



Annex 15:

Rising & Lateral Mains



Scottish & Southern
Electricity Networks

Powering our
community

Contents

Executive summary	3
Statistically Significant Sample Size	4
Unit Rate Assessment.....	6

Executive Summary

This addendum provides clear statements on the key areas of challenge from Ofgem as part of the Draft Determinations relating to our Rising Lateral and Mains submission; in reference to Engineering Justification Paper 322_SSEPD_NLR_RISING_&_LATERAL_MAINS.

“The proposed volume is also a significant increase from ED1. Due to the accuracy and deliverability of the proposed volume, we consider that there is a risk related to the proposed volume and its deliverability, hence we consider the EJP to be partially justified.”

Based on Ofgem’s feedback in the Draft Determinations, their approach within the Core Methodology and responses to our supplementary questions; we do not agree with the challenge on our statistically significant sample size of inspections that informed our volumes and the challenge around our unit rates.

Statistically Significant Sample Size

Ofgem has stated *“The proposed volumes are based on a sample of 380 buildings which have then been used to inform the forecast for circa 290,000 buildings. The relatively low sample rate is considered a risk to the required volume.”*

We have provided evidence that our level of RLM inspections is statistically significant through the use of the statistical calculation methodology used by industry, Cochran’s formula for sample size. This is used industry wide and is approved for use by the ENA. As such, we believe that this provides the justification required to demonstrate that our inspection volumes are statistically significant and can therefore be used to determine the volume of activity that we require to undertake in RIIO-ED2. The process that we have adhered to is as follows:

Data Quality Improvement Plan - Following on from the steps above we can then quantify the data quality and assess whether this is at an acceptable level for justification for the business plan and/or for business-as-usual activities and decision making. We can then develop a plan to collect missing data and or correct/validate existing data.

A statistical approach has been followed to generate a significant and random sample size of SSEN’s asset data to verify the quality of asset data (95% confidence +/- 5% precision) across both DNO areas.

The approach chosen was the statistical method – Attribute Sampling (stratified) using the Cochran formula and random selection of the required samples.

Attribute Sampling - As the purpose is to evaluate the accuracy of the observed conditions per asset, all observed conditions per inspection of a single asset must be accurate for the asset data in scope to be considered “correct”.

Population - Distribution is comprised of two companies with a different asset profile therefore the dataset has been treated as two distinct populations – Scottish Hydro Electric Power Distribution (SHEPD) assets and Southern Electric Power Distribution (SEPD) assets.

Stratified by Region - Within the Distribution, there are seven regions that manage the inspections of assets across the two companies (three regions in SHEPD and four regions in SEPD). In order to ensure that these subgroups were reflective, the samples per company have been selected in a proportion to the relevant assets per region.

Number of Samples - The Cochran formula was applied in order to calculate the number of samples that would be required to be tested.

Random Selection - In order to select the samples, the asset data was split by region and using the RAND() function to create a random number per asset which was then sorted, the relevant number of samples per region were selected.

The statistical approach has been externally assured by Mott MacDonald for ground mount assets¹ and replicated for RLM. We can confirm that the assessment for RLM demonstrates that we have inspected a statistically significant sample size of multi-occupancy buildings across both our networks to help better understand the condition of our asset base. This has helped further inform and refine our programme of work for RIIO-ED2.

¹ SSEN_Observed_Condition_Assurance_Report_(Secondary_Deliverable_Plant_Assets)

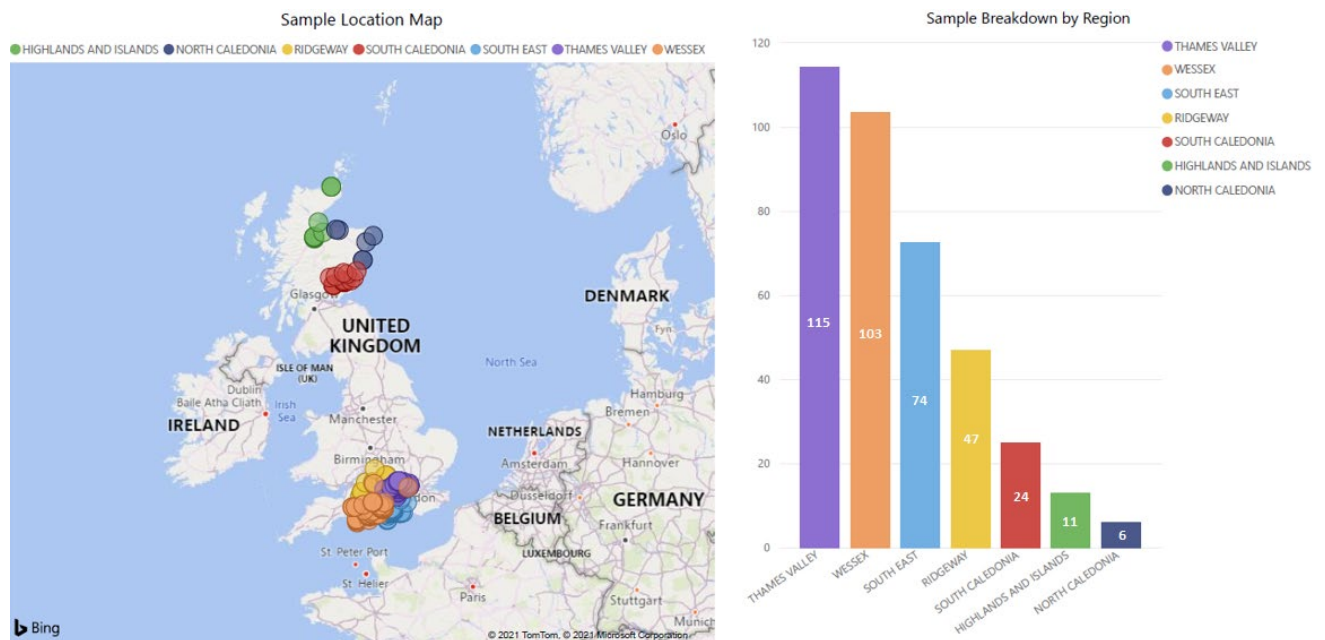


Figure 1 – Sample Number of Sites & Locations Across SHEPD and SEPD Licence Areas

As per Cochran formula, we can confirm that we have inspected a significant sample size of RLM buildings through random sampling across our entire network area.

Ofgem's response to SQ SSEN035 states: *"We are not as yet satisfied that SSEN have provided sufficient evidence to support the significance of the 0.0013% sample size (380 out of 293,000 buildings) being used to estimate condition driven interventions; and we are not satisfied that SSEN have provided sufficient evidence to demonstrate the confidence level placed on the 0.0013% sample size by SSEN."*

As per our earlier comments, the Cochran formula is method that is used industry wide and approved as a form of statistical analysis by the ENA. As part of the model, when considering a significant sample size, the confidence interval used as part of the calculation is deemed to be below a 5% threshold.

Unit Rate Assessment

Ofgem has stated *“given unit costs are modelled by property type we would generally expect the unit costs to remain fairly stable across RIIO-ED1 and RIIO-ED2 unless there was a structural change, for example in the type of property being serviced within each property category or in the way the service was being delivered.”*

A key reason for this is our plan to target a much higher proportion of RLMs in Multi-Storey buildings in RIIO-ED2 when compared to RIIO-ED1. Given that these buildings have a far greater number of individual floors, the unit cost to replace, refurbish and inspect the RLMs in each building is higher. As our RIIO-ED2 strategy and proposed interventions are fundamentally different from RIIO-ED1, we expect to see a significant, but justifiable, increase in the unit costs. Unfortunately, the CV17 table within the BPDTs do not allow us to submit cost and volumes based upon the number of floors associated with the buildings we target, instead it only enables us to report costs per building.

We made this clear in our EJP where we stated *“Please note, the costs in Table 17 are provided ‘per household’ for the purposes of calculating the required budget for repairing and replacing the RLM assets. As such, these will not match with the unit costs provided in the BPDTs which give the average costs ‘per unit’ rather than ‘per household’²”*

Our updated RIIO-ED2 strategy is a result of the ENA working group that produced Engineering Recommendation G104 for the assessment and management of Rising and Lateral Mains. This was completed following the Grenfell tower disaster and the subsequent learnings that have been adopted by the DNO community.

Our expenditure throughout RIIO-ED1 does not provide a true reflection of the actual costs required to address the safety concerns that we are highlighting in RIIO-ED2. As a result, we disagree with Ofgem’s assessment of using our median unit rate based on both RIIO-ED1 and RIIO-ED2 data as the two strategies and associated works do not align between the price controls.

From the statistically significant sample size of data that we’ve undertaken, we have undertaken a detailed assessment of the works that we believe are required to deliver the required safety benefits for our customers in high-risk buildings. Intrinsic to this assessment is the consideration of the costs associated with asset replacement, inspections and the what the mix of internal and external staff to deliver the works will be.

Based on our detailed assessment, the RIIO-ED2 unit rates that we have proposed are considered and aligned to our new strategy requirements which will enable us to target the high-risk buildings. Without the unit rate that we have calculated, will be unable to target the level of intervention that we require, and this will have inherent safety implications for network customers. For this reason, we request that Ofgem revisits its decision on unit cost to remove our RIIO-ED1 expenditure from the assessment and accept our proposed unit rates for RIIO-ED2.

² 322_SSEPD_NLR_RISING_&_LATERAL_MAINS Section 7.1.3