

Appendix WWUQ8D– Distribution Pipelines

Annex to EJD WWU.3 – Distribution Steel Pipelines

1.0 Introduction

This annex document provides additional supplementary information in support of Engineering Justification Document WWU.3 – Distribution Steel Pipelines. The content and structure has been developed based on the feedback we've gratefully received in bilateral discussions with the Ofgem Engineering Assessment team.

2.0 Winter Submission Summary

We submitted our Asset Health Engineering Justification Document (EJD) WWU.3 in December 2024. The document included a description of the assets within Distribution Steel Pipelines, including sub-assets, and we provided our justification for the interventions required on this asset group.

We explore multiple options for managing assets to arrive at an optimum plan that considers asset health, consequence of failure, whole life cost, compliance with legislation and HSE expectations. As stated in our EJD we are proposing Option 1: Balanced Plan, a combination of refurbishment and replacement interventions.

This Annex document provides the additional data that was missing from our original submission, to support the case for proceeding with Option 1: Balanced Plan, in line with our original submission.

Our RIIO-GD3 workload and the associated costs are detailed in Table 1 below:

Table 1 - RIIO-GD3 Submission Summary

	RIIO-GD3	
	Cost (£m)	Volume (No.)
Inspections – Pre-Work, Surveys and Defect Investigations/Repairs		1,964
Condition-Driven Short Length Diversions		5
Above Ground Crossing Refurbishments		140
Valve and Valve Chamber Refurbishments		400
CP System – TR, Ground bed and Test Post Replacements		620
River Bed and Bank Refurbishments		120
Shallow Depth of Cover Remediation		100
Marker Post Replacements		2,400
Build-Over Resolution		20
Total		5,769

3.0 Draft Determination Outcome

In Ofgem's Draft Determinations consultation the proposed outcome for Distribution Steel Pipelines was noted as '*Unjustified*', with all workload and costs being disallowed. The detail noted "*Volumes and unit costs are not sufficiently justified for inclusion in our draft determinations. We would require evidence to support the increase in volumes from RIIO-2 and a breakdown for major and minor interventions should be detailed. The correlation between surveys and volumes should be detailed. No volumes for alternative options were provided to support a reduced allowance.*"

Appendix WWUQ8D– Distribution Pipelines

3.1 Impact of Draft Determinations

Table 2 and 3 below compare RIIO-GD2 Actuals / Forecast, RIIO-GD3 Business Plan (Submission: December 2024) and RIIO-GD3 Draft Determinations. These comparisons are split out by spend type and work category.

Table 2 - Comparison Between: RIIO-GD2, RIIO-GD3 Business Plan & Draft Determinations

EJP	GD2 Actuals/Forecast		GD3 BP		GD3 DD	
	Workload	£	Workload	£	Workload	£
WWU.3 - Distribution Steel (CAPEX)	1,229	■	3,220	■	0	0.0m
WWU.3 - Distribution Steel (OPEX)	972	■	2,549	■	0	0.0m

Table 3 - Activities Split Out by Spend Type and Work Category

Spend Type	Work Category	GD3 BP		GD3 DD	
		Volume	Cost (£M)	Volume	Cost (£m)
Capex / Repex	Legislative Compliance - Fixed Workload	-	-	-	-
	Legislative Compliance - Variable Workload	1,800	■	0	0.0
	Other Priority Work	1,420	■	0	0.0
	Capex / Repex Total	3,220	■	0	0.0
Opex	Legislative Compliance - Fixed Workload	1,122	■	0	0.0
	Legislative Compliance - Variable Workload	1,144	■	0	0.0
	Other Priority Work	283	■	0	0.0
	Non-Routine Maintenance Opex Total	2,549	■	0	0.0
	Total	5,769	■	0	0.0

The workload categories we have illustrated are defined as follows:

- Legislative Compliance – Fixed Workload
 - Pre-Inspection: vegetation clearance
 - Inspection: close interval potential survey, route walk, coating survey, in-line inspection, in line with Annual Maintenance Plan
 - Post-Inspection: plan in any remedial works
- Legislative Compliance – Variable Workload
 - Pipeline Remedials: investigation of defects following inspection, excavation and pipeline repair to ensure continued fitness for purpose
 - Above Ground Crossing Refurbishment / Replacement: following maintenance / inspection
 - Tree Cutting
- Other Priority Work
 - New Pipeline Marking – additional mitigation for areas of reduced depth of cover
 - New Cathodic Protection Test Post – to assist in maintenance / better monitor the level of protection along the whole pipeline

Appendix WWUQ8D– Distribution Pipelines

3.2 WWU Draft Determination Response

The majority of workload increases we are forecasting from RIIO-GD2 to RIIO-GD3 are due to the increased inspection activities being performed on this asset group, particularly the re-introduction of cross-country distribution pipeline route walking in response to our experience of climate related impacts on these pipeline routes.

In addition, a review of cathodic protection across the distribution pipeline population has identified the need to invest more in this area to ensure the continued effectiveness of these systems to ensure the long-term integrity of distribution steel pipelines. This accounts for the increased volumes in the following categories:

- Inspections – Pre-Work, Surveys and Defect Investigations/Repairs
- CP System – TR, Ground bed and Test Post Replacements
- Marker Post Replacements

Our inspection activities are identifying the need for significant volumes of remedial works, ranging from basic defect investigations/repairs, to complex riverbed and bank refurbishments or full-scale condition-driven diversions. These pipelines are managed and maintained in accordance with IGEM/TD/3 to deliver compliance with the Pipeline Safety Regulations, which place a duty on WWU to “maintain the gas pipes in an efficient state, in efficient working order and in good repair” (Regulation 13).

The main impact from climate change that we are experiencing in relation to the management of this asset group is increased levels of watercourse erosion, which is being identified during our inspection activities. It should be noted that the Environment Agency / Natural Resources Wales strategy has shifted in recent decades, and they are now actively allowing watercourses to find their own course, resulting in more significant impacts on our assets.

The other two categories that have seen an increase in workload volume are Valve and Valve Chamber Refurbishments as well as addressing the risk of assets that have been built over by third parties.

In RIIO-GD2 we have commenced a survey programme of all strategic distribution valves (c. 2,000), the purpose of these valves is to provide sector isolation in the event of a significant incident, in order to limit the security of supply impact on other areas of the network. Based on some initial surveys completed to date, we are forecasting circa 20% of these valves will require remedial work from the remaining survey programme.

In RIIO-GD2 we completed geospatial analysis to identify assets that may have been built-over, across all materials, pressures and diameters, resulting in several thousand potentially built over mains for investigation. It should be noted that we have investigated circa 300 build-overs and have already progressed the resolution of a small number in RIIO-GD2 without a specific allowance for this workload.

The increase in RIIO-GD3 is due to the results from the spatial analysis and follow up site surveys, following which we have prioritised the highest risk build-overs to be resolved first. It should be noted that this is now an area of focus for the HSE following on from enforcement action taken against another network in respect of the approach to replacement of mains in private gardens.

As part of our response to SQWWU081 we went some way to explaining why the work associated with this asset group has increased, but include a more detailed explanation below of how the workloads included in our plan have been derived.

Appendix WWUQ8D– Distribution Pipelines

In order to forecast the workload for remedial works following inspections carried out in accordance with our Annual Maintenance Plan, we interrogated the past 10-years' worth of intervention programme data to derive ratio of remedial work to inspection, a '10-Year Remedial Ratio'. For example, on average we carry out one dig on a pipeline and carry out coating/defect repairs for every 4km walked when undertaking an overground inspection (Close Interval Protection Survey) to verify the level of cathodic protection along the whole length of the pipeline.

Table 4 below summarises how we have forecast these workload items, based on the relationship between the inspection and resulting remedial works derived for each inspection type.

Table 4 - Relationship Between Inspection & Remedial Works

Inspection Type	10-Year Remedial Ratio	GD3 Inspection Volumes	GD3 Remedial Works
Close Interval Potential Survey	1 dig per ~2 km	652km (176 jobs)	468 digs & any repairs
Route Walking	1 tree per ~4 km	622km (146 jobs)	125 trees
Underwater Crossing Survey	1 refurb per ~5 surveys	681 surveys	120 repairs
Total		1,003 inspections	713 interventions
		1,716 inspections / interventions	

It was noted in the feedback received from the Ofgem Engineering Team that the presentation of workload and costs at a summary level in our EJD, repeated above in Table 1, did not allow detailed assessment of work items and discrete costs due to our grouping of activities together. As such the following detail was requested:

1. Remediation required, proposed balance plan, so how many will be refurbishments and how many replacements? And volume against each intervention type.
2. Unit cost for refurbishment and replacement broken out for each intervention type
3. Volume breakdown for reactive-only option

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Appendix WWUQ8D– Distribution Pipelines

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in Appendix E details the scope of each discrete intervention in our plan (rows) and includes the total cost and volume of each intervention. Denoted by the ticks, the table also details whether the individual intervention item is included in the Baseline (Reactive Only) option, Option 1 (Balanced Plan) and/or Option 2 (Replace Only). Also included in this table is the unit cost of each intervention.

4.0 Conclusion

Following feedback in the WWU Draft Determinations document and the Bilateral meeting between Ofgem and WWU on 5th August 2025, this Annex document provides the additional data that was missing from our original submission, to support the case for proceeding with Option 1: Balanced Plan, in line with our original submission. We hope this is an adequate explanation for Ofgem to support our case for the workload presented in our EJD, rather than the zero workload proposed in the Draft Determinations.

Appendix WWUQ8D– Distribution Pipelines

5.0 Appendices

Appendix E Table 5 - Intervention Scope by Cost & Volume for Each Option, including Unit Cost

Intervention Scope	Cost (£m)	Volume (No.)	Baseline (Reactive Only)	Option 1 (Balanced Plan)	Option 2 (Replace Only)	Unit Cost (£k)
Above Ground Crossing Refurbishment	████	89		ü	Diversion	████
Aerial Marker Post New Installation	████	200		ü	ü	████
Aerial Marker Post Replacement	████	200		ü	ü	████
Anode Replacement	████	100	ü	ü	ü	████
CIPS Digs / Refurbishment	████	468	ü	ü	ü	████
Close Interval Potential Survey (CIPS)	████	176	ü	ü	ü	████/km
Condition Based Diversion	████	25		ü	ü	████
CP Test Post New Installation	████	50	ü	ü	ü	████
CP Test Post Refurbishment	████	50	ü	ü	ü	████
CP Test Post Replacement	████	180	ü	ü	ü	████
Crossing Guard New Installation	████	20		ü	Replaced	████
Crossing Guard Refurbishment	████	11		ü	Replaced	████
Current Attenuation Survey	████	3	ü	ü	ü	████/km
Decommission/Remove AG Crossing	████	20		ü	ü	████
Functional Check of Valve	████	243	ü	ü	ü	████
Ground Bed New	████	20	ü	ü	ü	████
Ground Bed Replacement	████	30	ü	ü	ü	████
Logger Replacement	████	10	ü	ü	ü	████
Marker Post New Installation	████	1,000		ü	ü	████
Marker Post Replacement	████	1,000		ü	ü	████
New Anodes	████	50	ü	ü	ü	████
New Logger	████	60	ü	ü	ü	████
New Valve Chamber	████	10		ü	ü	████
Riverbed/Bank Refurbish (Incl. Pipe)	████	120		ü	Diversion	████
Route Walking	████	146	ü	ü	ü	████/km
Scrub Clearance	████	117	ü	ü	ü	████/km
Shallow Depth of Cover Remediation	████	100		ü	Diversion	████
Sleeve Refurbishment	████	6	ü	ü	ü	████
TR New Install	████	20	ü	ü	ü	████
TR Replacement	████	50	ü	ü	ü	████
Tree Clearance For Surveys	████	125	ü	ü	ü	████
Underwater Crossing Survey (5+ Years)	████	680	ü	ü	ü	████
Valve Chamber Lids	████	20		ü	ü	████
Valve Chamber Refurbishment	████	10		ü	Replaced	████
Valve Refurbishment	████	300		ü	Replaced	████
Valve Replacement	████	60		ü	ü	████
Total	████	5,769	Vol. 2,584	Vol. 5,769	Vol. 5,769	