Annex to EJD WWU.11 – LTS AGI (E&I): Offtakes. PRI's and Storage

## 1.0 Introduction

This annex document provides additional supplementary information, specifically for Electrical and Instrumentation assets, in support of EJD WWU.11 – LTS AGI (E&I): Offtakes. PRI's and Storage. 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 December 2024 Business Plan Submission Summary

We submitted our Asset Health Engineering Justification Framework Document EJD WWU.11 in December 2024. The document included a description of the Electrical and Instrumentation assets that require intervention in RIIO-GD3. This covers LTS AGIs and the Distribution Pressure Management Control Equipment at District Governors and across the distribution system monitoring and controlling pressure. Our plan was derived following assessment of the risk relating to each asset, whether that be obsolescence, condition, network supply resilience or legislative compliance.

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

| Submission | Asset Type | Intervention Driver | RIIO:GD3 Submission | |
|---|---|---|---|---|
| | | | Volume Requested | Cost of Intervention |
| LTS AGI E&I | MAINS AND SUB MAINS DISTRIBUTION | Condition | 23 | [redacted] |
| LTS AGI E&I | LIGHTING | Condition | 42 | |
| LTS AGI E&I | MAINS INTAKE | Condition | 24 | |
| LTS AGI E&I | SECURITY CCTV INSTALLATION | Condition | 5 | |
| LTS AGI E&I | GENERATOR STANDBY POWER SYSTEM | Condition | 3 | |
| LTS AGI E&I | LGT SYSTEM | Condition | 5 | |
| LTS AGI E&I | GAS CHROMOTOGROPHY | Condition | 1 | |
| LTS AGI E&I | FIELD INSTRUMENT | Condition | 52 | |
| LTS AGI E&I | TELEMETRY & BARRIER SYSTEM | Obsolescence | 52 | |
| LTS AGI E&I | E/P CONTROLLER | Obsolescence | 20 | |
| LTS AGI E&I | FLOW COMPUTER | Obsolescence | 8 | |
| LTS AGI E&I | IND COMPUTER | Obsolescence | 7 | |
| LTS AGI E&I | UPS SYSTEMS (LARGE) | Condition | 5 | |
| LTS AGI E&I | FISCAL METERING | Condition | 5 | |
| LTS AGI E&I | Type 2 SPD Installations | Safety & Compliance | 50 | |
| LTS AGI E&I | Replace Gas Chromatograph Secondary Instrumentation | Condition | 5 | |
| LTS AGI E&I | SCOFF Sites to SCADA | Supply Resilience | 15 | |
| LTS AGI E&I | UPS System Battery Replacements | Condition | 60 | |
| LTS AGI E&I | Telemetry HMI Replacement | Condition | 20 | |
| LTS AGI E&I | GPRS Replacement (2G/3G Comms) | Obsolescence | 180 | |
| LTS AGI E&I | Satellite Routers Replacement | Obsolescence | 100 | |
| LTS AGI E&I | NET 0 - Smart Systems | Biomethane Entry | 19 | |
| LTS AGI E&I | Field Asset Equipment Failures | Condition | 10 | |
| LTS AGI E&I | Heat Exchanger Burst Disc Replacements | Condition | 60 | |
| LTS AGI E&I | Solar Panel Installations | Environmental | 5 | |
| LTS AGI E&I | P4T & P6T Instrument Impulse Valve replacements | Safety & Compliance | 18 | |
| LTS AGI E&I | Sixnet Telemetry TRU Replacements | Obsolescence | 160 | |
| | | **TOTAL** | **954** | |
| <7Bar PM | DG ELECTRICAL REBUILD | Condition | 5 | |
| <7Bar PM | PRESSURE MANAGEMENT EQUIPMENT | Condition | 1580 | |
| <7Bar PM | VALIDATION LOGGERS | Condition | 180 | |

Table 1

We explored 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. In addition, a plan which responds proportionately to the cyber threat landscape changes and deals in a proportionate way with the increase in obsolescence of Electrical and Instrumentation equipment.

## 3.0 WWU Draft Determination

### 3.1 Electrical and Instrumentation Overview

In Ofgem's Draft Determinations consultation the proposed outcome for LTS AGI (E&I): Offtakes, PRI's and Storage was noted as 'Unjustified' with a 'Medium Confidence' in scope, and our proposed workload and associated costs were disallowed. The detail noted that "Proposed volumes are not sufficiently justified to support inclusion in our draft determinations. A direct correlation between site surveys and intervention volumes should be established alongside a plan for managing the workforce for the proposed increased volumes. Asset health data is required to verify need for intervention."

This Annex document aims to provide the additional data and more detailed explanations to support the case for including the workload volumes from our original submission in the Final Determinations. We also include copies of correspondence from Original Equipment Manufacturers (OEMs) to support the investment case.

The following sections 3.2, 3.3 and 3.4t provide a further breakdown of the proposed workloads, along with supporting data and justifications.

### 3.2 Electrical and Instrumentation Obsolescence driven work

Our intervention programme in RIIO-GD3 focuses more on electrical and instrumentation obsolescence than in RIIO GD2 when this was not a significant driver for investment. Table 2 and 3 below provides a relative comparison between price controls.

| LTS AGI Intervention Driver | GD2 Cost | GD2 % Cost | GD3 Cost | GD3 % Cost |
|---|---|---|---|---|
| **Obsolescence** | £0 | 0% | [redacted] | 20% |
| **Condition, Safety & Compliance** | £14,427,290 | 100% | [redacted] | 76% |
| **Biomethane Entry** | £0 | 0% | [redacted] | 2% |
| **Environmental** | £0 | 0% | [redacted] | 1% |
| **Network Resillience** | £0 | 0% | [redacted] | 1% |
| | **£14,427,290** | **100.00%** | [redacted] | **100.00%** |

Table 2

| LTS AGI Intervention Driver | Average Vol per control | GD2 Vol | GD2% Vol | GD3 Vol | GD3% Vol |
|---|---|---|---|---|---|
| **Obsolescence** | N/A | 0 | 0% | 532 | 56% |
| **Condition, Safety & Compliance** | 583 | 521 | 100% | 383 | 40% |
| **Biomethane Entry** | 0 | 0 | 0% | 19 | 2% |
| **Environmental** | 0 | 0 | 0% | 5 | 1% |
| **Network Resiliance** | 0 | 0 | 0% | 15 | 2% |
| | **583** | **521** | **100.00%** | **954** | **100.00%** |

Table 3

This comparison shows that the workload and cost associated with Condition, Safety and Compliance has reduced between GD2 and GD3 (from 521 projects to 383 projects) but there is an overall increase in total workload and cost due to the addition of 532 projects that are directly attributed to addressing obsolescence.

Electrical and Instrumentation equipment obsolescence has steadily increased through RIIO GD2 driven by two factors: availability of precious metals required to produce certain types of microchips; and OEM's choosing to retire legacy equipment in order to bolster sales of new equipment post-COVID. Copies of correspondence from OEMs in respect to making certain equipment obsolete is included in Appendix K-N.

In the Draft Determinations we were asked how we plan to manage the workforce for the proposed increased workload volume from 521 work items in GD2 to 954 work items in GD3. As already stated above, the increase is associated with obsolescence and it should be noted that this work typically takes up to one or two days to complete, with a significant proportion of the cost being the equipment. By contrast Electrical or Instrumentation rebuilds to address Condition, Safety and Compliance, where the work duration is much longer ranging from several days to a number of weeks in some cases.

We have detailed resource models into which we input workload volumes and work location across the network. These models then accurately forecast resources needed to deliver the full workload mix, based on target times for each work activity. This has confirmed that the reduction in Condition, Safety and Compliance intervention workload will free up adequate resources to accommodate the increase in obsolescence workload.

It should be noted that a further workload of 5000 smart locks was incorrectly included in the BPDT workload for this area. This workload is part of our physical security upgrade programme and will not be delivered by E&I resources.

At the Bilateral meeting between Ofgem and WWU on 5th August 2025, we were asked to explain how we had determined to the proportion of obsolete equipment planned for replacement in GD3 for each equipment type. Table 4 below provides an overview of the equipment and volumes to be replaced in RIIO GD3 under equipment obsolescence.

| LTS AGI Obsolescence Work | Average Age | Lifecycle Duration Years | Inventory Numbers | GD3 Vol | GD3% Vol of Inventory |
|---|---|---|---|---|---|
| TELEMETRY & BARRIER SYSTEM | 2014 | 15 | 307 | 52 | 17% |
| FLOW COMPUTER | 2005 | 15 | 17 | 8 | 47% |
| IND COMPUTER | 2005 | 15 | 16 | 7 | 44% |
| GPRS Replacement (2G/3G Comms) | 2012 | 15 | 307 | 180 | 59% |
| Satellite Routers Replacement | 2012 | 15 | 307 | 100 | 33% |
| Sixnet Telemetry RTU Replacements | 2012 | 15 | 215 | 160 | 74% |
| E/P CONTROLLER | 2005 | 15 | 20 | 20 | 100% |
| UPS SYSTEMS (LARGE) | 2014 | 15 | 24 | 5 | 21% |

Table 4

From the average age of this equipment it can be seen that much of it is nearing or beyond the end of its expected asset life, typically around 15 years, some of which is still operating to an acceptable level with only occasional faults. Due to the nature of these pieces of equipment, they don't necessarily show signs of imminent failure that can be demonstrated through asset health or fault data, they will in most cases operate effectively until the point of failure, Our approach is therefore based on addressing the risk of continuing to operate obsolete equipment and the consequence of those failures when they occur. If this risk is not addressed, then in the event of failure where a direct replacement can no longer be sourced,

there will be extended outages and more extensive and costly one-off interventions to remediate with new components due to the requirement to redesign the system for the different components.

We could have chosen to replace the whole inventory for each asset in RIIO GD3, whilst this would completely remove the obsolescence risk for a particular asset, it would not demonstrate best return on investment by failing to utilise the remaining asset life. Our strategy is therefore to follow a risk-based approach to replace a proportion in RIIO-GD3, releasing spares to exchange with the remaining population should they fail. This has two distinct advantages: making use of the remaining asset life for the newer items in the population; and spreading workload and costs over several price controls. The percentage replacement rate for each type of equipment has been based on criticality, risk, failure data (where it exists) and difficulty / time to replace a given asset.

An example where we are experiencing significant failure rates is E/P (Electronic to Pneumatic) Controllers, these components are key to controlling volumetric regulators on our most critical sites, they are also relatively low cost items to replace. As such we are planning replacement of 100% of this type of equipment in GD3 to mitigate the risk.

By contrast Flow Computers have a relatively low failure rate, but are complex and costly to replace with a fully OEM supported alternative. These items usually show no signs of imminent failure in advance of a failure occurring, if an identical unit is available to switch for the failed unit this is a low risk, but now they are obsolete this is a high risk. As such we are planning to replace around half of the population in GD3, and the removed items will be held as spares, providing exchange items for the other sites. This approach will spread the workload and cost associated with engineering out obsolete Flow Computers across GD3 and GD4, delivering better value to the consumer.

The proposed replacement volumes for GD3 are also influenced by the fact that for some items replacement has already begun in GD2. An example of this is the GPRS units on telemetry units, where during telemetry rebuilds in the latter part of GD2 we have already started replacing the obsolete units with a fully OEM supported alternative. It should be noted that waiting for all obsolete units to be naturally replaced as part of full telemetry rebuilds will not address obsolescence quickly enough, hence including a targeted programme of replacement outside of the infrequent full rebuild programme.

A further benefit of replacing some of the obsolete items is that it will improve the security architecture (the practice of designing systems, policies, and in this case technologies to protect IT and business assets from cyber threats) for the given set of Networkable Information System (NIS) assets. We are obligated to ensure these systems are suitably hardened in alignment with the Cyber Assessment Framework (CAF). Table 5 lists these items, and the proportion of the obsolescence investment linked to this benefits case.

| LTS AGI Obsolescence Work | GD3 Cost | GD3 % Cost |
|---|---|---|
| TELEMETRY & BARRIER SYSTEM | [redacted] | 24% |
| FLOW COMPUTER | | 17% |
| IND COMPUTER | | 3% |
| GPRS Replacement (2G/3G Comms) | | 3% |
| Satellite Routers Replacement | | 8% |
| Sixnet Telemetry RTU Replacements | | 30% |
| | | **84.60%** |

Table 5

The purpose of the equipment identified as obsolete and the consequence of failures are highlighted in table 6. All will impact our ability to fulfil our responsibilities as a Gas Transporter, both in terms of reporting and network control, incident response management and overall gas network resilience.

| LTS AGI Obsolescence Work | Equipment | Purpose | Consequence |
|---|---|---|---|
| TELEMETRY & BARRIER SYSTEM | Various Ex Barrier Chassis, network Hubs and equipment | Remote site data acquisition in to SCADA, field asset safety and conditioning. | Loss of visability & alarming of key process parameters at site back to SCADA |
| FLOW COMPUTER | OMNI 6000 Flow Computer | Volumetric control (line storage), Fiscal Gas energy Calculation, Local Gas Treatment odorant control. | Inability to control proportionally odorant injection. Loss of line pack control at site. Unable to provide relaible regulatory Gas energy data (Fiscal Metering) |
| IND COMPUTER | Siemens Microbox / Nanobox | Fiscal Gas energy Calculation | Unable to provide relaible regulatory Gas energy data (Fiscal Metering) |
| GPRS Replacement (2G/3G Comms) | Various (Retirement of 3G Comms) | Communication resiliance to remote sites. | Loss of visability & alarming of key process parameters at site back to SCADA |
| Satellite Routers Replacement | I-direct Satellite router | Communication resiliance to remote sites. | Loss of visability & alarming of key process parameters at site back to SCADA |
| Sixnet Telemetry RTU Replacements | Sixnet Redlion RTU's (Sixtrak & Versatrak) | Remote site data acquisition including some alarm functioning back to SCADA. | Loss of visability & alarming of key process parameters at site back to SCADA |
| E/P CONTROLLER | Watson Smith 422 E/P Controller | Allow volumetric control at sites for pipeline storage and pressure control | Inability to provide volumetric storage for peak Gas demands. |
| UPS SYSTEMS (LARGE) | Various mostly Bennings | Back up power at site providing a resilient controlled Gas network. | Loss of visability & alarming of key process parameters at site back to SCADA and loss of supplies to Odorant and Fiscal Systems |

Table 6

### 3.3 Electrical and Instrumentation LTS Legislative compliance driven work

Tables 7 below illustrates that £[redacted] of our proposed GD3 investment is to ensure our E&I assets are maintained in an acceptable condition, to ensure the safety of our employees and members of the public, as well as deliver compliance with the relevant electrical and Dangerous substances Explosive Atmospheres regulations. This workload is separate from the interventions described above to address obsolescence. This investment is less than the projected outturn in RIIO GD2 of £[redacted] .

| LTS AGI Intervention Driver | GD2 Cost | GD2 % Cost | GD3 Cost | GD3 % Cost |
|---|---|---|---|---|
| **Obsolescence** | £0 | 0% | [redacted] | 20% |
| **Condition, Safety & Compliance** | £14,427,290 | 100% | | 76% |
| **Biomethane Entry** | £0 | 0% | | 2% |
| **Environmental** | £0 | 0% | | 1% |
| **Network Resillience** | £0 | 0% | | 1% |
| | **£14,427,290** | **100.00%** | | **100.00%** |

Table 7

It should be noted that the table included in our Engineering Justification Document, repeated below as Figure 1, incorrectly quoted the RIIO GD2 cost for the equivalent workload as £[redacted] . This cost was the proposed investment in our GD2 Business Plan in 2018/19 prices, and we should instead have noted in our forecast GD2 outturn costs (£[redacted] ).

| LTS AGI E&I Workload | RIIO-GD2 | | RIIO-GD3 | |
|---|---|---|---|---|
| | Cost (£) | Workload (No. of Projects) | Cost (£) | Workload (No. of Projects) |
| **Replacement** | £8.98m | 521 | £16.2m | 954 |

Figure 1

Workload proposed, outside of obsolescence, is lower in RIIO GD3 than in GD2 (table 8), but we will be targeting some of the larger sites as compared to our GD2 programme. These sites have much more E&I equipment and thus the materials costs are significantly higher, so the unit cost is around 28% higher in GD3.

| LTS AGI Intervention Driver | Average Vol per control | GD2 Vol | GD2% Vol | GD3 Vol | GD3% Vol |
|---|---|---|---|---|---|
| **Obsolescence** | N/A | 0 | 0% | 532 | 56% |
| **Condition, Safety & Compliance** | 583 | 521 | 100% | 383 | 40% |
| **Biomethane Entry** | 0 | 0 | 0% | 19 | 2% |
| **Environmental** | 0 | 0 | 0% | 5 | 1% |
| **Network Resiliance** | 0 | 0 | 0% | 15 | 2% |
| | **583** | **521** | **100.00%** | **954** | **100.00%** |

Table 8

A further question raised in the Draft Determination was how the numbers of maintenance routines (Table 4 of EJP) and Asset audits (Table 3 of EJP) relate to intervention numbers and asset health.

Table 9 and gives an overview of intervention workload volumes based on a simple lifecycle replacement analysis, showing the average volume that would be due for replacement in the GD3 period based on this approach. The table then shows how this compares to the actual workload included in our GD3 plan, which is based on our experience of workload we have identified through our inspection and maintenance programme over previous price control periods, which has been used to generate our forecast.

As can be seen from the negative variance, in most cases our replacement workload is less than it would be based on a simple lifecycle approach.

| Submission | Asset Type | Intervention Driver | Asset Data | | | | Average replacement per Price control | | RIIO:GD3 Submission | | Variance | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Asset Numbers | Average Age | Lifecycle | Price Control Duration | Volume per control | % per Control | Volume Requested | % per Control | Volume Diff | % Diff |
| LT AGI E&I | MAINS AND SUB MAINS DISTIBUTION | Condition | 307 | 2013 | 25 | 5 | 61 | 20% | 23 | 7% | -38 | -13% |
| LT AGI E&I | LIGHTING | Condition | 307 | 2013 | 20 | 5 | 77 | 25% | 42 | 14% | -35 | -11% |
| LT AGI E&I | MAINS INTAKE | Condition | 307 | 2013 | 25 | 5 | 61 | 20% | 24 | 8% | -37 | -12% |
| LT AGI E&I | SECURITY CCTV INSTALLATION | Condition | 20 | 2013 | 15 | 5 | 7 | 33% | 5 | 25% | -2 | -8% |
| LT AGI E&I | GENERATOR STANDBY POWER SYSTEM | Condition | 35 | 2014 | 15 | 5 | 12 | 33% | 3 | 9% | -9 | -25% |
| LT AGI E&I | LGT SYSTEM | Condition | 17 | 2014 | 20 | 5 | 4 | 25% | 5 | 29% | 1 | 4% |
| LT AGI E&I | GAS CHROMOTOGRAPHY | Condition | 16 | 2019 | 20 | 5 | 4 | 25% | 1 | 6% | -3 | -19% |
| LT AGI E&I | FIELD INSTRUMENT | Condition | 307 | 2016 | 15 | 5 | 102 | 33% | 52 | 17% | -50 | -16% |
| LT AGI E&I | FISCAL METERING | Condition | 17 | 2012 | 15 | 5 | 6 | 33% | 5 | 29% | -1 | -4% |
| | | | | | | | | | | | | |
| LT AGI E&I | Type 2 SPD Installations | Safety & Compliance | 307 | N/A | 25 | 5 | 61 | 100% | 50 | 100% | -11 | 0% |
| LT AGI E&I | Replace Gas Chromatograph Secondary Instru | Condition | 16 | 2019 | 15 | 5 | 5 | 33% | 5 | 31% | 0 | -2% |
| LT AGI E&I | SCOFF Sites to SCADA | Supply Resiliance | 0 | N/A | 15 | 5 | 0 | 0% | 15 | 100% | 15 | 100% |
| LT AGI E&I | UPS System Battery Replacements | Condition | 60 | N/A | 5 | 5 | 60 | 100% | 60 | 100% | 0 | 0% |
| LT AGI E&I | Telemetry HMI Replacements | Condition | 307 | N/A | 15 | 5 | 102 | 33% | 20 | 7% | -82 | -27% |
| LT AGI E&I | Net 0 - Smart Systems | Biomethane Entry | 0 | N/A | 15 | 5 | 0 | 0% | 19 | 100% | 19 | 100% |
| LT AGI E&I | Field Asset Equipment Failures | Condition | 10 | N/A | 5 | 5 | 10 | 100% | 10 | 100% | 0 | 0% |
| LT AGI E&I | Heat Exchanger Burst Disc Replacements | Condition | 60 | N/A | 5 | 5 | 60 | 100% | 60 | 100% | 0 | 0% |
| LT AGI E&I | Solar Panel Installations | Environmental | 0 | N/A | 25 | 5 | 0 | 0% | 5 | 100% | 5 | 100% |
| LT AGI E&I | P4T & P6T Instrument Impulse Valve replacen | Safety & Compliance | 27 | N/A | 15 | 5 | 0 | 0% | 18 | 67% | 18 | 67% |

Table 9 (extract from Appendix J)

Results from both maintenance and inspection routines, asset site audits and equipment fault records all feed into a lifecycle management tool we have developed to rating specific asset groups as red, amber or green for Electrical and Instrumentation equipment on each site.

Whilst looking at a nominal asset lifecycle for a given asset, the tool also takes into account the condition and performance of the equipment, allowing equipment in some cases to be operated beyond its expected

lifecycle without compromising safety and reliability, thus offering improved return on investment and a risk-based programme of intervention.

Table 10 shows the Intervention RAG rating (Red, Amber, Green) across the population of E&I assets, giving a priority for intervention as follows: Red – Urgent, Amber – Plan, Green – Monitor.

Our GD3 plan will remediate all equipment rated Red and the majority of equipment rated Amber in the Lifecycle Management tool, whilst continuing to monitor other assets with ongoing inspection and maintenance routines.

The file in appendix A, offers both asset health data and fault data pertinent to each asset group planned for replacement for Condition, Safety and Compliance in our RIIO GD3 business plan for LTS AGI (E&I): Offtakes. PRI's and Storage. This is also shown in part below in Table 10.

| Submission | Asset Type | Intervention Driver | Asset Data | Avg replacement per Price control | RIIO:GD3 Submission | Faults | No. Intervention Rating Rag | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Asset Numbers | Volume per control | Volume Requested | ESS Fault Raised | R | A | R&A | G |
| LT AGI E&I | MAINS AND SUB MAINS DISTIBUTION | Condition | 307 | 61 | 23 | 493 | 0 | 30 | 30 | 277 |
| LT AGI E&I | LIGHTING | Condition | 307 | 77 | 42 | 158 | 0 | 76 | 76 | 231 |
| LT AGI E&I | MAINS INTAKE | Condition | 307 | 61 | 24 | 69 | 0 | 31 | 31 | 276 |
| LT AGI E&I | SECURITY CCTV INSTALLATION | Condition | 20 | 7 | 5 | 5 | 0 | 18 | 18 | 2 |
| LT AGI E&I | GENERATOR STANDBY POWER SYSTEM | Condition | 35 | 12 | 3 | 40 | 3 | 0 | 3 | 32 |
| LT AGI E&I | LGT SYSTEM | Condition | 17 | 4 | 5 | 391 | 5 | 0 | 5 | 12 |
| LT AGI E&I | GAS CHROMOTOGRAPHY | Condition | 16 | 4 | 1 | 79 | 0 | 1 | 1 | 15 |
| LT AGI E&I | FIELD INSTRUMENT | Condition | 307 | 102 | 52 | 694 | 9 | 57 | 66 | 241 |
| LT AGI E&I | FISCAL METERING | Condition | 17 | 6 | 5 | 26 | 4 | 1 | 5 | 12 |
| LT AGI E&I | Type 2 SPD Installations | Safety & Compliance | 307 | 61 | 50 | No Current Fault Data / Not fault driven | | | | |
| LT AGI E&I | Replace Gas Chromatograph Secondary Instrumentation | Condition | 16 | 5 | 5 | 5 | N/A | N/A | N/A | N/A |
| LT AGI E&I | SCOFF Sites to SCADA | Supply Resiliance | 0 | 0 | 15 | No Current Fault Data / Not fault driven | | | | |
| LT AGI E&I | UPS System Battery Replacements | Condition | 60 | 60 | 60 | 783 | N/A | N/A | N/A | N/A |
| LT AGI E&I | Telemetry HMI Replacements | Condition | 307 | 102 | 20 | 8 | N/A | N/A | N/A | N/A |
| LT AGI E&I | Net 0 - Smart Systems | Biomethane Entry | 0 | 0 | 19 | No Current Fault Data / Not fault driven | | | | |
| LT AGI E&I | Field Asset Equipment Failures | Condition | 10 | 10 | 10 | 67 | N/A | N/A | N/A | N/A |
| LT AGI E&I | Heat Exchanger Burst Disc Replacements | Condition | 60 | 60 | 60 | 23 | N/A | N/A | N/A | N/A |
| LT AGI E&I | Solar Panel Installations | Environmental | 0 | 0 | 5 | No Current Fault Data / Not fault driven | | | | |
| LT AGI E&I | P4T & P6T Instrument Impulse Valve replacements | Safety & Compliance | 27 | 0 | 18 | No Current Fault Data / Not fault driven | | | | |

Table 10 (Extract from Appendix J)

In some cases, fault numbers far exceed the volume of interventions proposed, this is because multiple faults may have been highlighted on the same system or may have been remediated through repair or general operational costs. An example of this would be labels missing from equipment, lamp out on a given light fitting or battery terminal corroded, all of which are repaired during routine maintenance.

It should also be noted that in places we have requested less interventions than are rated Red or Amber, this is because some Amber items have been planned for intervention beyond the end of GD3 to maintain a broadly constant workload across years. In the interim period the risk will continue to be managed through additional inspection and maintenance through GD3.

### 3.4 Electrical and Instrumentation <7bar Legislative compliance driven work

The final part of our E&I intervention programme relates to equipment installed on the below 7bar network. In GD2 this was detailed as part of the Pressure Management and Governor submission, however as it is Electrical and Instrumentation work we have included it in the E&I EJP in our RIIO GD3 submission.

Table 11 shows the proposed investment of £[redacted] in RIIO GD3 for this asset group, as compared to £1,966,531 in RIIO GD2. Whilst this represents a [redacted]% increase from RIIO GD2, equipment costs have increased and replacement hasn't kept up with the level required to maintain the reliability of this equipment and lifecycle analysis, typically 1519 over a five-year period.

Table 11

| <7 Bar Pressure Management E&I | GD2 Cost | % Cost | GD3 Cost | % Cost |
|---|---|---|---|---|
| **Condition** | £1,966,531 | 100% | [redacted] | 100% |
| | **£1,966,531** | **100.00%** | [redacted] | **100.00%** |

The shortfall on GD2 has delivered savings to the consumer, but is unsustainable and needs to be recovered in GD3, hence the proposed increase in particular for replacement loggers shown in table 12.

| <7 Bar Pressure Management E&I | Average Vol per control | GD2 Vol | % Vol | GD3 Vol | % Vol |
|---|---|---|---|---|---|
| **Condition** | 1519 | 1190 | 100% | 1765 | 100% |
| | **1519** | **1190** | **100.00%** | **1765** | **100.00%** |

Table 12

These assets not only help manage the distribution network pressures directly feeding customers, but they are also critical for ongoing analysis of the network to drive timely reinforcement intervention. These assets also provide network monitoring and alarms, informing network response to pressure problems before consumers are affected, providing overall network resilience where time critical response is imperative to ensure continued gas supply to customers.

Table 13 provides an overview of workload volumes in GD3 against the average numbers we would expect in GD3 based on lifecycle analysis, similar to the illustration provided in section 3.3 Table 9 for LTS E&I assets.

| Submission | Asset Type | Intervention Driver | Asset Data | | | Avg replacement per Price control | | RIIO:GD3 Submission | | Variance | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Asset Numbers | Average Age | Lifecycle | % per control | Volume per control | Volume Requested | % per Control | Volume Diff | % Diff |
| <7Bar PM | DG ELECTRICAL REBUILD | Condition | 36 | 2012 | 25 | 20% | 7 | 5 | 14% | -2 | -6% |
| <7Bar PM | PRESSURE MANAGEMENT EQUIPMENT | Condition | 3987 | Various | 15 | 33% | 1329 | 1580 | 40% | 251 | 6% |
| <7Bar PM | VALIDATION LOGGERS | Condition | 548 | Various | 15 | 33% | 183 | 180 | 33% | -3 | 0% |

Table 13 (Extract from Appendix J)

The higher than average workload for pressure management logging and control equipment can be seen on the second row of the table.

District Governor (DG) Electrical rebuilds are also detailed separately to ensure they are separated from the LTS AGI Electrical rebuilds detailed earlier in this document. In the same manner as described in section 3.3, Intervention RAG rating (Red, Amber, Green) refers to the priority of intervention as follows: Red – Urgent, Amber – Plan, Green – Monitor.

Our intervention programme will remediate all sites rated Amber in our Lifecycle Management tool, we will continue to monitor other assets with ongoing inspection and maintenance routines, as shown in Table 14 below. This workload will fully replace the electrical equipment on five of the 36 district governor sites with electrical supply and equipment.

| Submission | Asset Type | Intervention Driver | Asset Data | Avg replacement per Price control | RIIO:GD3 Submission | Faults | No. Intervention Rating Rag | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Asset Numbers | Volume per control | Volume Requested | ESS Fault Raised | R | A | R&A | G |
| <7Bar PM | DG ELECTRICAL REBUILD | Condition | 36 | 7 | 5 | 35 | 0 | 5 | 5 | 31 |
| <7Bar PM | PRESSURE MANAGEMENT EQUIPMENT | Condition | 3987 | 1329 | 1580 | 1039 | N/A | N/A | N/A | N/A |
| <7Bar PM | VALIDATION LOGGERS | Condition | 548 | 183 | 180 | 128 | N/A | N/A | N/A | N/A |

Table 14 (Extract from Appendix J)

## 4.0 Conclusion

Following feedback in the WWU Draft Determinations and the Bilateral meeting between Ofgem and WWU on 5th August 2025, the detailed explanations and additional data requested are provided in this Annex document and its appendices. This provides the supplementary information requested to support inclusion of the workload included in our LTS AGI (E&I): Offtakes, PRI's and Storage EJD in the GD3 Final Proposals.

5.0 Appendices

Appendix J

Appendix WWUQ8J- RIIO GD3 E&I EJP Asset Health Data

Appendix WWUQ8J-
RIIO GD3 E&I EJP Ass

Appendix K

Appendix WWUQ8K- Update Notice of Changes in OMNI

Appendix WWUQ8K-
RTU General EOL Not

Appendix L

Appendix WWUQ8L- FW Discontinuation letter FLOWSIC600

**Appendix WWUQ8L-
FW Discontinuation le**

Appendix M

Appendix WWUQ8M- Update Notice of Changes in OMNI

Appendix WWUQ8M-
Update Notice of Cha

Appendix N

Appendix WWUQ8N- Product Obsolescence Notice

Appendix WWUQ8N-
Product Obsolescence

Appendix O

Appendix WWUW8O- RE EXT FW Faulty Watson Smith 422 ex IP unit delivery date for new units

**Appendix WWUW8O-
RE EXT FW Faulty Wat**