the V5 volume matrices. Where volumes occur and they are not reported in these tables (directly or indirectly), DNOs should put the volumes in this worksheet. Examples of when this might occur includes:

- consequential asset replacement
- smart meter outside price control

## **V5 – Volume Matrix (2011 to 2023)**

6.12. The volume matrix tables are auto populated from the additions of assets input in the activity worksheets. There is a volume matrix for each year from the reporting year 2010-11 to 2022-23.

## **AP1 - Age Profile**

6.13. The key terms for this worksheet, which are defined in Annex A – Glossary are:

- Average Asset Lives
- Standard Deviation of Lives
- Strategic Spares.

6.14. 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.

6.15. DNOs must input the average asset lives for the assets and the standard deviation of asset lives in the asset replacement profile section. Average asset lives are defined as the expected average age at replacement as experienced by DNO for the asset population (this is the mean value of the asset age replacement profile of the particular asset).

6.16. Assets must only appear in this table once they are energised on the network. Assets which have been re-energised must appear in the year in which the asset was originally installed.

6.17. Assets under construction must not be included in the age profile.

6.18. Strategic spares must not be included in this table until installed and energised on the system.

6.19. Assets disconnected and de-energised during the year but which are available for re-commissioning (eg pressure assisted cables) must not be entered in the age profile.

6.20. Asset data must be disclosed by operating, and not by construction, voltage.

## 7. Instructions for completing memo worksheets

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### Overview

7.1. 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.

7.2. 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.

7.3. 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

7.4. This worksheet collects volumes and costs and other key information relating to DNOs work on flood risk mitigation. Its purpose is threefold – to ensure compliance with ETR 138: Resilience to Flooding of Grid and Primary Substations (first issued in 2009 and subsequently re-issued), to provide relevant data to share with DECC and other bodies, and to provide a cross check with the aggregated costs reported in CV16 – Flood Mitigation.

7.5. 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.

7.6. 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.

7.7. 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.

7.8. 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/feasibility study” (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” (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.

7.9. 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 schemes implementation. Once complete, DNOs should enter completed against the substation concerned.

7.10. 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.

7.11. 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 185 of CV16 tests this reconciliation.

## M2 – DPCR5 Worst Service Customer (WSC) Schemes

7.12. 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.

7.13. This worksheet collects data on the number of Worst Served Customers (as defined for the DPCR5 WSC mechanism) for Regulatory Years in DPCR5 and

7.14. on the activity volumes and expenditure incurred due to schemes commissioned under the WSC mechanism. A number of tables in this worksheet populate automatically from the reference data tables (Projects with expenditure in DPCR5, 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.

7.15. 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).

7.16. 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.

7.17. 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.

7.18. In the “Projects with expenditure in DPCR5” 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.

7.19. 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.

7.20. 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.

7.21. 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.

7.22. In the “Costs (£k)” table, the DNO should insert the expenditure on each project in the Regulatory Year.

7.23. 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.

7.24. 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.

7.25. 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.

7.26. 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.

7.27. 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
- 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.

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

### **M3 – ED1 WSC Schemes**

7.29. 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.

7.30. This worksheet collects data on the number of Worst Served Customers (as defined for the ED1 Worst Served Customer mechanism) for Regulatory Years in ED1 and on the activity volumes and expenditure incurred due to schemes commissioned under the Worst Served Customers mechanism.

7.31. 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.

7.32. 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.

7.33. 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.

7.34. 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.

7.35. 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.

7.36. 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.

7.37. 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.

7.38. 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.

7.39. In the “Costs (£k)” table, the DNO should insert the expenditure on each project in the Regulatory Year.

7.40. 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.

7.41. 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.

7.42. 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.

7.43. 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.

7.44. 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.

7.45. 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.

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

## **M4 – Enablers for ED2 (NPGY and NPGN only)**

7.47. This worksheet only applies to NPgN and NPgY. An element of these DNOs allowances is specifically for investment in enablers that do not provide benefits in RIIO-ED1 but do so by the end of RIIO-ED2.

7.48. The purpose of this worksheet is to report costs and volumes associated with the deployment of enablers specifically funded to provide benefits by the end of RIIO-ED2. All costs and volumes reported here should also be reported elsewhere as they do not feed into any calculations in this reporting pack.

7.49. The table lists all smart grid enablers which do not have a net benefit in RIIO-ED1 but provide net benefits by the end of RIIO-ED2 as forecast in NPg's business plan. In columns F and G state the worksheet number and row in which costs and volumes for each enabler are reported elsewhere in the reporting pack. Where costs or volumes of an enabler are reported across more than one worksheet or row, use one of the spare rows to separate the costs and volumes reported in each place.

7.50. Costs and volumes should be reported against each enabler listed in the worksheet. If other interventions not listed are used, these should be added into spare rows in the table.

7.51. The net benefit of making these investments in total for all enablers in RIIO-ED1 by the end of RIIO-ED2 (Regulatory Year 2030-31) and over 45 years of the first deployment of any of these enablers should be calculated using Of gem's RIIO-ED1 cost benefit analysis template. The net benefit calculations should be re-run each year, updating for actual activity and using the latest information to derive the forecast.

## **M5 – Severe Weather Exceptional Events**

7.52. The purpose of this table is to record the costs and volume of all Troublecall unplanned incidents associated with Category 1, 2 and 3 Severe Weather Exceptional Events.

7.53. Where a licensee's CIs and or CMLs is affected by exceptional circumstances, as set out in CRC 2D (Adjustment of licensee's revenues to reflect interruptions-related quality of service performance), an Exceptional Event has occurred.

7.54. As defined in paragraph 2D.31, a Severe Weather Exceptional Event:



- is deemed to begin at the beginning of a 24-hour period when the number of incidents caused by the event at distribution higher voltage in that period is equal to or greater than the commencement threshold number
- is deemed to end at the time determined by the Authority having regard to:
  - such time as the licensee may have declared was the end of the severe weather event in its statement of facts;
  - the time of restoration of the last Customer off supply due to an LV incident linked to the underlying cause of the severe weather, (provided that all Customers off supply due to high voltage incidents linked to the underlying cause of the severe weather event have been restored); and
  - the end of a 48-hour period when the number of Customers off supply due to high voltage incidents linked to the underlying cause of the severe weather event has fallen to zero.

7.55. Category 1, Category 2 and Category 3 Events are defined in the Glossary.

7.56. All cost within this memo table remain in CV26 – Faults ; M5 is purely a memo table designed to capture all costs and volumes associated for all Severe Weather Exceptional Events.

7.57. It is recognised that cost collection during 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 events are reported by the following voltage disaggregation:

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

## **M6 – Metal Theft**

7.58. Given the rise in metal theft in some areas, the purpose of this worksheet is to collect costs and volumes associated with the prevention and repair of damage caused by metal theft and vandalism. This helps with visibility of all metal theft costs.

7.59. It is split into three tables:

- metal theft remedial works
- risk mitigation/other
- impact.

7.60. The first, “Metal Theft Remedial works”, records the costs and volumes related to the theft or vandalism to underground cables, overhead lines, distribution substations and other substations.

7.61. The second, "Risk Mitigation/other", records the costs and volumes associated with mitigating against metal theft and vandalism. Costs and volumes are expected to be reported for inspections and anti-theft security enhancements. Only volumes should be reported for the five other areas (substation site security, task force liaison utilities and emergency services, corporate communications/community awareness, site security and theft of stock).

7.62. The third, "Impact", records the costs and volumes of guaranteed standards/ex-gratia payments as a result of metal theft or vandalism.

## **M7 – Protection Summary**

7.63. The purpose of this worksheet is to provide Ofgem with an overview of all protection costs in order to review any variances in costs across different activity areas for the same protection type.

7.64. This sheet is auto populated from selected cells in the following worksheets:

- CV7 – Asset Replacement
- CV8 – Refurbishment no SDI
- CV9 – Refurbishment SDI
- CV12 – Black Start
- CV13 – BT21C
- CV28 – Occurrences Not Incentivised
- CV31 – Repair and Maintenance.

## **M8 – Link Box Summary**

7.65. The purpose of this worksheet is to assist in the assessment of the link boxes reopener. It provides a consolidated view of cost and volume data in relation to link box replacement due to condition, legal and safety reasons, link box failure mitigation and the volume of resulting catastrophic incidents.

7.66. Towards the end of DPCR5 there have been recent high profile cases of link boxes exploding under pavements. These are a particular issue in UKPN's area.

7.67. UKPN was provided with an additional ex ante allowance for the first two years of RIIO-ED1 so it can do short-term work on link boxes. There is a reopener mechanism which will allow for a review of costs in this area after two years. A review the efficient expenditure for the first two years may be undertaken at this point and an efficient level of expenditure for the remainder of RIIO-ED1 may be determined.

7.68. There are six specified activities reported under three tables recorded within this worksheet. In addition "other" rows have been added as placeholders to allow for revised solutions following relevant DNO/Ofgem assessments of the consolidated data.

7.69. All information in this tab should be also reported under the designated cost areas.

### Table 1: Replacement of link boxes

7.70. This records the costs of replacing poor condition link boxes which have a high risk of failure.

7.71. For the volume unit of measure this requires the reporting of asset additions and disposals.

### Table 2: Other mitigation and associated activities

7.72. There are four specified categories of reporting as follows:

- **Legal & Safety** - Installation of new link box fire blankets. The volume unit of measure is the count of sites which have had new blankets installed within the reporting period.
- **Inspection** - The volume unit of measure is based on number of link boxes inspected, irrespective of the number of times that the same asset has been inspected within the regulatory period.
- **Repair & Maintenance** - an activity and associated costs to carry out any remedial works and resolve any issues identified through inspections in order to restore the link box to an acceptable operable standard. This will include:
  - the appropriate tightening of connections
  - the removal of contamination, eg water, sediment, other deposits/residue etc
  - the replacement of existing blast blankets
  - repair or replace phase barriers as appropriate.

The volume unit of measure is based on number of link boxes repaired or maintained, irrespective of the number of different times that the same asset has been repaired or maintained within the regulatory period.
- **Street Works** - payments made under the new roads and Street Works act and traffic management act incurred as a result of works in relation link box replacement due to condition, legal & safety reasons and link box failure mitigation activities. The road charges costs are not directly linked to the related table. DNOs should calculate the apportioned costs and volumes related to link boxes and providing justification in the commentary.

### Table 3: Results

7.73. This reports the number of catastrophic link box failures in DPCR5 and RIIO-ED1.

## M9a, M9b and M9c - Street Works worksheets summary

7.74. All ongoing Street Works 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).

7.75. To separately identify Traditional Street Works costs from Permit and Lane Rental Scheme costs, and to separately identify ex ante and reopener Permit and Lane Rental costs, three Street Works memo worksheets are required as follows:

Table	Types of Cost	Type of Funding	Purpose
M9a – Traditional Street Works	Those relating to Traditional Street Works (see definition)	Ex ante	To separately identify embedded Traditional Street Work costs to inform future cost assessment.
M9b – Permit & Lane Rental (Ex Ante)	Those relating to Existing Permit Schemes and Existing Lane Rental Schemes (see definitions)	Ex ante	To separately identify embedded Permit and Lane Rental costs and volumes to inform future cost assessment and the Street Works reopener.
M9c – Permit & Lane Rental (Reopener)	Those relating to New Permit Schemes and New Lane Rental Schemes (see definitions)	Reopener	To separately identify embedded Permit and Lane Rental costs and volumes to inform future cost assessment and the Street Works reopener.

7.76. Total Street Works Costs, excluding administration costs, across these three worksheets should closely reconcile with the Street Works Cost Type expenditure reported in the C1 tables for the RIIO-ED1 years.

### M9a – Traditional Street Works (Ex Ante)

7.77. The purpose of this table is to separately identify the costs and volumes associated with Traditional Street Works (see definition).

7.78. Gross costs and volumes should be reported for the following categories, which are defined in Annex A – Glossary (under the prefix “Street Works”):

- Notices (volumes only, no costs).
- Notice Penalties
- Overstay Fines
- Sample Inspections (costs only, no volumes).
- Investigatory Inspection and Penalties (costs only, no volumes).
- Congestion Charges (costs only, no volumes).

- Street Works Admin (costs only, no volumes).
- Suspensions and Closures (costs only, no volumes).

7.79. The Overstay Fines reported here must refer to only those incurred for works reported in this table (M9a).

7.80. DNOs are also expected to report the income for the following, also defined in Annex A - Glossary (under the prefix "Street Works"):

- Income from Connectee
- Penalties Recovered from Contractor.

7.81. All income and penalties recovered should be entered as a negative number.

7.82. Related Party costs should be reported as if incurred by the DNO.

### **M9b – Permit & Lane Rental (ex ante)**

7.83. The purpose of this table is to separately identify the costs and volumes associated with Existing Permit Schemes and Existing Lane Rental Schemes.

7.84. Costs and volumes associated with New Permit Schemes and New Lane Rental Schemes should be reported in worksheet M9c – Permit & Lane Rental (Reopener) as these are subject to the Street Works reopener mechanism.

7.85. Gross costs and volumes should be reported for the following categories, which are defined in Annex A - Glossary (under the prefix "Street Works"):

- Permits
- Permit Penalties
- Permit Condition Costs (costs only, no volumes)
- Lane Rentals
- Overstay Fines
- Permit and Lane Rental Set Up Costs (costs only, no volumes)
- Permit and Lane Rental Administration Costs (costs only, no volumes).

7.86. DNOs are also expected to report the income for the following, split between Permits and Lane Rental, also defined in Annex A - Glossary (under the prefix "Street Works"):

- Income from Connectee
- Penalties from Contractor

7.87. The Overstay Fines reported here must refer to only those incurred for works reported in this table (M9b).

7.88. All income and penalties should be entered as a negative number.

7.89. Related Party costs should be reported as if incurred by the DNO.

7.90. 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.

### **M9c – Permit & Lane Rental (Reopener)**

7.91. The instructions for worksheet M9b – Permit & Lane Rental (Ex ante) apply to this worksheet. The only difference is that the costs in this worksheet refer to New Permit Schemes and New Lane Rental Schemes.

7.92. Costs and volumes reported here are subject to the Street Works reopener mechanism.

### **M10 – Shetland (SSEH)**

7.93. The purpose of this worksheet is to assist in the assessment of the Shetland reopeners (both the Shetland Uncertain Energy Costs and the Shetland Competitive Process costs).

7.94. This worksheet is relevant to SSEH only. It enables SSEH to report annually on the efficient costs incurred related to generating electricity on Shetland. Other costs related to generating electricity on Shetland are reported in the pass through table and through legacy arrangements.

7.95. An ex ante allowance has been provided for the cost categories listed in the M10 Shetland costs table, as described in our Final Determination under Shetland Fixed Energy Costs Allowance and Competitive Process Costs. These costs are subject to a reopener in 2017, as stated in CRC3F, with a 10% (of ex ante allowance for these categories) materiality threshold.

7.96. Shetland Fixed Energy Costs Allowance is made up of Third party contracts (TPC), LPS capital & operating costs (LPSC), NINES ongoing costs (NINES), Competitive Process Costs (CPC) and potential Contingency costs (CC), which are defined in Annex A – Glossary.

- Third party contracts (TPC) comprising:
  - TPC project management costs
  - TPC operational costs
- LPS capital & operating costs (LPSC)(excluding fuel) made up of the following components:
  - LPSC insurance
  - LPSC EU Emission Trading Allowances
  - LPSC consents and permits
  - LPSC engineering
  - LPSC construction
  - LPSC operations staff

- LPSC spares and consumables
  - LPSC depreciation
- NINES ongoing costs (NOC)
  - NOC operational costs
  - NOC other
- Competitive Process Costs (CPC)
  - CPC project management
  - CPC regulatory and consent
  - CPC engineering
  - CPC procurement
- Contingency costs (CC) (if applicable)
  - CC project management
  - CC regulatory and consent
  - CC procurement
  - CC construction
  - CC commissioning.

7.97. The costs in £m for each year, from the beginning of DPCR5 period through to the last Price Control reporting period. Complete this for each cost category listed in the table, Rows 31 to 35 (excluding the cost category headings), in the highlighted cells.

### **M11—Subsea Cables (SSEH)M11a – Subsea Cables Proactive**

7.98. The purpose of this worksheet is to assist in the assessment of the subsea cables reopener. This worksheet is for the input of volume and cost data on Subsea Cable Condition Replacement.

7.99. The 'Submarine Cables – Total Costs' line sums the total costs for submarine cables for any specific year.

7.100. The 'Submarine Cables – Asset Replacement' 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.

7.101. 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.

7.102. The 'Submarine Cables – Diesel Gen' 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.

## **M11b – Subsea Cable Reactive**

7.103. The purpose of this worksheet is to assist in the assessment of the subsea cables reopener. This worksheet is for the input of volume and cost data on Subsea Cable Fault Replacement.

7.104. The 'Submarine Cables – Total Costs' line sums the total costs for submarine cables for any specific year.

7.105. The 'Submarine Cables – Fault Replacement' 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.

7.106. 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.

7.107. The 'Submarine Cables – Diesel Gen' 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.

~~7.98. The purpose of this worksheet is to assist in the assessment of the subsea cables reopener. It collates further information on submarine cables. This information would be reported on a costs and volumes delivered within the Regulatory Reporting year basis.~~

~~7.99. The 'Submarine Cables – Total Costs' line sums the total costs for submarine cables for any specific year.~~

~~7.100. The 'Submarine Cables – Asset Replacement' 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), the number of customers connected, whether the driver is proactive or fault replacement and the installation method.~~

~~7.101. The installation method will be either protected or unprotected, depending on the outcome of cost benefit analysis. The costs should be allocated to the correct year, and the volume (km) replaced.~~

~~7.102. 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.~~

~~7.103. The 'Submarine Cables – Diesel Gen' 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 would be the total costs for Diesel Generation for the duration of the project either proactive or fault driven. The volume would be quantified as the number of hours for which the diesel generation had run.~~

## M12 - Moorside (ENWL only)

~~7.104.~~ **7.108.** The purpose of this worksheet is to assist in the assessment of the Moorside reopener. It brings together all costs relating to Moorside – a project to build a new nuclear power station in Cumbria which will significantly impact ENWL's electricity distribution network. There are two tables.

~~7.105.~~ **7.109.** The first table collects total Moorside Costs within the Price Control and is auto populated from other worksheets:

- DUoS-funded totex (gross) costs are populated from CV25 – Moorside
- DRS2. Diversion costs are populated from CV39 – Directly Remunerated Services
- Incremental TCP costs are populated from C22 Pass Through.

~~7.106.~~ **7.110.** The second table provides the tax pool split for the PCFM for the DUoS-funded totex costs.

~~7.107.~~ **7.111.** Check cells in Row 30 ensures that the gross DUoS costs in the tax pool split match those in the first table.

## M13 – Uncertainty Mechanism Information

~~7.108.~~ **7.112.** The purpose of this table is to provide a summary of information on expenditure on areas that are subject to an uncertainty mechanism. This information is not directly used in the PCFM but may be used to inform revisions to relevant PCFM variable values.

~~7.109.~~ **7.113.** The only input from DNOs is to input the costs of the Innovation Roll-Out Mechanism in cells AM24:AQ24. These costs should match those reported in cells U16:Y16 of worksheet 'E8: IRM' of the Environment and Innovation Reporting Pack. All other net costs are automatically populated linking to other worksheets in the reporting pack template.

## M14 - Drivers

~~7.110~~7.114. The purpose of this worksheet is for DNOs to provide cost driver information, which may be used for future and within period benchmarking.

~~7.111~~7.115. This worksheet collects data in the following tables:

- Exogenous Totex Drivers
- DNO Output Levels
- Network Operating Characteristics
- Installed Network Assets.

~~7.112~~7.116. DNOs are required to input data in the first two tables only for:

- Number of customers
- Units distributed
- Network-wide peak demand
- Unplanned customer interruptions (numbers will be a year in arrears as the approved numbers from Ofgem will not be available by 31 July each year)
- Unplanned customer minutes lost (numbers will be a year in arrears as the approved numbers from Ofgem will not be available by 31 July each year).

~~7.113~~7.117. The other drivers are auto populated and include:

- Spans cut
- Spans inspected
- Total network length
- Overhead LV and HV network
- Unplanned Incidents on Power System Voltage Equipment - Total Damage Incidents
- ONIs total
- MEAV
- MEAV - excluding RLM, Protection, Civil Works & Electricity Energy Storage
- Other MEAV variations used for benchmarking.

~~7.114~~7.118. Key terms for this worksheet, defined in Annex A – Glossary, are:

- Customers Interrupted (CI)
- Customer Minutes Lost (CML)
- Customer<sup>5</sup>
- GWh
- MVA
- MEAV
- Span.

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<sup>5</sup> These values should be provided on the same basis as that used for the IIS returns.

~~7.115-7.119.~~ 7.119. The values in each reporting year should be actuals up to and including that reporting year, for subsequent years a growth factor should be applied.

~~7.116-7.120.~~ This worksheet will be developed further during RIIO-ED1.

## **M15 - MEAV (Modern Equivalent Asset Value)**

~~7.117-7.121.~~ 7.121. This worksheet automatically calculates MEAV for a DNO, based on data provided from the V1 – Total Asset Movements worksheet. The only entry for the DNOs is to input the unit cost value which will be given by Ofgem to the DNOs confidentially as it is market sensitive information.

## **M16 – Forecasts C1**

~~7.118-7.122.~~ 7.122. The purpose of this worksheet is for DNOs to provide a forecast of their expenditure plans on a C1 basis.

~~7.119-7.123.~~ 7.123. For all regulatory years to date, this worksheet should be populated using data from worksheet S2 - Summary of C1s (Real). In order to do this the DNO must copy the formulae in Rows 16, 39 and 62 into the rows that corresponds to the year under report. For future years the DNO must input its forecast on a business as usual basis, equivalent to how it would report in C1.

~~7.120-7.124.~~ 7.124. Reporting of forecast costs should be in 2012-13 prices and include the expected impact of real price effects but not the expected impact of economy-wide inflation.<sup>6</sup>

~~7.121-7.125.~~ 7.125. 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.

## **M17 – Forecasts TOTEX**

~~7.122-7.126.~~ 7.126. The purpose of this worksheet is for DNOs to provide a forecast of their expenditure plans on a TOTEX basis. As tables I1 and I2 convert actual expenditure data reported in the Costs and Volumes pack to the format required for the ED1 Price Control Financial Model (PCFM), table M17 converts the forecast data reported in M16 on a similar basis. The worksheet also requires DNOs to present their current view of allowed TOTEX, for comparison to actual and forecast TOTEX.

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<sup>6</sup> Real price effects are the changes in prices of inputs purchased, relative to economy-wide inflation. When considering the impact of real price effects DNOs should reference economy-wide inflation as measured by the retail prices index (RPI).

The DNO must copy the formula and formats in column R into the column that corresponds to the year under report.

~~7.123-7.127.~~ It is expected that Ofgem will use this view to compare against allowed TOTEX, and this could form part of RORE calculations.

~~7.124-7.128.~~ All actual costs in regulatory years to date and some forecast years costs are disclosed in table M16 or elsewhere in the Costs and Volumes pack. Therefore, much of the data in this table is automatically populated from other worksheets. The DNO must copy the formulae in Column R into the rows that corresponds to the year under report.

~~7.125-7.129.~~ However, for some TOTEX adjustments (rows 14-19) which are not disclosed elsewhere in the pack, DNOs must input their forecasts on a basis equivalent to how actuals have been prepared and in 2012-13 prices.

~~7.126-7.130.~~ A check is made to table I1 – PCFM Inputs 12-13 for regulatory years to date to ensure the values reported in tables M17 and I1 are consistent.

~~7.127-7.131.~~ Row 26 should be populated with base allowances as per the PCFM for Final Determinations (from row 46 in the PCFM “Totex” tab).

~~7.128-7.132.~~ Row 28 should be populated with the Smart Meter Roll Out Base Allowance, as per the PCFM for Final Determinations (from row 23 in the PCFM input tab).

~~7.129-7.133.~~ Rows 29-31 are automatic adjustments which should reconcile base allowances to current allowances as reported in the latest PCFM as per the AIP. A check is made in row 32 to table SI1, where current allowances have been input from the most recent AIP.

~~7.130-7.134.~~ Rows 35-53 allow DNOs to enter adjustments to allowances based on their latest views of uncertainty mechanisms:

- Automatic adjustments are made for Visual Amenity and Worst Served Customers. These have zero allowance until the annual iteration process following the regulatory year incurred.
- Other rows DNOs can enter details where they foresee material adjustments to allowances in future years due to uncertainty mechanisms.

## **M18 – Full Time Equivalents**

**7.135.** The purpose of this worksheet is for DNOs to provide an estimated number of Full Time Equivalents (FTEs) at 31<sup>st</sup> March in each occupational group (SOC code) in the table.

7.136. Please provide total FTE numbers for the entire DNO. Figures should include the DNO's own FTEs only, in line with what is reported in the Labour cost type, DNO Own. This could therefore include temporary/agency staff whose costs are reported as such.

7.137. Where you provide figures for 3 or 4-digit SOC codes, these should be a subset of the 2-digit SOC code above it. Where clarification of the SOC definitions is required, the ONS SOC<sup>7</sup> manual should be referred to.

7.138. DNOs should populate the total number of FTEs.

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<sup>7</sup>

<https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassification/soc>

## 8. Appendix 1 – Cost Allocation Scenarios

### Fault and Asset Replacement

Example	RIGS Classification	
	Fault	Non Fault
<b>Cable Scenarios</b>		
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.	Minimum repair of 5m fault costs	45m additional asset replacement
LV UG cable fault repair with defective link box found during restoration (not linked to fault). Cable repair to faults, link box to asset replacement.	Cable repair faults costs	Link box replacement asset replacement
A HV UG cable fault requires a length of cable damaged in the fault incident to be replaced to restore cable to Pre-Fault Availability. The length may vary for different faults because there is no pre-set typical length.	All fault costs	N/A
A HV UG cable fault repair is completed during unplanned IIS (interruption 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
A HV UG cable fault requires a length of cable to be replaced but prior information exists that the cable had poor fault history. The pre-existence of performance data is irrelevant if the repair is triggered by a fault. All the costs associated with the repair should be booked to faults.	All fault costs	N/A
A HV UG cable fault repair requires a length of cable to be replaced to return the cable to Pre-Fault Availability, but the DNO elects to replace an additional length due to prior information that the feeder had poor fault history. The length required for the fault repair should be classed as faults, the additional length should be classed as asset replacement.	Length required for fault repair treated as fault costs	Additional length to address fault history treated as asset replacement
A potential LV fault is causing fuses to blow, but supplies are being restored with replacement fuses and there is no clear location of the fault to carry out a repair. To monitor the situation LV fault monitoring devices are installed on the network and these identify the possible location of a joint that is breaking down and sniff tests confirm this. A project is undertaken to overlay a short length of cable to remove this joint before a further faults and loss of supplies occur. The initial costs of restoring supplies and installing devices will be logged as fault costs. The work that involves a planned shutdown and replacement of the short cable length is reported as asset replacement.	Initial costs of restoring supplies and installing devices fault costs	Cable overlay asset replacement
While on an LV mains fault, the cut out in a property is observed to be in poor condition. This does not need to be replaced to repair the LV fault and is not the cause of the fault but while on site this is replaced due to its condition. These additional costs for the replacement of the cut out should be reported as asset replacement.	LV mains fault recorded as fault costs	Cut out change reported as asset replacement
An underground cable fault requires a revised route e.g. protected trees, which prevent digging along original route. The entire length of the revised section is classified as faults given this is the work undertaken to bring the cable back into Pre-Fault Availability.	All fault costs	N/A
Excavating as a result of an underground fault reveals that the existing cable is shallow and not in 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
<b>Overhead line scenarios</b>		
During restoration of supplies for a HV overhead fault it is found that there is a defective pole mounted circuit breaker several poles away not related to initial fault. Since the defective circuit breaker is not related to the fault on the overhead line and its replacement is treated as asset replacement.	HV overhead fault costs	Pole mounted circuit breaker asset replacement
During restoration of supplies for a HV overhead fault it is found that there is a defective pole mounted circuit breaker preventing restoration of supplies. Both the overhead line fault and defective circuit breaker are treated as faults but require separate unplanned incidents to be created.	All fault costs	N/A
Pole termination fault. On inspection the pole itself is showing signs of deterioration but can still be used (i.e. the existing pole will need replacing at some point in the future). It is decided to replace the pole at the same time as repairing the termination (rather than attaching the termination to a poor condition pole and then coming back to replace the pole). Since the pole replacement is additional to the work undertaken to restore the termination to Pre-Fault Availability, it is classified as asset replacement.	Termination fault costs	Pole asset replacement
<b>Plant scenarios</b>		
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	All fault costs	N/A



completed is not dependent on the completion of an IIS incident. All the costs should be booked to faults.		
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
<b>EHV/132kV transformer :-</b>		
There is a fault within a cable termination, that does not damage the rest of the transformer. The costs of remaking the termination, including any associated cable works should be allocated to faults.	All fault costs	N/A

Fault within a tap-changer, but there is no damage to the main transformer windings. The tap-changer is of a type that can be changed without the need for changing the transformer. The costs of repairing the tap-changer is allocated to faults. If at some later point (once it has been restored to Pre-Fault Availability) it is decided that the transformer needs to be replaced this would be allocated to asset replacement.	Tap changer fault costs	Subsequent Transformer change - asset replacement
Fault within a tap-changer, but the transformer is of a type where the whole transformer needs to be changed to restore it to Pre-Fault Availability. All the costs of replacing the transformer should be allocated to faults.	All fault costs	N/A
Fault within a transformer requiring the whole transformer to be changed. All the costs of replacing the transformer should be allocated to faults.	All fault costs	N/A