



SSEN Distribution Response to ED2 Draft Determination - Annex 5: Material DD issues and impact on SSEN



Scottish & Southern
Electricity Networks

Powering our
community

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INTRODUCTION

Throughout the RIIO-ED2 process we have worked collaboratively and constructively with Ofgem with the aim of ensuring a positive outcome for current and future customers at Final Determinations (FD).

Ofgem published its Draft Determinations (DDs) on 29 June 2022. We have compiled this document to provide a consolidated list of concerns we have identified with Ofgem's cost assessment and how these impact our stakeholder-led outputs. We set out our proposals for how Ofgem should address each of these issues. If Ofgem chooses to take a different approach, we ask that it states what approach it has taken and why an alternative is justified.

The modelling suite used in RIIO-ED2 is the most complex ever produced in the context of an energy price control, including three separate totex models and 34 separate disaggregated models, alongside all the supporting normalisation, calculation and combining files. Due to this complexity, and given the late provision of a number of key files and instructions as detailed in Annex 6 Procedural Issues, we are likely to identify further issues following our DD response submission and are committed to continue working with Ofgem to ensure the modelling suite is robust and the outcome of the modelling reflects the challenges and opportunities RIIO-ED2 will bring.

Unless these errors and inconsistencies are addressed at FD, SSEN will not be able to efficiently deliver the network and outputs that all stakeholders and customers, current and future, expect and deserve. Ofgem's DD would increase costs for all in the longer-term, delaying connections by up to two years, limiting our ability to drive efficiencies through our supply chain, and reducing planned improvements in system reliability even as we become more reliant on electricity.



SUMMARY TABLE

The following table details cost assessment errors, the proposed solution for Ofgem to address and the impact of these errors on our stakeholder-led outputs:

Area	Table	DD Cost Assessment Error	Proposed Ofgem FD Solution	Impact on our Stakeholder-led Outputs
LOAD RELATED EXPENDITURE				
Demand Driven Adjustment	All Tables	Utilises incorrect LCT data and is not consistent across DNOs.	SSEN has provided updated LCT data (M20). The Demand Driven adjuster should only be applied to LRE expenditure.	Ofgem's Draft Determination would lead to a 30% shortfall in the number of Low Carbon Technologies (LCTs) supported over the ED2 period and would result in 800MW of DG capacity below the lowest net-zero compliant DFES scenario. Ultimately, Draft Determination cuts to strategic investment could mean delays of up to 2 years for LCT connections.
Connection Volume	C2 - Connections	Incorrect MPAN volumes.	SSEN has provided corrected MPAN volumes (C2).	
CV1 SHEPD Company Specific Factor	CV1 - Primary Reinforcement	£/MVA is a consistent measure across all DNOs.	SHEPD has a Company Specific Factors difference, DNO specific unit rates should be used as calculated within the disaggregated model	
CV1 £/MVA metric	CV1 – Primary Reinforcement	The use of a £/MVA metric penalises networks with high network length, particular SHEPD which is an outlier.	Ofgem to use SHEPD DNO Unit Rate within the disaggregated assessment	
CV2 MVA calculation	CV2 – Secondary Reinforcement	Unit rate for £/MVA is based upon inconsistent MVA data, reflecting either additions or disposals.	Ofgem and DNO agreement required on which data to use (see Core-Q67).	
CV3 Regional Factor calculation error	CV3 - Fault Level Reinforcement	Application of Regional Factors double counted due to formula error.	Formula correction with disaggregated model.	

NON-LOAD RELATED EXPENDITURE

CV7 NARM performance inclusion	CV7 - Asset Replacement	No consideration within the modelling suite of NARM optimised volumes	Include an efficiency ratchet within the CV7 disaggregated modelling.	Ofgem's Draft Determination would result in a more than 20% increase in risk of failure on our network compared to our final Business Plan, this is because we are not able to replace our ageing assets and make our network more resilient to climate change.
CV7, CV8 & CV9 Unit Rate calculations	CV7 - Asset Replacement CV8 - Refurbishment non NARM CV9 - Refurbishment NARM	Certain unit rates fail the Ofgem deemed statistical test leaving unsuitable figures	Ofgem must review the unit rates and override appropriately following good regulatory practice.	Ofgem's Draft Determination fails to recognise the necessary expenditure required to meet our legal obligations, therefore we would need to re-route funding away from other stakeholder-led outputs.
CV8 & CV9 Volume omissions	CV8 - Refurbishment non NARM CV9 - Refurbishment NARM	Certain Volumes have been omitted with no explanation	Ofgem should reinstate the volume omissions (see Core-Q74).	Ofgem's Draft Determination would mean that our targeted improvements to reduce the frequency and duration of unplanned interruptions would be reduced by up to 50% compared with the original output co-created with stakeholders.
CV17 Rising & Lateral Mains historic information issue	CV17 – RLMs	Historical data includes data quality issues impacting the calculation of unit rate RLM is classified as a cost exclusion, as such the RLM element of the MEAV driver should be excluded also	Ofgem should use only RIIO – ED2 period for unit rate calculation Exclude RLM from MEAV	Ofgem's Draft Determination fails to recognise the necessary expenditure required to meet our legal obligations, therefore we would need to re-route funding away from other stakeholder-led outputs.

CV18 OHL Clearances Volume data and unit rate	CV18 - OHL Clearances	<ul style="list-style-type: none"> Volumes for SEPD and SHEPD have been removed without justification Ofgem have assessed unit rate on a total level instead of by sub-category 	<ul style="list-style-type: none"> Ofgem should accept our volume data as submitted or clearly justify removal and link to specific reduced outputs. Ofgem should assess efficiency on sub-category level 	
CV19 Worst Served Customer exclusion	CV19 – WSC	Ofgem have stated that WSC should be allowed as submitted but included this within Totex modelling which contradicts the methodology points	WSC should be excluded from benchmarking following Ofgem's stated policy (see Core-Q87).	Ofgem's Draft Determination means that we cannot deliver the number of schemes required in SEPD to meet the 75% target co-created with stakeholders.
CV25 High Value Projects formula issue	CV25 - HVP ED2	Post Analysis file re-introduces the HVP that was deemed as a company specific factor, but due to formulae error it is applied as a 0% adjustment	Correction of formula within Post Analysis file	N/A
Normalisation adjustments	M13, CV29, CV5	Inconsistent application of normalisation adjustments for Diversions and ash die-back	Apply normalisation consistently across companies for fair and transparent comparison	Ofgem's Draft Determination fails to recognise the necessary expenditure required to meet our legal obligations, therefore we would need to re-route funding away from other stakeholder-led outputs.
REGIONAL AND COMPANY SPECIFIC FACTORS				
CV7 Subsea Cables Asset Replacement	CV7 - Asset Replacement	<ul style="list-style-type: none"> Not all subsea cable expenditure is removed 	<ul style="list-style-type: none"> Remove all costs for company specific factors 	Ofgem's Draft Determination would reduce our Business Plan

		<p>from disaggregated analysis</p> <ul style="list-style-type: none"> • Application of adjustment that does flow through is applied to all NARM assets • Separate assessment of Company Specific Factors should not be assessed based on CV7 efficiency • As with RLM because these costs are excluded the subsea assets should also be removed from the MEAV calculation 	<p>from cost model to improve model accuracy</p> <ul style="list-style-type: none"> • Apply adjustment only on subsea cable assets • Separate assessment must be based on qualitative evidence not general table efficiency score which does not factor in company specific factors which are large for SHEPD which is an outlier amongst DNOs (see NoS Annex). • Exclude subsea cable from MEAV calculation 	<p>to only replace or augment seven subsea cables, this would reduce our planned network resilience improvements by £30m, impacting customers in Orkney, Uist and Inner Hebrides islands. This would also inhibit the connection of renewable generation and the provision of flexibility services on these islands, and these communities would continue to rely on back up diesel generation.</p>
CV26 Subsea Cable Faults	CV26 – Faults	Subsea Cable Company Specific Factors have been included in regression model	Exclude Subsea Cable cost and volumes from regression model.	
CV30 & CV31 Subsea costs	CV30 – Inspections, CV31 - Repairs and Maintenance	<ul style="list-style-type: none"> • Not all subsea cable expenditure is removed from disaggregated analysis • Separate assessment of Company Specific Factors should not be assessed based on general table efficiency 	<ul style="list-style-type: none"> • Remove all costs for company specific factors from cost model to improve model accuracy • Separate assessment must be based on qualitative evidence not general table efficiency score 	
C5 & C7 Subsea Cable related costs	C5 - Property (Non Op) C7 - STEPM (Non Op)	Company Specific Factors have erroneously not been removed from main cost modelling assessment	Remove Company Specific Factors from modelling and separately assess	

CV15 Remote Location Generation CAPEX removal	CV15 - QoS & North of Scotland	Erroneous Removal of Remote Location Generation CAPEX costs	Ofgem should reinstate the costs within CV15	Ofgem's Draft Determination would reduce our funding to maintain and operate standby generation for island communities, which means we would increase reliance on our back-up diesel generation.
Normalisation for company specific factors	All SHEPD	Ofgem has treated SHEPD as if were similar to other licenses. SHEPD is not as per other DNOs, it is clearly an outlier and normalisation for sparsity (and other factors) is required to make fair comparison.	Ofgem must normalise for sparsity and servicing islands as per M25 table also see NoS Annex.	Both of the above output impacts apply
Regional Wages	All Tables	Ofgem have not carried our pre-modelling adjustments to account for high labour costs in Scotland. Ofgem has not recognised significances of differences	Update labour indices to assess Scotland as a unique region for Regional Wage impact (see Cost Assessment Annex F)	

IT AND OT

IT/OT Licensee Level assessment and Time Period	CV11 - Op IT and Telecoms C4 - IT&T (Non-Op) C13 - IT&T (BS)	<ul style="list-style-type: none"> Assessment based on licensee level does not align cost allocation to the model driver being used, causing issue with modelling. Increasing requirements from Ofgem for IT/OT related to Net Zero, DSO 	<ul style="list-style-type: none"> IT and OT costs should be modelled on company level IT and OT costs should be modelled using RIIO-ED2 period only 	Ofgem's Draft Determination cuts to SSEN's IT plan impacts 19 of our stakeholder led outputs, for example, our ability to deliver customer service improvements, required LCT connections volumes and new regulatory reporting requirements.
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		and Data & Digitalisation not accounted for with using RIIO-ED1 period in the assessment		
MEAV cost weightings for IT/OT	CV11 - Op IT and Telecoms C4 - IT&T (Non-Op) C13 - IT&T (BS)	MEAV as a driver has inappropriate weighting for assessing IT expenditure	Normalise for OHL and UG cable within the MEAV calculation	

ENVIRONMENTAL

CV22 PCB Unit Rates	CV22 - Environmental Reporting	Unit rates for PCBs within CV22 are varied across DNOs which causes Ofgem to utilise DNO specific rates across RIIO-ED1 and RIIO-D2 period	Ofgem should use the unit rates calculated within the CV7 output.	Ofgem's proposed Draft Determination cuts foreclose on our ability to meet our industry-leading and stakeholder-supported 1.5° Science Based Target (SBT).
Environmental expenditure	CV22 - Environmental Reporting	Cannot compare different starting points and goals of companies through modelling with no appropriate driver	Exclude from totex modelling with a disaggregated model approach properly recognising DNO differences and specific requirements	
CV20 Visual Amenity model error	CV20 - Visual Amenity	Disaggregated file duplicates the allowances for Visual Amenity	Formula correction required within model	N/A

NETWORK OPERATING COSTS

CV29 Tree Cutting model approach change	CV29 - Tree Cutting	<ul style="list-style-type: none"> The volume adjustment rejects DNO latest data on expected requirements Efficiency challenge incorrectly takes into account an element of 	<ul style="list-style-type: none"> Ofgem should accept volumes as submitted as they are based upon recent detailed LiDAR data Efficiency should be based on activity drives, Spans Cut and Spans Inspected 	Ofgem's Draft Determination fails to recognise the necessary expenditure required to meet our legal obligations, therefore we would need to re-route funding away from other stakeholder-led outputs.
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		<p>policy differences by using spans affected</p> <ul style="list-style-type: none"> Spans Inspected for SSEN includes Ash Dieback inspections which is not comparable to other inspection activity 	<p>(reflecting how work is done in practice)</p> <ul style="list-style-type: none"> Unique elements of Spans Inspected, i.e. Ash Dieback inspections should be assessed separately 	
CV30 Inspections / CV31 R&M change of model approach	CV30 – Inspections, CV31 - Repairs and Maintenance	MEAV is not an appropriate assessment driver for Inspections and R&M	CV30 and CV31 should be based on Unit Rate efficiency challenge, with volume qualitatively assessed	Ofgem's Draft Determination would mean that our targeted improvements to reduce the frequency and duration of unplanned interruptions would be reduced by up to 50% compared with the original output co-created with stakeholders.

INDIRECT ACTIVITY AREAS

MEAV as a sole driver for indirect activity	<p>C9 - Core CAI</p> <p>C10 - Wayleaves (CAI)</p> <p>CV35 - Op Training (CAI)</p> <p>C12 - Core BS</p>	Using MEAV as sole driver does not capture all activity and thus does not explain all costs.	Ofgem to investigate supporting drivers alongside MEAV (see Core-Q102)	Ofgem's Draft Determination cuts to SSEN's CAIs back to 19/20 levels, impacts 16 of our stakeholder led outputs, for example, our ability to deliver customer service improvements, managing LCT connections volumes and DSO output commitments.
MEAV cost weightings for Indirects	<p>C9 - Core CAI,</p> <p>C10 - Wayleaves (CAI)</p>	The weighting of activities within MEAV is not aligned to weighting of indirect activities.	Normalise for OHL and UG cable within the MEAV calculation	

	CV35 - Op Training (CAI), C11 - V&T (CAI) C12 - Core BS C13 - IT&T (BS) C14 - Property Mgt (BS) C5 - Property (Non Op) C6 - V&T (Non Op)			
Vehicles & Transport to be assessed ED2 only	C11 - V&T (CAI) C6 - V&T (Non Op)	Due to DNOs requirements to comply with Net Zero requirements it is not appropriate to utilise historic costs in their benchmark.	Vehicle and Transport costs should be modelled using RIIO-ED2 period only	Ofgem's proposed Draft Determination cuts foreclose on our ability to meet our industry-leading and stakeholder-supported 1.5° Science Based Target (SBT).
Non Operational Property and Property Management to be assessed separately	C14 - Property Mgt (BS) C5 - Property (Non Op)	Property Capex spend is lumpy and atypical in nature and is an area where it should not be expected that DNOs spend profile over a price control would align	Non-Operational Property and Property Management should be assessed separately	N/A
OTHER AREAS				
Disaggregated Modelling Benchmark	All Tables	The disaggregated efficiency scores are not benchmarked to reflect DNO performance, therefore Ofgem are assuming the output of models are reflective of a frontier DNO which is incorrect	Ofgem to apply a median baseline to the disaggregated modelling	This impacts our ability to deliver on all outputs.

Totex Model Weightings	All Tables	Ofgem applies equal weighting of totex models but due to the different nature of the totex models weighing does not need to be equal	Use a 50% weight on model 1 and a 25% weight for each of the other two models.	
Stretch Efficiency targets to 85th percentile	All Tables	An efficiency challenge to 85 th percentile does not align to the model quality and departs from regulatory good practice.	Ofgem to remove stretch target to 85 th percentile	
Allocation of Indirects for Net After Allocation	PCFM	The allocation of indirects outside of price control as part of the PCFM calculation is not adjusted for cost assessment changes	Ofgem must apply the same ratio of submitted modelled costs to calculate the Non Price Control Indirects	N/A
Streetworks cost exclusion	C2 - Connections	The Streetworks Disaggregation Model incorrectly adds Out of Price Control element to C2 (and therefore includes in Totex.	Correction to formulae within model to only include Streetworks for connections inside price control	N/A
COMBINATION OF RESULTS				
Combination and Presentation of Results	All Tables	The combination and presentation of results does not reflect the true modelled performance, providing an inaccurate view on efficiency challenge	Ofgem to utilise a more detailed combination of results based upon modelled costs	N/A



Document Structure

We have structured this document aligned to the cost modelling suite and put forward constructive and detailed suggestions to correct errors. We welcome feedback from any stakeholders on these corrections/adjustments to ensure the cost assessment modelling is robust from both a statistical and operational perspective.

LOAD RELATED EXPENDITURE

Load Related Expenditure (LRE) is a high growth area within RIIO-ED2 and future price controls through the drive for net zero emissions, we appreciate the modelling technique is challenging within this area.

Whilst we broadly agree with the cost modelling technique used across the various areas of LRE, there are have some key issues around use of volume data and some modelling errors to highlight.

Demand Driver Adjustor

Relevant consultation question	Core - Q105
Issue	Incorrect LCT volumes due to lack of clarity within guidance.
Proposed solution	Updated LCT volumes provided (M20 BPDT submission).

As per our Consultation Question response, we agree in principle with the need for a demand driven adjustment to normalise DNOs business plans between *ex-ante* and UM funding of reinforcement investment. When first reviewing the adjustment, we were surprised at the value of the movement, as our plan was based fundamentally on an ST scenario, which is the same scenario the Demand Driven adjustment aims to normalise for.

It has become clear in review that the volumes we submitted need to be updated, as further explained with Core-Q105.

We have provided updated LCT volumes within our response in the BPDT update. These will impact both the Totex Model 3 results and Demand Driven adjustment outcome.

To update for these updated volumes, Ofgem will need to update the “ED2Models_NetworkDrivers” workbook. The “Inp_LCTs_EVs” and “Inp_LCTs_HPs” tabs will need updated with this new data.

Connection Volumes

Relevant consultation question	Core - Q71
Issue	Incorrect MPAN volumes due to lack of clarity within guidance.
Proposed solution	Updated MPAN volumes provided with Load CORE- Q5 and updated C2 BPDT submission.

Within our final plan submitted BPDT there were forecast costs with no MPAN volumes, though within these activities we submitted Projects Completed volumes. The impact is causing material impacts to the Connections disaggregated modelling by impacting the median unit rates calculated.

We have submitted updated MPAN volumes within Load CORE- Q5 and the updated C2 BPDT submission.

Ofgem will need to update the “ED2Models_MasterTemplate_Disag_Connections” excel file with corrected data within the “Inp_BPDT_csv” tab.

CV1 SHEPD Regional Factor

Relevant consultation question	Core - Q65
Issue	£/MVA is a consistent measure across all DNOs.
Proposed solution	SHEPD has a regional factor difference, DNO specific unit rate should be used.

As explained within our response to Core Q-65 the use of industry median £/MVA as a unit rate does not consider issues that are outside of management control for SHEPD. Due to a longer, more radial network design caused through the sparsity of our region, the £/MVA will be higher than other areas. This is consistent in the ED2 forecast figures and actual historic ED1 figures.

We have not previously flagged this as a Regional Factor issue as this assessment technique was unknown ahead of Draft Determination. We believe the simplest approach to rectify, is to utilise the DNO specific unit rate for SHEPD’s assessment.

Ofgem will need to update the “ED2Models_MasterTemplate_Disag_Primary_Reinforcement” workbook. Within the “Cal_Model_Cost_Adj_PrimaryReinf” tab an adjustment can be made to the unit rate with cell M84 to match to the DNO specific figure calculated in tab “Cal_Modelled_UC_PrimaryReinf” on cell reference AO44.

CV2 MVA Figures

Relevant consultation question	Core - Q67
Issue	MVA figures used within BPDTs are inconsistent across DNOs.
Proposed solution	Ofgem and industry agreement on correct MVA figures to be used.

As presented and discussed during the recent CAWG-28 (23/08/22) by SSEN, there is an inconsistency across DNOs in the data submitted within the BPDTs for CV2. The MVA figure used by Ofgem within the disaggregated modelling suite is based on either MVA additions or MVA disposals dependent upon DNO, which is impacting the way Ofgem calculate unit rates. This can be checked by using the Utilisation Table within the CV2 tab, and cross checking if it is the addition or disposal figure that is used within Ofgem's calculations.

Ofgem and the industry need agreement on whether to utilise:

- MVA Additions
- MVA Disposals
- Net MVA Released

Once decided an update will be required in the "ED2Models_MasterTemplate_Disag_Secondary_Reinforcement" workbook. Volumes will need to be updated within the "Inp_BPDT_csv" tab.

It should be noted there is a risk this issue could impact CV1 also, but without a Utilisation Table within the CV1 tab there is no way to check this externally. DNOs will also need to confirm that a consistent MVA figure has been reported in CV1.

CV3 Regional Factor calculation error

Relevant consultation question	NA
Issue	Application of regional factors have been double counted through formula error.

Proposed solution	Correction of formula within disaggregated model.
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Regional factors have been applied twice in the CV3 disaggregated model, impacting the calculation of the median unit rate.

Within the “ED2Models_Disag_Fault_Level_Reinforcement” workbook within the “Cal_Costs_adj_CV3” tab there is a formula error driving the duplication of regional factors, linked with the cost shares tab.

Within rows 185 – 437 the formula includes a SUMIFS function that uses sum range on “Cal_Costs_CV3_shares” tab for rows 15 – 609. This is including both the cost share before normalisation and including normalisation therefore duplicating the calculated %.

Ofgem should correct this SUMIFS function to only pull rows 15 – 263.

NON-LOAD

Our Non-Load expenditure is key to the safe and resilient management of our network. Expenditure in this area is generally stable and as such we believe the modelling processes should be straight forward and utilise the open data we provide to Ofgem.

It should be noted that despite this there are key areas of unjustified and erroneous cuts to our projections of spend.

CV7 NARM performance inclusion

Relevant consultation question	Core - Q54 Core - Q73
Issue	No consideration within the modelling suite of NARM optimised volumes.



Proposed solution	Include an efficiency ratchet within the CV7 disaggregated modelling.
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As further explained within Core-Q54 we note an element of efficiency that is not recognised by Ofgem within the modelling or wider incentive packages. By optimising our submitted plan to minimise the cost of Monetised Risk Points (MRP), we have put forward the most cost-effective plan possible for our customers.

There are efficiency controls within the LRE disaggregated models, Ofgem should investigate the inclusion of a similar type within the CV7a disaggregated model.

CV7, CV8 & CV9 Unit Rate calculations

Relevant consultation question	Core - Q73 Core - Q74
Issue	Ofgem have not allocated appropriate unit rates due to model errors and inaccurate adjustments
Proposed solution	Ofgem should review the unit rates and override appropriately.

We note that Ofgem has utilised an approach to unit rate assessment that brings in both historical and forecast data, which is sensible as partly incorporates the unit rate development since the last price control period.

Despite this there are still some key unit rate issues caused by model errors.

CV7

Below table lists out key CV7 unit rate issues and suggested fixes (as detailed in Annex 12):

Unit Rate Issues

CV7 - Asset Replacement

DNO	Asset Type	Unit	Submitted Unit Rate £k	DD Assessed Unit Rate £k	Unit Rate Issue	Proposed Solution
SEPD / SHEPD	6.6/11 kV Transformer (GM)	#	SEPD £20.6 / SHEPD £20.3	14.2	Use of innovative, but more expensive, OLTC transformers. Benefits of implementing this technology outweighs the additional costs	Within the "ED2Models_Template_CV7_Asset_Replacement" workbook Ofgem override unit rates within the "Cal_Final_Model_Cost_Asset_Rep" tab on cells R872:R873
SEPD	6.6/11 kV UG Cable	£/km	174.0	120.2	Rural vs Urban; UG replacements in densely populated urban areas are much more expensive than in Rural areas. SEPD has more Urban than Rural, replacements will be more expensive than average. LPN proposes a unit rate of £378k, demonstrating the increased expense in urban areas.	Within the "ED2Models_Template_CV7_Asset_Replacement" workbook Ofgem override unit rates within the "Cal_Final_Model_Cost_Asset_Rep" tab on cell R550
SEPD	132kV Fittings	#	5.9	3.0	Fittings identified require much larger and heavier insulator sets to maintain the internal clearances as stipulated by design specifications for specific tower type.	Within the "ED2Models_Template_CV7_Asset_Replacement" workbook Ofgem override unit rates within the "Cal_Final_Model_Cost_Asset_Rep" tab on cell R1608
SEPD	LV Main (OHL) Conductor	£/km	26.9	17.4	More expensive Aerial Bundled Conductor (ABC) and tree guards have been proposed to protect asset and reduce tree cutting costs. Benefits of this outweighs additional spend.	Within the "ED2Models_Template_CV7_Asset_Replacement" workbook Ofgem override unit rates within the "Cal_Final_Model_Cost_Asset_Rep" tab on cell R140

SEPD	66kV UG Cable	£/km	851.0	640.0	Replacement of specific 66kV gas filled cable with 132kV non pressurised cable (as 66kV UG cable not readily available). Expert rate for 132kV cable replacement is £1,041k per km.	Within the "ED2Models_Template_CV7_Asset_Replacement" workbook Ofgem override unit rates within the "Cal_Final_Model_Cost_Asset_Rep" tab on cell R1164
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CV8

Below table lists out key CV8 unit rate issues and suggested fixes:

Unit Rate Issues

CV8 - Refurbishment NARM

DNO	Asset Type	Unit	Submitted Unit Rate £k	DD Assessed Unit Rate £k	Volume Issue	Proposed Solution
SEPD	33kV UG Cable (Oil)	km	97.2	5.6	Ofgem has incorrectly used 33kV UG Cable (Non Pressurised) as the unit rate	Ofgem to use DNO submitted unit rates within the over-ride on tab "Cal_CV8_UC_Options" for cells Y73:AL73
SHEPD	33kV UG Cable (Oil)	km	29.0	5.6	Ofgem has incorrectly used 33kV UG Cable (Non Pressurised) as the unit rate	Ofgem to use DNO submitted unit rates within the over-ride on tab "Cal_CV8_UC_Options" for cells Y73:AL73

CV9

Below table lists out key CV9 unit rate issues and suggested fixes

Unit Rate Issues

CV9 - Refurbishment non-NARM

DNO	Asset Type	Unit	Submitted Unit Rate £k	DD Assessed Unit Rate £k	Volume Issue	Proposed Solution
SEPD	33kV UG Cable (Oil)	#	75.7	0.0	Ofgem's statistical testing has rejected each of the 3 unit rates that are put forward. Ofgem has not selected an over-ride causing no unit rate to be input.	Ofgem should reinstate the unit rate within tab "Cal_CV9_UC_Options" on cells Y73:AL73
SEPD	132kV UG Cable (Oil)	#	118.9	0.0	Ofgem's statistical testing has rejected each of the 3 unit rates that are put forward. Ofgem has not selected an over-ride causing no unit rate to be input.	Ofgem should reinstate the unit rate within tab "Cal_CV9_UC_Options" on cells Y103:AL103

CV8 and CV9 Volume omissions

Relevant consultation question	Core – Q74
Issue	Volume has been omitted from various areas within CV8 and CV9 with no explanation.
Proposed solution	Ofgem should add volumes back as no reference to why they have been removed.

Various volumes have been removed from both SEPD and SHEPD's disaggregated analysis with no explanation to the omission. Ofgem should reinstate the volume omissions by correcting the engineering review tables. Below is a list of issues by area along with corrections:

**Volume
Issues**

CV8 - Refurbishment NARM

DNO	Asset Type	Unit	Submitted Volume #	DD Assessed Volume #	Volume Issue	Proposed Solution
SEPD	132kV UG Cable (Oil)	km	10.0	0.0	No explanation provided within engineering review tab.	Ofgem to reinstate volume.
SEPD	Protection	#	1,918.0	0.0	We note we are the only DNO to have protection volumes excluded without explanation, therefore this is an error.	Ofgem to reinstate volume.
SHEPD	33kV Transformer (GM)	#	5.0	0.0	Volume does not flow through due to formula error therefore incorrectly omitted.	Tab "Eng_Refurb_Vol - SSEH - CV8" on cell C89 should contain a space at the end of "33kV Transformer (GM) ". Ofgem to reinstate volume.

**Volume
Issues**

CV9 - Refurbishment non-NARM

DNO	Asset Type	Unit	Submitted Volume #	DD Assessed Volume #	Volume Issue	Proposed Solution
SHEPD	33kV Transformer (GM)	#	7.0	0.0	Volume does not flow through due to formula error therefore incorrectly omitted.	Tab "Eng_Refurb_Vol - SSEH - CV9" on cell C89 should contain a space at the end of "33kV Transformer (GM) ". Ofgem to reinstate volume.

CV15 Remote Location Generation CAPEX

Relevant consultation question	Core – Q83 Annex 10 – North of Scotland
Issue	Removal of Remote Location Generation Capex from CV15 does not align with narrative.
Proposed solution	Ofgem should reinstate the costs within CV15 and apply the Regional Factor to assess costs independently.

As discussed within Core-Q83 we expect the Remote Location Generation CAPEX costs to be reinstated to CV15 so costs can be assessed through the modelling suite.

As part of our submission we are providing a memo table to be included within CV15 to call out other costs related to Remote Location Generation.

Ofgem should update the “Normalisation_File_SHEPD” workbook, on tab “Cal_QoS&North of Scotland” to move the Remote Location Generation CAPEX exclusion of costs from row 17, which is costs to be excluded to row 67 which is for costs to be separately assessed.

This will ensure the costs are removed for benchmarking purposes but still able to be separately assessed as a regional factor.

CV17 Rising & Lateral Mains historic information issue

Relevant consultation question	Core – Q86
Issue	<ol style="list-style-type: none">1. Historical data is incorrect impacting the calculation of unit rate.2. Inclusion of RLM within MEAV causes costs to be misaligned to driver
Proposed solution	<ol style="list-style-type: none">1. Ofgem should use only RIIO-ED2 period for unit rate calculation.2. Ofgem should exclude RLM asset types from MEAV

Unit rate issues

As we will target a much higher proportion of RLMs within Multi-Storey buildings when compared to RIIO-ED1, the use of RIIO-ED1 and RIIO-ED2 combined as the period for unit rate assessment is therefore inappropriate. Instead, only the RIIO-ED2 period should be used as this is more reflective of the actual work we will carry out.

Ofgem should update the “ED2Models_Disag_RLMs” workbook. Tab “Local” should be updated in cell H19 to select the period of assessment as “RIIO-2”.

MEAV

RLM expenditure has been classified as a cost exclusion within Ofgem’s modelling process. For a fair and transparent modelling approach Ofgem should also exclude the RLM assets from the MEAV calculation.

Other DNOs argue that there are still RLM related costs within indirects. With the updated approach of utilising an indirects variant of MEAV for indirects cost modelling this could be partly mitigated. See further information within the “MEAV weighting correction” section.

Ofgem should utilise the already calculated MEAV – excl RLM which is on row 119 within each of the “Cal_MEAV_[DNO]” tabs in the “ED2Models_MasterTemplate_MEAV” workbook.

CV18 OHL Clearances Volume data

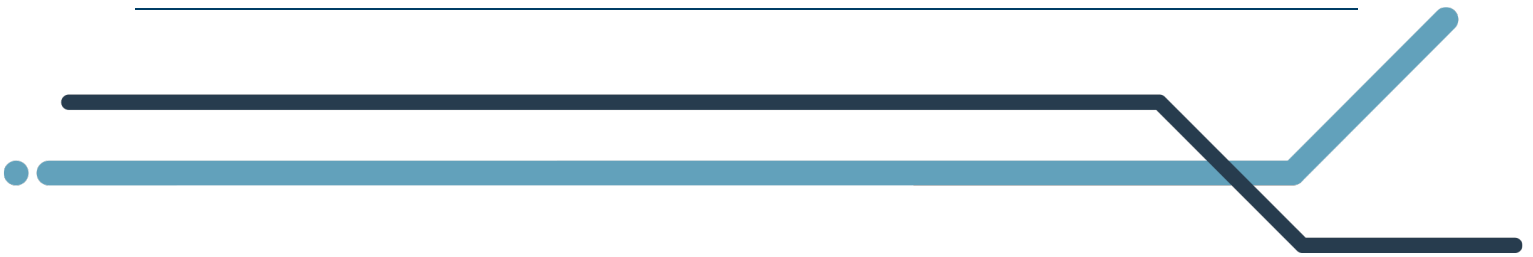
Relevant consultation question	Core – Q81 SQ SSEN 039
Issue	Ofgem have incorrectly stated our volume data for OHL Clearances is not justified. Ofgem have assessed unit rate on a total level instead of by sub-category.
Proposed solution	Ofgem should accept our volume data as submitted. Ofgem should assess efficiency on sub-category level.

As within the Core-Q81, we agree with the methodology presented in the core methodology document, but note this does not align to how the disaggregated modelling is set up. Furthermore, the volumes for SEPD and SHEPD have been removed without justification.

Ofgem should restate these volumes within the “ED2Models_OH_Clearance” workbook. The adjustments in line 40 on the “EngReviewAdj” tab should be removed to allow the submitted volumes to flow through the disaggregated model.

As per our response, Ofgem have provided us an opportunity to submit updated volumes for SHEPD. We provide more data on these figures within SQ SSEN039 and have submitted an updated BPDT CV18 table as part of our response.

To correct for the misalignment with the unit rate methodology, Ofgem should correct within the “Local” tab the Assessment Level which should be changed to “Sub-category” in cell H13.



CV19 Worst Served Customer exclusion

Relevant consultation question	Core - Q87
Issue	By including WSC within Totex modelling there is an assessment carried out which contradicts Ofgem's methodology.
Proposed solution	WSC should be excluded from benchmarking to enable Ofgem's position that WSC should be allowed as submitted.

As detailed in Core Q-87, Ofgem's Draft Determination consultation position for WSC is to allow as submitted. Ofgem will need to exclude these costs from the overall cost assessment.

This can be done in the "Normalisation_File_SHEPD" & "Normalisation_File_SSES" files by applying a negative adjustment on line 67 within the "Cal_WSC" tab of the value of WSC submitted. For SHEPD this will need to be done after re-allocation of costs from CV15.

This will allow the WSC costs to flow outside of the modelling, where a separate assessment of the submitted costs can be added back in the Post Analysis file.

It must be noted that due to the costs within CV19 being excluded from the modelling, an error will occur when the costs are reintroduced within the Post Analysis file, similar to the next issue call out for CV25. Ofgem will also need to correct for this issue within CV19.

CV25 High Value Projects formula issue

Relevant consultation question	Core - Q94
Issue	The Post Analysis file re-introduces the HVP that was deemed as a regional factor, but due to formulae error it is applied as a 0% adjustment.
Proposed solution	Update of formula within Post Analysis file.

Within SHEPD we have a cost for subsea cable replacement within HVP. This has been assessed as a company specific factor and removed from modelling with the Normalisation files. When reintroduced to the modelling suite in the Post Analysis file the cost is then adjusted to 0% based on the other elements of CV25, of which there are none.

This is a formulae issue within the Post Analysis file that is required to be corrected.

Within the “PostAnalysis_File_SHEPD” workbook in the “Cal_Disagg_CapexAdj” tab on row 1122 the formulae is:

$$\text{Regional adjustment reversal's ratio} = \text{IFERROR}\left(\frac{\text{Modelled costs}}{\text{Normalised adjusted costs}}, 0\right)$$

This would imply that if there is an error within the calculation of efficiency factor the adjustment should be set at 0%. Instead the corrected formulae should be:

$$\text{Regional adjustment reversal's ratio} = \text{IFERROR}\left(\frac{\text{Modelled costs}}{\text{Normalised adjusted costs}}, 1\right)$$

This enables the regional factor reintroduction to be correctly added back to the modelling.

The formulae correction will be required in all areas of the Post Analysis files. There should be a further error within the reintroduction of Remote Location Generation OPEX but due to costs not being fully omitted in the normalisation process, there is a very small number in both the normalised adjusted and modelled costs to allow the formula to work.

REGIONAL AND COMPANY SPECIFIC FACTORS

Not all license areas are the same across the DNOs, and Ofgem utilise Regional and Company Specific Factors to ensure the econometric modelling carried out is fair and comparable.

Due to the unique nature of Regional and Company Specific Factors it can be difficult to ensure all areas are accounted for accurately within the modelling suite. For the Draft Determination model there was confusion regarding SSEN’s claim for Regional and Company Specific Factors. To aid a more accurate Final Determination outcome we have provided a North of Scotland paper (Annex 10) and have listed below the areas that need to be updated within the modelling suite.

Regional and Company Specific Factors model file

To aid the modelling suite we would suggest, in a way similar to Streetworks, to have a Regional and Company Specific Factors excel model file. This file should pull in the factors as per the normalisation file and be used to calculate the separate assessment technique being used, which we would believe to be mostly qualitative assessments.

This would aid transparency of the modelling suite and will act as a calculation area for Ofgem to determine the fair value within the Regional and Company Specific Factors – which currently is carried out using whatever efficiency is derived in the table the factor sits in. We believe this approach does not accept that the factor is unique and requires a specific modelling approach.

CV7 Subsea Cables Asset Replacement



Relevant consultation question	Core - Q74 Annex 10 - North of Scotland
Issue	<ol style="list-style-type: none"> 1. Not all subsea cable expenditure is removed from disaggregated analysis. 2. Application of adjustment that does flow through is applied to all NARM assets. 3. Separate assessment of regional factors should not be assessed based on CV7 efficiency. 4. To align driver MEAV should have subsea cable removed
Proposed solution	<ol style="list-style-type: none"> 1. Ensure all company specific factors are removed. 2. Ensure within the CV7 disaggregated table the adjustment is made to only subsea cable assets. 3. Separate assessment should be based on qualitative evidence and not on the original table efficiency score. 4. Remove subsea cable from MEAV

Normalisation:

Due to Subsea Cable passing the criteria for a Company Specific Factor all subsea cable expenditure should be normalised in the Totex and Disaggregated modelling – this should also be applied to only the subsea cable activities within the CV7 disaggregated model due to the risk of impacting other unit rates.

Within the Draft Determination only part of the submitted subsea cable was classed as company specific factor.

Ofgem should include these Company Specific Factors as Separate Assessment areas for normalisation, to allow Ofgem the ability within the modelling to specifically assess subsea cable asset replacement.

Ofgem should update the “Normalisation_File_SHEPD” workbook on tab “Cal_Asset Repl NARM “to include the full value of subsea cable assess replacement, instead of within “Inp_Factors”.

Application of Regional Factor to disaggregated table:

Within the CV7 disaggregated table the Regional Factor for subsea cable is applied to all NARM assets equally.

As the current disaggregated table is extensively linked to apply the normalisations from the “Inp_Normalisations” tab to the “Cal_Costs_adj_Asset_Rep” tab the most appropriate adjustment would be to add a new ‘helper’ in column I within the “Cal_Costs_adj_Asset_Rep” tab for only subsea cable costs – potentially called SUBSEA. Within the “Inp_Normalisations” tab if you input this same SUBSEA within cell I110 the adjustment for subsea should be made to only subsea cable categories.

Separate assessment:

It is not suitable for Ofgem to use the existing model efficiency of the CV7 table to assess the efficiency of our company specific factors. Instead efficiency should be based on the evidence of our submitted claim and be made on a qualitative basis.

To implement this, within the "PostAnalysis_File_SHEPD" tab when the company specific factor is reintroduced, the efficiency factor applied should be bespoke. These costs should be classified as a separate assessment as opposed to regional adjustment.

In order to appropriately assess these company specific factors, we suggest Ofgem develop a separate disaggregated table that includes all elements of company specific factors so they can be assessed to be reintroduced back to the modelling, in a similar approach to Streetworks.

MEAV

To align the driver used with the normalised costs subsea cable assets should also be removed from the MEAV driver.

Ofgem should update the "ED2Models_MasterTemplate_MEAV" workbook on tabs "Cal_MEAV_[DNO]" to include a new MEAV calculation for MEAV excluding subsea cables. The formula would omit rows 39, 76 and 103 to remove subsea cable from the MEAV driver.


CV26 Subsea Cable Faults

Relevant consultation question	Core - Q96 Annex 10 - North of Scotland
Issue	Within the faults regression subsea cable costs are included instead of adjusted as a company specific factor.
Proposed solution	Exclude subsea cable cost and volumes from the faults and ONIs regression model.

Normalisation:

Due to Subsea Cable passing the criteria for a Company Specific Factors all subsea cable expenditure should be normalised in the Totex and Disaggregated modelling – this should also be applied to the subsea cable activities within the CV26 Faults table so the regression is not incorrectly impacted.

Within the Draft Determination the fault element of subsea cable was not included as a company specific factor due to an omission on the M25 memo table. We have submitted a new M25 memo table which includes subsea cable faults correctly labelled as a company specific factor within our updated BPDT views.



Ofgem should include these Company Specific Factors as Separate Assessment areas for normalisation, to allow Ofgem the ability within the modelling to specifically assess subsea cable asset replacement.

Ofgem should update the "Normalisation_File_SHEPD" workbook on tab "Cal_Faults" within Separate Assessment to include the full value of subsea cable faults.

Separate assessment:

As with CV7 we believe it would be sensible for Ofgem to implement a separate disaggregated table that includes all elements of company specific factors so they can be assessed to be reintroduced back into the modelling within the Post Analysis tab.

CV30 & CV31 Subsea costs

Relevant consultation question	Core - Q99 Annex 10 - North of Scotland
Issue	<ol style="list-style-type: none">1. Not all subsea cable expenditure is removed from the disaggregated models.2. Separate assessment of company specific factors should not be assessed based on CV30 and CV31 efficiency.
Proposed solution	<ol style="list-style-type: none">1. Ensure all company specific factors are removed.2. Separate assessment should be based on qualitative evidence and not on the original table efficiency score.

Normalisation:

Due to Subsea Cable passing the criteria for Company Specific Factor, all subsea cable expenditure should be normalised in the Totex and Disaggregated modelling – this should also be applied to the subsea cable activities within the CV30 and CV31 disaggregated model.

Within the Draft Determination only part of the submitted subsea cable was classed as a company specific factor.

Ofgem should include these Company Specific Factors as Separate Assessment areas for normalisation, to allow Ofgem the ability within the modelling to specifically assess subsea cable inspections and maintenance.

Ofgem should update the “Normalisation_File_SHEPD” workbook on tabs “Cal_Inspections” and “Cal_Repairs and Maintenance” to include the full value of subsea cable inspections and maintenance, instead of within “Inp_Factors”.

Separate assessment:

It is not suitable for Ofgem to use the existing model efficiency of the CV30&CV31 tables to assess the efficiency of our company specific factors. Instead efficiency should be based on the evidence of our submitted claim and be made on a qualitative basis.

To implement this, within the “PostAnalysis_File_SHEPD” tab when the company specific factor is reintroduced the efficiency factor applied should be bespoke. Ofgem should classify these costs as a separate assessment as opposed to regional adjustment.

In order to appropriately assess these company specific factors Ofgem should develop a separate disaggregated table that includes all elements of company specific factors so they can be assessed to be reintroduced back to the modelling, in a similar approach to Streetworks.

C5 & C7 Subsea Cable related costs

Relevant consultation question	Annex 10 - North of Scotland
Issue	Company Specific Factor costs are not removed from main cost modelling assessment.
Proposed solution	Ofgem to remove costs from modelling and separately assess based on qualitative evidence.

Normalisation:

These claims were not accepted in Ofgem’s Draft Determination, but we provide further detail and evidence in Annex 10 to justify that these are a Company Specific Factor and are additional expenditure over and above our baseline costs due to SHEPD being uniquely exposed to subsea cable. Therefore, these costs should be normalised from the modelling for Ofgem to assess separately.

Ofgem should include these Company Specific Factors as Separate Assessment areas for normalisation, to allow Ofgem the ability within the modelling to specifically assess the efficiency of these costs.

Ofgem should update the “Normalisation_File_SHEPD” workbook on tabs “Cal_Property (non op)” and “Cal_STEPM (non op)” to include the full value of this claim.

Separate assessment:



As with CV7 Ofgem should implement a separate disaggregated table that includes all elements of company specific factors so they can be assessed to be reintroduced back to the modelling within the Post Analysis tab.

IT AND OT

Companies are becoming more reliant upon IT and OT systems to deliver new regulatory requirements, such as DSO and deliver efficiencies, be that improving productivity in back office functions or developing machine learning techniques to best manage the network.

Ofgem’s position in the SSMD was to aim for technology neutrality amongst DNOs and to use technology to drive towards net zero goals. Unfortunately, some of Ofgem’s modelling techniques undermine this position and require updating.

As Operational IT, Non-Operational IT and BSC IT are all modelled together, the recommendations below are all based upon the “ED2Models_MasterTemplate_Disag_IT&T” model.

Company Level assessment

Relevant consultation question	Core - Q79
Issue	Assessment based on licensee level does not align cost allocation to the model driver being used, distorting the modelling.
Proposed solution	IT and OT costs should be modelled on company level.

As explained within our Core Q-79 response Ofgem should assess IT and OT spend on company level as per the RIIO-ED1 process.

This will require an intensive change to the “ED2Models_MasterTemplate_Disag_IT&T” workbook to create formulae to assess based upon company level. We have updated the workbook in order to test these outputs and are happy to share with Ofgem to assist in the process.

RIIO-ED2 Assessment Period

Relevant consultation question	Core - Q79
Issue	Increasing requirements from Ofgem aligned with IT/OT through net zero targets, DSO requirements

	and increased Data & Digitalisation not accounted for with using RIIO-ED1 period in the assessment.
Proposed solution	IT and OT costs should be modelled using RIIO-ED2 period only.

Within Core Q-79 we set out our position on the period of assessment. Ofgem should change this to RIIO-ED2 only as per our arguments put forward in the consultation response.

Within the “ED2Models_MasterTemplate_Disag_IT&T” workbook the “Local” tab needs cell H14 changed to “RIIO-2” for the period of assessment to be RIIO-ED2 only.

Appropriate MEAV driver

Relevant consultation question	Core - Q79
Issue	MEAV have an inappropriate weighting for assessing IT expenditure.
Proposed solution	Utilise more qualitative analysis to remove the impact of MEAV from cost modelling

We also discuss in Core-Q79 how MEAV as a driver is not statistically nor operationally intuitive for use within the IT disaggregated modelling. We investigated the model fit of a regression using the IT/OT costs and MEAV as a driver, and for all periods the statistical fit of MEAV as a driver was weak, with R2 ranging between 0.3 – 0.5 dependent upon period selected

From an operational perspective, the weighting of MEAV by asset is not aligned to expenditure and therefore inappropriate as a driver.

During the RIIO-ED1 assessment this was partially mitigated using qualitative assessment. As the technology hub for the RIIO-ED2 has analysed our EJPs and can better appreciate the relationship of expenditure to benefits, Ofgem should incorporate a qualitative assessment element within the modelling.

This will require an update to the “ED2Models_MasterTemplate_Disag_IT&T” workbook to bring in a weighting element for qualitative assessment. The existing “Inp_EngReviewAdj” tab can be utilised for any adjustments the qualitative assessment has made and within the “Cal_Modelled_Costs_IT” tab, where currently within row 80 where qualitative assessment is applied instead Ofgem should incorporate the element weighting of quantitate and qualitative assessment. For transparency this weighting could be driven through the “Local” tab.



ENVIRONMENTAL

Customers, government, and all stakeholders are rightly setting more stringent challenges regarding the environment for DNOs. This step change covers many elements of our business, where we need to focus on both internal and external environmental concerns.

The RIIO-ED2 price control period is critical to ensure DNOs set forward on the right path, therefore cost assessment needs to enable DNOs to be able to carry out the vital work required. We note that Ofgem have put forward a mostly pragmatic approach to cost assessment in environmental sections, assessing projects on an individual basis and using qualitative review extensively. Despite this there are still errors we have identified within the modelling that Ofgem should correct.

CV22 PCB Unit Rates

Relevant consultation question	Core - Q90
Issue	Unit rates for PCBs within CV22 are varied across DNOs which causes Ofgem to utilise DNO specific rates across RIIO-ED1 and RIIO-D2 period.
Proposed solution	The assets within PCBs are common within CV7, Ofgem should use the unit rates calculated within the CV7 output.

We have identified that the PCB unit rates used within CV22 table vary greatly amongst DNOs. This is likely the reason Ofgem have chosen to utilise DNO specific unit rates across the RIIO-ED1 and RIIO-ED2 period for cost assessment.

Unit rates are varied due to Pole Mounted Transformers (PMTs) within the CV22 table being relatively new in RIIO-ED1 and the likely inclusion of inspection volume data within the period, diluting some DNOs' unit rates.

Because PMTs activity is the same within CV22 and CV7 asset replacement Ofgem should use the derived unit rate from the CV7 disaggregated assessment for use within CV22.

Ofgem will need to update the "ED2Models_Disag_Environmental" workbook. Within the "Cal_Modelled_UC_Enviro" Ofgem can introduce a new grouping of unit rates called 'Persistent Organic Pollutant PMT asset replacement table' which can then flow through the existing model suite.

CV22 Cost Exclusion

Relevant consultation question	Core – Q63
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Issue	Environmental expenditure is bespoke to individual DNOs due to differing requirements. To be included within the modelling without an appropriate driver is both statistically and operationally incorrect.
Proposed solution	Environmental expenditure to be classed as a cost exclusion.

As explained within Core-Q63 Ofgem should classify CV22 environmental expenditure as a cost exclusion due to the unique and atypical nature of spend across DNOs. Differing government targets, regional impacts and network configurations generate differing expenditure levels with no appropriate driver to explain these differences.

Ofgem will need to update the “Normalisation_File_[DNO]” workbooks to exclude this cost from modelling. Within the “Cal_Environmental Reporting” tab Ofgem should exclude the submitted costs from modelling.

CV20 Visual Amenity model error

Relevant consultation question	NA
Issue	Error with disaggregated model in the summation of Visual Amenity.
Proposed solution	Formula correction with CV20 table.

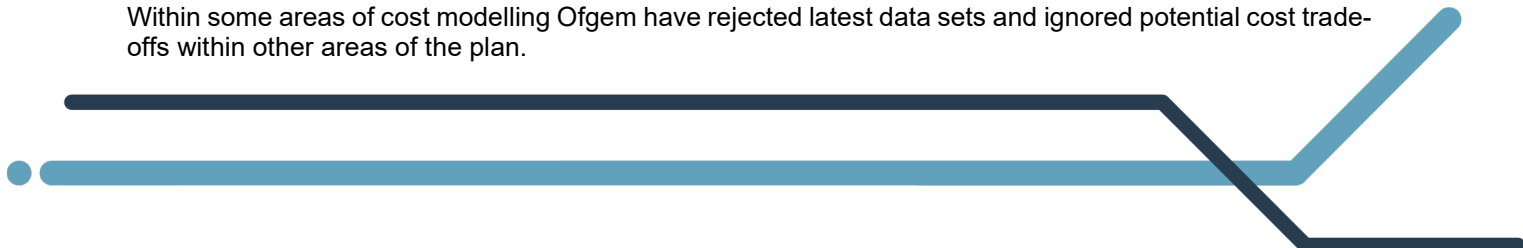
We have identified an error within the “ED2Models_Disag_Visual Amenity” workbook. The calculation that feeds to the “Out_VisualAmenity” is pulling the modelled costs instead of the delta required that flows to the Post Analysis files.

Instead of the “Out_VisualAmenity” formula linking directly to the modelled allowance within the “Cal_Modelled_Allowance_VA” tab it should be the difference between the modelled allowance and the normalised adjusted allowance.

NETWORK OPERATING COSTS

Network Operating Costs (NOCs) are key to ensure reliability of our network. The forecast of expenditure within our submitted business plans are based on latest data and aligned closely to other areas of our plan, such as Asset Replacement and Load Related investment.

Within some areas of cost modelling Ofgem have rejected latest data sets and ignored potential cost trade-offs within other areas of the plan.



Ofgem must follow a data driven approach and recognise linkages between different areas of the business plan.

CV29 Tree Cutting model approach change

Relevant consultation question	Core – Q97
Issue	<ol style="list-style-type: none">1. The volume adjustment rejects DNO latest data on expected requirements.2. Efficiency challenge incorrectly takes into account an element of policy differences by using spans affected.3. Spans Inspected for SSEN includes Ash Dieback inspections, which is not comparable to other inspection activity.
Proposed solution	<ol style="list-style-type: none">1. Ofgem should accept volumes as submitted as they are based upon detailed LiDAR data.2. Efficiency should be based on activity drives, Spans Cut and Spans Inspected.3. Unique elements of Spans Inspected (i.e. Ash Dieback inspections should be assessed separately.

We disagree with the choice of assessment approach used by Ofgem for tree cutting, as explained further within Core-Q97.

Volume Adjustment

We disagree that the volume adjustment used within the modelling implies that the data DNOs use for assessing their required volume of tree cutting is incorrect. Ofgem should follow a data driven approach and follow what the data suggests. As discussed within our response, Ofgem should review the data in more detail to better understand our volume requirements.

Within the “ED2Models_Disag_Tree_Cutting” workbook Ofgem should turn off the volume adjustment on cell H22 on the “Local” tab.

Efficiency Challenge

Ofgem assesses efficiency of tree cutting at the ‘spans affected’ level, which incorporates an assessment of cut cycle within the overall efficiency. This is an error as Ofgem are assuming all DNOs will have a comparable cut cycle, which is incorrect, as cycle is based upon growth rates of trees, which is DNO dependent.

Within the “ED2Models_Disag_Tree_Cutting” workbook Ofgem should change the cost driver in cell H21 to “Activity Drivers” on the “Local” tab.

Ash Dieback Spans Inspected

Within our business plan we have inspections for Ash Dieback infected trees, in order to collect appropriate data for the separate Ash Dieback uncertainty mechanism. Due to this activity being unique and separate from other inspection types Ofgem should assess this cost independently.

Ofgem should use the “Normalisation_File_[DNO]” workbooks to ensure these costs are removed from benchmarking. Within the “Cal_Tree Cutting” tab Ofgem can remove the Ash Dieback inspection costs through the separate assessment area, row 64 onwards.

Ofgem will need to separately assess and re-introduce the cost within the Post Analysis files.

Within the disaggregated “ED2Models_Disag_Tree_Cutting” workbook this normalisation will need to be applied in the “Inp_Normalisations” tab, with an appropriate ‘Claim’ marker input in row M to align to the “Cal_Costs_adj_Tree” where the normalisation adjustment is to be applied.

CV30 Inspections / CV31 R&M change of model approach

Relevant consultation question	Core – Q99
Issue	MEAV is not an appropriate assessment driver for inspections and R&M.
Proposed solution	CV30 and CV31 should be based on Unit Rate efficiency challenge, with volume qualitatively assessed taking into account the overall network reliability tables.

The use of ratio analysis with MEAV as a denominator within the Inspections and Repairs & Maintenance modelling is inappropriate as it does not take into account trade-offs between different areas of the business plan. By using MEAV, both efficiency and volume are being assessed against the industry based upon MEAV. This is not a fair comparator to make.

Within Core-Q99 we explain that Ofgem should not analyse volumes quantitatively, as the approach used does not incorporate the age cycle, differences in assets requiring differing policies and link to overall reliability strategy.

Ofgem should accept volumes submitted by DNOs within the cost modelling, with a qualitative analysis carried out, looking at the entire network reliability strategy. Unit rate efficiency is appropriate to be modelled by Ofgem and should be used in disaggregated assessment.



This will require a structural change to the “ED2Models_Disag_Inpections_Repair&Maintenance” workbook to be aligned more with the “ED2Models_Template_CV7_Asset_Replacement” unit rate assessment approach.

We offer our support to Ofgem if required in developing this disaggregated model ahead of the Final Determination.

INDIRECT ACTIVITY AREAS

Indirect activities support the direct CAPEX related activity that DNOs undertake. This is a key element of expenditure and warrants a bespoke understanding to cost assessment.

In many ways the Ofgem modelling suite utilises drivers and techniques that are used for assessment of CAPEX related activities. Ofgem should tailor the cost assessment technique to ensure an appropriate challenge is applied.

MEAV as a sole driver for indirect activity

Relevant consultation question	Core – Q102
Issue	Using MEAV alone does not capture activity. For example, Environmental Expenditure will not impact MEAV, causing a lack of explanatory factor for indirect analysis.
Proposed solution	Ofgem to investigate supporting drivers alongside MEAV.

Various models utilise MEAV as a sole driver to explain expenditure, in either a ratio analysis technique or regression. MEAV is a driver of network scale based upon the cost of replacing a network at determined efficient unit rates. It does not capture required activity in a price control, so is therefore inappropriate to use as a sole driver for indirect cost areas, which is driven by activity change as opposed to scale of network. We explain our thinking further within Core-Q102.

The following CV tables are impacted by this issue, which utilise two separate regression models to determine modelled costs.

- | | |
|----------------------------|--------------------|
| • C9 - Core CAI | CAI REGRESSION |
| • C10 - Wayleaves (CAI) | CAI REGRESSION |
| • CV35 - Op Training (CAI) | CAI REGRESSION |
| • C12 - Core BS | Core BS REGRESSION |

Ofgem should investigate, with industry support, appropriate activity drivers to utilise alongside the MEAV driver, to account for both network scale and activity as explanatory factors for modelling. This was the approach undertaken in RIIO-ED1 which utilised V1 Asset Additions as a complimentary activity driver to MEAV.

There is merit in using V1 Asset Additions within the regression model, as well as investigating the use of Direct CAPEX costs (*Load, Non-Load and Non-Op CAPEX*) as drivers within the regression.

The data required to calculate and implement these drivers is available within the modelling suite, with extra drivers to be added to the “ED2Models_NetworkDrivers” workbook which will feed to the “Regression_File”. This will enable the driver data to be available for STATA to complete the regression analysis. The STATA code will need to be updated to utilise these new drivers.

We will continue to investigate and present results at future CAWG meetings with Ofgem and industry to help improve this modelling approach.

MEAV weighting correction

Relevant consultation question	Core – Q102
Issue	The weighting of activities within MEAV is not aligned to weighting of indirect activities.
Proposed solution	Normalise for OHL and UG cables within the MEAV calculation.

We discuss in Core-Q102 regarding the MEAV calculation applying inappropriate weightings for use within indirect activity assessment. A key issue is around the weighting of Overhead Line (OHL) and Underground cable (UG), which within the MEAV has up to an 8 times difference in weighting, yet from an indirect activity perspective the ratio of these activities is substantially less.

Ofgem should set up a separate MEAV_Indirects driver for use with indirect activity assessment. This should normalise the OHL and UG weightings to ensure accurate cost assessment.

The “ED2Models_MasterTemplate_MEAV” workbook currently calculates MEAV for use as a network driver. Ofgem should create a copy of this workbook suffixed ‘MEAV_Indirects’ for calculating the separate MEAV driver. Within the “Cal_MEAV_[DNO]” tabs the unit rate within column I should be updated to normalise for asset categories called “Overhead Pole Line” and “Cable”.

We have determined a normalised unit rate to be used at each voltage level based upon the industry weighting of km length. Ofgem should carry out a similar normalisation ; we will continue to work with Ofgem and the sector in this area.



Vehicles & Transport to be assessed ED2 only

Relevant consultation question	Core – Q93 Core - Q102
Issue	Due to DNOs requirements to comply with net zero requirements, Vehicle & Transport costs will increase in RIIO-ED2. Due to the assessment period being RIIO-ED1 and RIIO-ED2 the step change in requirements is not fully captured.
Proposed solution	Vehicle & Transport to be assessed on RIIO-ED2 period only.

RIIO-ED2 marks a step change to our fleet due to net zero deliverables and we are committed to decarbonising 100% of our vehicle fleet under 3.5tn and 50% of our fleet over 3.5tn by 2030 as part of our EAP, in line with our 1.5 degree SBT. This is a significant change from our RIIO-ED1 cost base.

Additionally, the increase in volumes of work in RIIO-ED2 will impact our operational workforce coupled with a significant increase in trainees, leading to an increase in our fleet. This will therefore mean a larger operational fleet for our workforce in parallel to the requirement to decarbonize our fleet.

Volumes of work and EV Environmental targets mark a fundamental change from RIIO-ED1. Whilst MEAV is representative of network scale, it is not an intuitive driver for the changes in Vehicle and Transport costs relating to decarbonization. Furthermore, unlike previous price controls, there is a disproportionate weighting of RIIO-ED1 costs included in the benchmarking ratio due to the 8 year period of ED1. To remedy these issues, it is our view that Vehicles and Transport should be assessed using the RIIO-ED2 time period only.

Ofgem should update the “ED2Models_C6 Disag_NonOpVT” workbook in tab “Local”, cell H14 to ‘RIIO-2’ which will set the cost assessment period to RIIO-ED2 only.

Non-Operational Property and Property Management to be assessed separately

Relevant consultation question	Core – Q91 Core - Q103
Issue	Property Capex spend is lumpy and atypical in nature and is an area where it should not be

	expected that DNOs spend profile over a price control would align.
Proposed solution	Property Management and Non-Operational Property should be separately assessed.

Combining Non-Operational Property and Property BSC costs together is an unjustified departure from the RIIO-ED1 cost assessment methodology. Capex property spend is lumpy and atypical in nature. Consequently, this is an area where it should not be expected that each DNOs' spend profile over a price control would align. Assessing Capex spend with Property Management Business Support costs, looking at a relatively short time period, when considering property asset life (and including COVID impact of periods where construction was limited in RIIO-ED1) does not make operational sense, as the two spends are not well linked.

These two cost areas should be separately assessed. As noted in RIIO-ED1 draft determinations "For property, we no longer include non-operational capex property costs in the BSCs assessment. We sought greater transparency of these costs and concluded that capex expenditure should not be captured within the opex assessment of business support." We do not see that sufficient evidence has been provided by Ofgem to justify a departure from the approach set at RIIO-ED1.

Ofgem should update the "ED2Models_MasterTemplate_Disag_Non_Op_Property" workbook in tab "Local", cell H19 to off which will enable separate assessment of property management.

OTHER AREAS

Regional Wages



Relevant consultation question	<p>Cost Assessment Annex E “<i>Review of the cost assessment in Ofgem’s RIIO-ED2 Draft Determinations</i>”</p> <p>Cost Assessment Annex F “<i>Regional wages – An expert submission for SSEN by Professor Ken Mayhew</i>”</p> <p>Annex 10 – North of Scotland</p>
Issue	There is persistent and material data suggesting Scotland experiences higher wage costs than most of the UK.
Proposed solution	Update labour indices to assess Scotland region as a unique region for Regional Wage Impact.

In its Draft Determination, Ofgem has proposed not to make a pre-modelling adjustment to account for higher labour costs in Scotland. However, evidence clearly shows that the regional wage effect extends to Scotland and has been enduring. As detailed in our Cost Assessment Annex E, we demonstrate that wages in Scotland are persistently higher than in other regions. We note that even Ofgem’s own approach shows that Scotland has the third highest wage rate in Great Britain, with a wage rate similar to that in the South East, especially in recent years.

In addition, we have provided new evidence to show that regional labour mobility is very limited (Cost Assessment Annex F). Widespread shortages of labour across the regions of Great Britain are likely to have reduced inter-regional mobility for the foreseeable future. As Professor Mayhew states: ‘recent labour market developments are highly likely to have reduced internal migration still further’.

Overall, this evidence demonstrates that there should be a Scotland-specific regional wage adjustment or, alternatively, a wage adjustment for every region.

Ofgem will need to update the “ED2_RegionalCostIndices” workbook to align either a 4 region approach with Scotland being the alternative; or individual regional assessment. We believe a 4 region approach including Scotland would be the most straight forward to implement.

All data to carry out this assessment is already within the workbook, with just a requirement to add the new approach in the “Local”, “Cal_regional_wage_indices” & “Cal_labour_indices” tabs. We have built a model that brings out Scotland as a 4th region and are happy to share this template with Ofgem to assist with Final Determination.

Disaggregated Modelling Benchmark

Relevant consultation question	<p>Cost Assessment Annex E “<i>Review of the cost assessment in Ofgem’s RIIO-ED2 Draft Determinations</i>”</p> <p>Core - Q107</p>
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Issue	The disaggregated efficiency scores are not benchmarked to reflect DNO performance, therefore Ofgem are assuming the output of models are reflective of a frontier DNO which is incorrect.
Proposed solution	Ofgem to apply a median baseline to the disaggregated modelling.

The output of the disaggregated modelling is applied directly as a modelled cost without baselining the model outputs, creating an artificially high model challenge. We have further explained this issue within Core-Q107.

All data to carry out this adjustment is within the “CostAssessment_File” workbook. Within the “Out_[DNO]ModelledCosts” tab Ofgem will need to update the formula that pulls the ‘Disaggregated costs for bottom up assessment’ to enable a reset to median baseline which can be calculated within the “Cal_Efficiency” tab.

Firstly, within the “Cal_Efficiency” tab the efficiency factor in cell R562 should be set to 0.5.

The now calculated median in cell AO562 will be reflective of what the disaggregated model costs need to adjust by to baseline the outputs to industry median.

This adjustment should be applied to the “Out_[DNO]ModelledCosts” tabs within rows 20 – 84. The existing formula should be amended to add:

$$\text{Disaggregated Costs} = ([\text{Existing Formula}]) * \text{Cal_Efficiency!} \$A0\$562$$

The adjustment will also be required within row 16 on each tab to pull the total costs to align to splits.

We have updated a version of the “CostAssessment_File” workbook and are happy to share with Ofgem to aid in Final Determination setting.

Totex Model Weightings

Relevant consultation question	Cost Assessment Annex E “ <i>Review of the cost assessment in Ofgem’s RIIO-ED2 Draft Determinations</i> ” Core - Q107
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Issue	Ofgem applies equal weighting of Totex models but due to the different nature of the Totex models weighting does not need to be equal.
Proposed solution	Model 1 weighted 50% with Model 2 and Model 3 weighted 25% each.

Ofgem has used an equal weighting for Totex models but due to the differences in nature between the models, a weighting of 50% on model 1 and 25% each on modes 2 and 3 should be used. This is further explained within our Core-Q107.

The weighting of models is applied within the “GlobalControl” workbook under the “Global” tab. Ofgem will need to update cells M80:M82 to show 25%, 12.5% and 12.5% down the rows.

When the full model suite is run the global inputs will enter into the relevant tabs.

Stretch Efficiency targets to 85th percentile

Relevant consultation question	Cost Assessment Annex E “ <i>Review of the cost assessment in Ofgem’s RIIO-ED2 Draft Determinations</i> ” Core - Q108
Issue	An efficiency challenge to 85 th percentile does not align to the model quality and is based on the fundamentals of a different sector price control.
Proposed solution	Ofgem to remove stretch target to 85 th percentile.

Ofgem’s decision to apply a glide-path from the 75th to the 85th percentile lacks coherent justification, with our arguments further explained within Core-Q108 and Cost Assessment Annex E.

To remove the glide path to 85th percentile Ofgem need to update the “CostAssessment_File” workbook within the “Cal_Efficiency” tab.

For rows 479, 500, 521, 542, 563 & 584 the formula needs to be updated so that each of column AG – AK shows a percentile of 0.25, instead of the current gradual decline to 0.15.

Allocation of Indirects

Relevant consultation question	Core – Q102 Core - Q103
Issue	The allocation of indirects outside of price control as part of the PCFM calculation is not adjusted for cost assessment changes.
Proposed solution	Ofgem to use the ratio of submitted to modelled costs to adjust the allocation of indirects outside of price control.

When calculating the Price Control Financial Model (PCFM) Ofgem needs to convert the modelled *Net BEFORE allocation of indirects to outside price control* into *Net AFTER allocation of indirects to outside price control*.

The “ED2Models_PCFM interface_DDs_[DNO]” workbook is used to calculate the input for the PCFM.

Ofgem does this by using the same figure that was reported by DNOs, instead of adjusting the allocation based upon the cost assessment output. The “Cal_NonVariant_adj” tab is where the outside of price control costs are brought into the model for calculation, within rows 9 – 150 across all DNOs.

Ofgem should introduce a scaler within these formulae based upon the ratio of final modelled costs / submitted costs. This information would be available within the “Allowances_File_ED” workbook.

Streetworks cost exclusion

Relevant consultation question	Core - Q104
Issue	The Streetworks normalisation file pulls Connections Outside of Price Control costs incorrectly.

Proposed solution	Correct formulae to pull only Connections inside of Price Control.
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As noted in our response to Core Q-104, there is an error in the Streetworks model where the share of out of price control costs is included erroneously in C2 Connections (in price control) rather than being excluded as an out of price control cost.

This occurs due to the Connections activity in this model not being split into In Area and Out of Area and the model should be updated so that only the In Area element of Streetworks is included in the Out_Streetworks_CV_2 tab.

Solution

Ofgem should correct the “ED2Models_MasterTemplate_Disag_Streetworks” workbook within tab “Inp_Costs_CV”. For each row that has Connections in column H the formula will need to be updated to ensure inside price control costs are only included.

The sumif formula can be included to filter for column W on the “Inp_CV” tab to filter “cost_type_inside_price_control” only.

COMBINATION OF RESULTS

Relevant consultation question	Core - Q111
Issue	The combination and presentation of results does not reflect the true modelled performance, providing an inaccurate view on efficiency challenge.
Proposed solution	Ofgem to utilise a more detailed combination of results based upon modelled costs.

The combination and presentation of the results within the Draft Determination is incorrect, not reflecting true modelled performance and providing an inaccurate view on efficiency challenges.

Ofgem should apply a methodology that follows the logical steps carried out during its cost assessment process. Due to the large changes this may require a supplementary workbook to aggregate costs accurately.

Solution

The following steps should be followed:

The output of the disaggregated modelling performance is applied to 50% of the final view.

- The output of the totex modelling overarching efficiency score is multiplied by the DNO submitted costs, which is then applied to the remaining 50% of the final view.
- The combination of these two approaches mirrors how Ofgem has aggregated allowances overall and brings in the appropriate element of disaggregated and totex modelling techniques.
- It is then possible to calculate Ongoing Efficiency and other assessments to these modelled figures.

Throughout our Draft Determination response we have referred to this updated calculation of results at CV table level, unless otherwise specifically stated. In Appendix 1 of this document, we have presented these updated figures against both Ofgem's original calculation and submitted costs, all pre OE.

CONCLUSION

The aim of this document was to highlight key issues within the Draft Determination modelling suite with pragmatic solutions for Ofgem to correct issues.

Ofgem should use this document to assist them with correcting the modelling suite, and if they have any queries or believe further discussion would assist with their improvements then we are available to support.

There is limited time ahead of Final Determination, but we will continue to work with Ofgem and other DNOs, to ensure the econometric modelling is as robust as possible despite the key challenges this price control faces.



APPENDIX 1 – AGGREGATION OF RESULTS

SHEPD						SEPD					
	Submitted	Avg Eff Spread OE	pre %	Correct Disagg/Totex Spread OE	pre %	Submitted	Avg Eff Spread OE	pre %	Correct Disagg/Totex Spread OE	pre %	
Connections within PC	46.9	38.7	-17%	40.2	-14%	147.3	123.0	-17%	110.0	-25%	
Reinforcement Primary	41.1	33.9	-17%	31.8	-23%	113.7	94.9	-17%	98.4	-13%	
Reinforcement Secondary	15.2	12.6	-17%	15.0	-2%	51.0	42.5	-17%	43.6	-15%	
Fault Level Reinforcement	0.1	0.1	-17%	0.2	104%	51.5	43.0	-17%	38.7	-25%	
NTCC**	21.5	17.8	-17%	20.1	-7%	1.7	1.4	-17%	1.5	-9%	
High Value Projects DPCR5	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
High Value Projects RIIO-ED1	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
High Value Projects RIIO-ED2	0.0	0.0	0%	0.0	0%	54.2	45.3	-17%	49.6	-9%	
LRE	124.8	103.0	-17%	107.2	-14%	419.5	350.1	-17%	341.8	-19%	
Diversions (Excluding Rail Electrification)	15.3	12.6	-17%	14.8	-3%	96.7	80.7	-17%	78.3	-19%	
Diversions (Rail Electrification)	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
Asset Replacement	174.8	144.3	-17%	141.6	-19%	336.3	280.6	-17%	253.0	-25%	
NARM AsRep	107.7	88.9	-17%	91.5	-15%	191.9	160.2	-17%	156.8	-18%	
Non-NARM AsRep	60.1	49.6	-17%	42.9	-29%	130.9	109.2	-17%	82.3	-37%	
Civils Driven AsRep	7.0	5.8	-17%	7.2	3%	13.5	11.3	-17%	13.9	3%	
Refurbishment no SDI	18.6	15.3	-17%	15.9	-14%	37.9	31.6	-17%	28.8	-24%	
Refurbishment SDI	1.3	1.0	-17%	1.1	-11%	17.0	14.2	-17%	9.8	-42%	
Civil Works Condition Driven	6.2	5.1	-17%	8.0	28%	22.2	18.6	-17%	21.5	-3%	
Blackstart	1.8	1.5	-17%	1.7	-7%	3.8	3.2	-17%	3.5	-9%	
BT21CN	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
Legal & Safety	4.0	3.3	-17%	4.5	12%	10.5	8.8	-17%	12.2	16%	
QoS & North of Scotland Resilience*	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
Physical Security	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
Rising and Lateral Mains	5.5	4.5	-17%	3.3	-40%	23.9	19.9	-17%	21.0	-12%	
Overhead Line Clearances	26.2	21.7	-17%	11.6	-56%	34.3	28.6	-17%	14.4	-58%	
Worst Served Customers	21.8	18.0	-17%	20.4	-7%	3.3	2.8	-17%	3.0	-9%	
High Value Projects RIIO-ED2	31.9	26.3	-17%	14.0	-56%	0.0	0.0	0%	0.0	0%	
NON LOAD	307.4	253.7	-17%	236.8	-23%	585.8	488.9	-17%	445.3	-24%	
Operational IT and telecoms	40.2	33.2	-17%	26.0	-35%	74.5	62.2	-17%	55.8	-25%	
IT and Telecoms (Non-Op)	48.2	39.8	-17%	33.5	-31%	89.5	74.7	-17%	69.8	-22%	
IT	88.4	72.9	-17%	59.5	-33%	164.0	136.9	-17%	125.5	-23%	
Flood Mitigation	0.5	0.4	-17%	1.0	107%	23.7	19.8	-17%	20.7	-13%	
Visual Amenity	4.0	3.3	-17%	6.3	59%	7.0	5.8	-17%	14.2	103%	
Losses	1.0	0.8	-17%	0.9	-7%	1.2	1.0	-17%	1.1	-9%	
Environmental Reporting	34.8	28.7	-17%	24.9	-29%	85.5	71.4	-17%	62.9	-26%	
ENVIRONMENTAL	40.3	33.2	-17%	33.1	-18%	117.4	98.0	-17%	99.0	-16%	
Property (Non-Op)	16.9	14.0	-17%	12.8	-25%	18.4	15.4	-17%	17.8	-3%	
Vehicles and Transport (Non-Op)	6.9	5.7	-17%	5.0	-27%	7.4	6.2	-17%	6.1	-18%	
Small Tools and Equipment	8.7	7.2	-17%	7.7	-11%	24.6	20.6	-17%	19.6	-20%	
NON OP CAPEX	32.5	26.9	-17%	25.5	-22%	50.5	42.2	-17%	43.5	-14%	
High Value Projects DPCR5	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
High Value Projects RIIO-ED1	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
High Value Projects RIIO-ED2	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
HVP	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
Faults	60.8	50.2	-17%	54.7	-10%	208.9	174.4	-17%	194.2	-7%	
Severe Weather I in 20*	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
ONIs	6.4	5.3	-17%	10.8	68%	41.2	34.4	-17%	58.5	42%	
Tree Cutting	49.4	40.7	-17%	42.1	-15%	140.3	117.1	-17%	95.3	-32%	
Inspections	23.7	19.5	-17%	23.4	-1%	17.9	14.9	-17%	15.5	-13%	
Repair and Maintenance	28.1	23.2	-17%	26.6	-5%	84.6	70.6	-17%	73.4	-13%	
Dismantlement	0.1	0.1	-17%	0.2	3%	2.0	1.7	-17%	1.1	-47%	
Remote Generation Opex	26.0	21.5	-17%	24.3	-7%	0.0	0.0	0%	0.0	0%	
Substation Electricity	7.0	5.8	-17%	6.7	-5%	13.0	10.8	-17%	10.9	-16%	
Smart Metering Roll Out	1.0	0.8	-17%	0.6	-42%	5.0	4.2	-17%	3.5	-30%	
NOCs	202.6	167.2	-17%	189.4	-7%	513.0	428.1	-17%	452.5	-12%	
Core CAI	251.1	207.3	-17%	213.7	-15%	480.6	401.1	-17%	429.0	-11%	
Wayleaves	21.0	17.4	-17%	26.5	26%	24.7	20.6	-17%	27.7	12%	
Operational Training (CAI)	26.1	21.6	-17%	24.6	-6%	39.7	33.2	-17%	34.5	-13%	
Vehicles and Transport (CAI)	43.6	36.0	-17%	32.0	-27%	81.5	68.0	-17%	66.7	-18%	
Reclassify CVP to base ***	4.3	3.6	-17%	1.9	-56%	8.0	6.7	-17%	3.4	-58%	
CAI	346.2	285.8	-17%	298.6	-14%	634.5	529.5	-17%	561.2	-12%	
Core BS	64.2	53.0	-17%	60.5	-6%	127.6	106.5	-17%	115.3	-10%	
IT& Telecoms (Business Support)	99.6	82.2	-17%	69.5	-30%	149.4	124.7	-17%	117.3	-21%	
Property Mgt	17.7	14.6	-17%	13.3	-25%	29.0	24.2	-17%	28.0	-3%	
Reclassify CVP to base ***	0.0	0.0	0%	0.0	0%	0.0	0.0	0%	0.0	0%	
BSC	181.4	149.7	-17%	143.3	-21%	306.0	255.4	-17%	260.6	-15%	
Shetland (SSEH Only)	56.0	56.0	0%	56.0	0%	0.0	0.0	0%	0.0	0%	
TBC ****	2.7	2.3	-17%	1.2	-56%	1.1	0.9	-17%	0.5	-58%	
OTHER	58.7	58.2	-1%	57.2	-3%	1.1	0.9	-17%	0.5	-58%	
Totex	1,382.2	1,150.8	-17%	1,150.8	-17%	2,791.8	2,330.0	-17%	2,330.0	-17%	