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# APPENDIX A16

## BUSINESS PLAN DATA TEMPLATES (BPDT) COMMENTARY

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11th December 2024

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## NGN submission

11 December 2024

### Monthly inflation

The template currently contains actual inflation to June 2024; forecast inflation rates are derived using March OBR forecast as prescribed by Ofgem.

## Totex Data Tables

### S1.00 Totex Cost Summary and S1.01 Workload Summary

These tables are autopopulated, we provide detail of assumptions in constituent tables and associated BP documents.

#### S1.02 RPE & OE

We have calculated the RPE indices for each cost category based on the forecasted RPEs for each input category (i.e. labour, materials, transport & plant) and the RPE weightings for each cost category (i.e. opex, capex, repex). The RPE & OE tab also includes the OE forecasts for each costs category with our assumptions set out below.

1. Rows 15 to 19 present the forecasted RPEs for labour, material, and transport & plant, taking an unweighted average across all the relevant indices.
  - a. As set out in section 6.4 of the Cost Justification and Benchmarking Approach Annex (CJBA), we have selected a list of 6 labour indices, 10 material indices, and 4 indices related to transport and plant inputs. This list goes beyond the list of indices considered by Ofgem in RIIO-GD2 and does not apply a materiality threshold, in line with the recommendations set out in section 6.3 of the CJBA.
    - i. The selected list of indices was informed by the work conducted by KPMG and attached to the CJBA. KPMG identified an extensive list of relevant indices through a detailed review of regulatory documentation, business plans and consultation reports associated with recent price controls conducted by Ofgem, Ofwat and the UR.
    - ii. KPMG then selected the 20 indices using the threshold criteria of independence and accuracy.
  - b. We note that the labour input categories potentially subject to RPE could be split into general and specialist labour. We

also note that equipment and plant could be a separate category from transport. However, given the list of indices that we have proposed above we suggest grouping specialist and general labour into labour and grouping plant, equipment, and transport together.

- c. We weighted equally all indices within each input category, in line with Ofgem's RIIO-GD2 approach. However, we are of the view that further consideration should be given to weighting of indices, in line with the recommendation set out in section 6.3 of the CJBA.
  - d. Ex-ante forecasts are provided based on the long-term average growth (LTAG) rates of indices, in line with Ofgem's approach for materials indices in RIIO-GD2. At RIIO-GD2 Ofgem used the OBR wage average earnings forecast to calculate the forecast of labour indices - however these are only available for the first two years of RIIO-GD3, and we therefore consider insufficient data is available.
2. Rows 26 to 106 present the RPE weightings based on the share of each cost category with respect to total direct Opex, Indirect Opex, Capex, Repex mains and Repex services, respectively and has been apportioned to our forecasted Totex figures based on historic weightings.
  3. Rows 9 to 14 present the calculated RPE indices for each cost category e.g. direct Opex, indirect Opex, based on a weighted average of the RPEs calculated in rows 15 to 19 and the RPE weightings for each cost category.
  4. Rows 108 to 156 present the disaggregated Opex, capex and Repex RPE costs based on the costs of each activity category and the relevant RPE indices presented in rows 9 to 14. Total RPE adjustments forecast for RIIO-GD3 are £20.07m, which is comparable to RIIO-GD2 as of RRP 2023/24 (£17.50m 2023/24 prices).
- Rows 158 onwards present the Ongoing Efficiency challenge forecasts for all cost categories, based on the 0.5% midpoint suggested in the Economic Insight (EI) report (attached to the CJBA). The Gas Distribution Networks (GDNs) have jointly commissioned Economic Insight to estimate a suitable OE challenge for RIIO-GD3. Following a comprehensive review, we have considered that a 0.5% year on year OE target would be appropriate. Further details on the work undertaken can be found in Chapter 6 of our Business Plan and also in the Cost Assessment and Benchmarking Approach Annex. We have assumed that the OE challenge applies equally to all cost categories and applies from the first year of RIIO-GD3 so as to not double count the OE challenge applied in RIIO-GD2.

## Finance Data Tables

### F2.00 BPFM Inputs

#### Non-Variant and Variant allowances

RIIO-GD2 values are generated from the GD2 PCFM for use in AIP2024 updated for 2024 RRP inputs and submitted as part of the Dry run 1 of the AIP process, then uplifted to 23/24 prices.

There are currently several re-openers awaiting final decision with Ofgem, these are:

- HSE Re-opener
- Net zero Re-opener
- Specified Streetworks

We have included amounts consistent with our RRP submission within DR1, but this may be subject to change based on final decisions.

RIIO-GD3 values have been generated on a consistent basis with RIIO-GD2 values, based on the information we have at the time of the submission. We have assumed that those things which are classified as non-variant / variant remain so between RIIO-GD2 and RIIO-GD3, apart from where there have been decisions at Sector Specific Methodology Decision (SSMD) which warrant a change in classification. For example, the removal of the domestic connections and Tier 2a volume drivers means that costs associated with those have been included in non-variant allowances. Variant re-opener allowances which become Business as Usual (BAU) in RIIO-GD3 are included in the non-variant section figures.

Note: Non-Variant allowance formulas (rows 14 Non-Load Capex and 17 Repex) were amended to allow for Variant allowances formulated on rows 23, 24 and 25

#### Variant Attributes

The assumptions here are consistent with RIIO-GD2. The natural capitalisation rate for variant allowances proposed matches the rates in RIIO-GD2 for Tier 1 Mains and Services PCDs (100% Repex). The exact percentage for Baseline Network Risk Output will differ from RIIO-GD2 due to the relative change in NARM Capex and Repex costs.

We have included one other RIIO-GD3 variant allowance in row 62. This was to capture the impact of the NI Increase Additional Cost (following the planned NI increases for employers announced by the UK Government). The expected cost is between £2.7 and £2.9m per annum throughout RIIO-GD3.

### Pass-Through Costs

RIIO-GD2 values have been uplifted into 23/24 prices from the GD2 PCFM for use in the AIP2024 file from Ofgem, updated for 2024 RRP inputs and submitted as part of the Dry run 1 of the AIP process, with the following noted Exceptions:

- Row 215 (Shrinkage) – long-range Heren price forecast as of 28 June 2024, there have been no material changes since this point.
- Row 218 (Pension allowances following Ofgem 2023 Reasonableness Review) - 2023 Reasonableness review up to 2026/27 then £5m for the insurance indemnity of the illiquid assets and GAD costs in 2027/28, then assumed zero 2028/29 onwards as the pension scheme will have been fully de-risked.
- Row 222 (NTS Exit) - Per long-range latest NTS published forecasts.
- Row 223 (CDSP Costs) - As RIIO-GD2 costs per long-term inflation plus an estimated additional £3m per annum due to Nexus upgrade.

The following costs are assumed to be zero for RIIO-GD3 and will be reclaimed via the AIP process when incurred net of recovery from responsible third parties:

- Row 220 (3<sup>rd</sup> Party Damage & Water Ingress Cost)
- Row 221 (Gas Illegally taken)
- Row 224 (Miscellaneous pass-through)

### Directly remunerated services

RIIO-GD2 is generated from the most recent Ofgem published RIIO-GD2 PCFM updated for 2024 RRP inputs then uplifted to 23/24 prices. RIIO-GD3 has been assumed using the RIIO-GD2 run rate. There is currently an outstanding discussion between GDNs and Ofgem regarding the correct treatment of DRS within the Price Control Financial Model (PCFM) and as such we have not made any adjustments whilst those discussions are ongoing.

### TIM and capitalisation

"Natural" capitalisation rate was assumed for Capitalisation rate 1, Capitalisation rate 2 and rate for Repex have been assumed to continue at RIIO-GD2 rates as taken from the most recent PCFM.

### Disposals

Disposals in RIIO-GD3 are assumed to be nil as not material.

### Totex variant allowances allocation percentages

RIO-GD2 has been taken from the RIO-GD2 PCFM for use in AIP2024 updated for 2024 RRP inputs and submitted as part of the Dry run 1 of the AIP process.

Please note - the allocation percentage on the HSE re-opener is incorrect in the current published PCFM. It is currently incorrectly assuming 100% Repex which has been raised with Ofgem and will require a statutory consultation to correctly calculate RIO-GD2 revenue.

RIO-GD3 allocation percentages for Totex variant allowances are consistent with RIO-GD2. For the Baseline Network Risk Output split between Capex and Repex, the percentages have been adjusted based on the relative proportion of Network Asset Risk Metric (NARM) Repex to NARM Capex costs, with a greater proportion allocated to Repex than in RIO-GD2 due to cost increases being greater for Repex relatively. This assumes a broadly similar scope of NARM between RIO-GD2 and RIO-GD3, which could change depending on Ofgem's decisions.

### Tax Pools allocation

Formula-driven, sourced from F2.01 Tab.

### Business Plan Financial Model Inputs

Statutory Depreciation is based on statutory accounts for actuals and a forecast has been derived using conservative assumptions for RAV additions under the status quo accounting depreciation policy (this is without prejudice to our position as to the possible changes to the regulatory depreciation policy in RIO-GD3 and potential corresponding changes to its accounting treatment).

BPDT Capex Input is based on the latest forecasts covering all capital work (Capex & Repex), plus statutory accounts actuals.

Additional borrowing cost only includes an assumption on the new issue premium (including small company premium) over and above the benchmark cost of new debt. This does not include any transaction, liquidity, or similar costs.

Forecast actual gearing has been derived using a set of conservative assumptions aligned to Ofgem's "Base case" as much as possible for the purpose of this submission (without prejudice to our position on the WACC, depreciation profile or any other elements of the financial package which impact this input).

### Calculations for mirror table

Pension Scheme Established Deficit repair: 2023 Reasonableness review up to 2026/27 then £5m for the insurance indemnity of the illiquid assets and GAD costs in 2027/28, then assumed zero 2028/29 onwards as the pension scheme will have been fully de-risked.

### BPFM Disposals Inputs

Actuals for RIO-GD2 converted to 23/24 prices then assumed nil for RIO-GD3 as not material.

### F2.01 BP Tax Inputs

The key difference between RIO-GD2 and RIO-GD3 is that full expensing of capital allowances is the driving force behind total allowances, causing a significant increase. In populating the tables, we have included Intangible Asset expenditure within the General Pool as this is the closest approximation. However, it does not reflect the actual period over which writing down allowances would be expected to be received. Future Capex additions have been assumed to be split 40% MP and 60% SRP based on historic expenditure.

### F2.02 Liquidity Licensee

We have populated this table with daily cleared bank balances and syndicated facility drawings (Revolving Credit Facility and Working Capital Facility combined) as required. Note that the proceeds of new fixed-rate debt issued in June 2023 are behind the elevated cash levels in the last nine months of 23/4.

NGN aims to have sufficient liquidity (in the form of cash and the undrawn amount of committed bank facilities) to cover at least 12 months' forecast obligations. As well as being a prudent approach it also enables NGN to satisfy credit rating agency expectations as to liquidity and auditor going concern considerations, as well as enabling certification to be given to Ofgem on availability of resources.

As regards longer-term liquidity / refinancing risk, NGN policy is to seek to ensure that at any point in time no more than 50% of total debt matures in the succeeding five years.

There is no cash pooling in operation at NGN but credit balances on all accounts (other than segregated funds specific to NIC or SIF projects) are swept into an interest-bearing account overnight.

### F2.03 Liquidity Group

N/A for NGN

### F2.04 Liquidity Group Structure

N/A for NGN

### F2.05 BP Disposals 1

No Comment

### F2.06 BP Disposals 2

No Comment

## Debt Data Tables

### F3.00 Debt for BPFM

As stated in our BPFM commentary, and covered there in more detail, we are keen to stress that a number of key inputs in BPFM, including, but not limited to, forecasts of new debt, new debt issuance and interest costs, dividends and actual company gearing, should be regarded as provisional based on current high-level assumptions and are almost certain to change between now and the Draft Determinations, and again after Final Determinations.

Variable factors likely to have an impact on our initial assumptions include Totex allowances, incentives, accelerated depreciation and asset lives, allowed Cost of Equity and Cost of Debt, Financeability considerations, the expected path of inflation, financial market conditions and our approach to managing interest rate exposure and the use of index-linked debt and/or derivatives.

### F3.01 Financial Summary (TWA)

In April NGN raised an issue with Ofgem regarding the RFPR reporting process only allowing for CPIH price index adjustments, requiring an additional adjustment to ensure the correct swap accretion charges and balances could be reported (in NGN's case being linked to CPI rather than CPIH). Ofgem initially opted not to include a CPI index in the BPDT template.

Although the table now calculates I-L swap accretion and real interest payments on a CPI basis there remain differences between the model-generated charges and the actual charges in NGN's accounts (due to the 2 and 3 month indexation lags being calculated as 1 and 2 month lags respectively). These have been reflected in rows 218 and 219 as there is nowhere to record derivative-specific adjustments.

In addition, the mismatch between the average SONIA used for each year and the actual SONIA applicable to floating rates legs on interest rate swaps means that further adjustments are required to derivatives to give the true impact. We also raised this through the RIO-GD2 RFPR process on Gitlab (Issue #58).

### F3.02 Financial Summary (YE)

Whilst this tab is largely formula-driven via links to other tabs we have updated the yellow-highlighted section from rows 193-200 to capture cash balances (to derive net debt balances) and accumulated accretion on index-linked swaps to give a "true" debt balance in the context of gearing.

We have added accumulated accretion into the Conversion to Regulatory (RIO-GD1) Definition of Net Debt section because the Adjustments to Derivatives section (Rows 69:74 on Tab F3.02) was greyed out. We note there is no corresponding section on Tab F3.01.

### F3.03 Fixed Rate Debt

No issues to highlight or extra information to provide.

### F3.04 Floating Rate Debt

No issues to highlight or extra information to provide.

### F3.05 Inflation Linked Debt

No issues to highlight or extra information to provide.

### F3.06 Debt Dataset

NGN has some complex interest rate swaps, where notional amounts change on a quarterly or semi-annual basis. As the amortisations occur more frequently than annually it has not been possible to enter these using the amortisation "facility" in the tab. Instead, we have split them down into a series of individual short-dated swaps. At the same time, where similar swaps were transacted with more than one bank, to minimise the number of rows required we have aggregated to principal amounts and used a weighted average interest rate.

No other issues to highlight or extra information to provide.

## Opex Data Tables

### C4.00 Opex Cost Matrix

The main cost reduction driver within Work Management is the holder demolition programme that is due to be completed during RIO-GD2 meaning there will be no forecasted work in RIO-GD3. Similarly, the land remediation forecast in RIO-GD3 is mainly monitoring and maintenance costs as most of the remediation works will be complete in RIO-GD2.

The strategy in Asset Management remains the same as we focus on balancing decisions on maintaining or replacing assets in the network. We expect additional costs associated with the implementation of the advanced leakage detection onto the network that will improve prioritisation of our replacement programme and prepare for the rollout of the Digital Platform for Leakage Analytics later in RIO-GD3.

The main driver of the £6m reduction in Operations Management is associated with the Incremental Pensions Deficit. This was related to the deferred pensioner buy-in, as discussed with Ofgem in October 2022 and June 2023, the final payment is due in 2025 with the RIO-GD3 plan to reduce accordingly. We expect other Operations Management expenditure to be marginally higher to support the increased maintenance workload and to implement the increased industrial workforce to meet the Health and Safety Executive 12 and 16 hour working standards requirements.

Although we have continued to see fewer calls to the emergency number following the Covid-19 pandemic, we expect to spend in line with our plan for the remainder of RIIO-GD2 in Customer Management, assuming a more 'normal' workload, over winter. The customer strategy capitalisation policy is reducing from 29% to 14% due to our moving away from Fuel Poor and this is coupled with the inflationary pressure affecting the call handling contract and expected increased costs in RIIO-GD3. We have also incorporated Services Beyond the Meter to expand on our commitment to our customers and added current VCMA costs into our operational spend as business as usual in RIIO-GD3.

We expect costs in System Control to increase marginally to over the remainder of RIIO-GD2 and RIIO-GD3 to address business continuity and succession planning in this area. We now flex the resource in this area to support other asset management activities to increase efficiency and maximise output and this benefit will run into RIIO-GD3.

Repair costs have increased as we have realigned resource from other areas where customer driven workload has fallen – connections, fuel poor and service alteration work. We have used this resource to carry out more repairs and reduce the number of outstanding escapes. Our RIIO-GD3 plan has increased to include the extra resource we will need to meet the Health and Safety Executive 12 and 16 hour working standards requirements.

We expect repairs to trend down over time because of the Repex programme, but not necessarily every year as other factors such as weather and asset performance will influence the overall workload. The forecasts are also based on a more prudent 'normal' winter workload as mentioned above, including a 1% year on year reduction in cost to reflect a positive impact of the Repex programme on workload.

Any impact relating to the NRSWA re-opener, additional costs for lane rental, weekend and bank holidays as well as costs to separate contaminated/ non-contaminated spoil have not been factored into the RIIO-GD3 plan.

Costs in Other Direct Activities can vary year on year, largely driven by the number of district incidents we encounter, and our success when recovering costs from 3rd parties where they were responsible for causing the incident. We have not included any estimate for district incidents in RIIO-GD3. Tools & consumables associated with additional headcount across Emergency, Repair and Maintenance industrials to meet the Health and Safety Executive 12 and 16 hour working standards requirements have been included in RIIO-GD3 as well as additional asset decommissioning works focussing on overcrossing and building removals across the network.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The remaining historical data has been retrieved from RRP table submissions in 2020/21, 2021/22, 2022/23 and 2023/24. In 2014/15, the "Bought in Services" costs relating to training and been added onto "Non-Salary Staff Costs". "PFF Levy Costs" and "Pension Scheme Administration Costs" in 2020/21 RRP were

classified as non-controllable costs and are not included in this data table.

#### C4.01 Emergency

Emergency costs increased in RIIO-GD2 as we recruited 23 engineers to improve resilience and to begin to meet the Health and Safety Executive 12 and 16 hour working standards requirements. This increases by a further 32 engineers in our RIIO-GD3 plan. We continue to benefit from careful management of overtime and increased focus on productivity because of more resource being on our new modern terms and conditions. Our forecast for Emergency and Repair is based on a more prudent 'normal' winter workload than we have seen in recent years. We would expect to outturn lower than this when weather is milder, but we cannot always assume this will be the case. This assumption has been continued in our RIIO-GD3 plan and includes a 1% year on year reduction in cost to reflect a positive impact of the Repex programme on workload.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs and 2021 reflects the RRP table for 2020/21. The remaining historical data has been retrieved via SMEs using internal data sources and RIIO-GD2 RRP files.

#### C4.02 Maintenance

Maintenance costs have significantly increased as we align our strategy to address maintenance in several areas. This includes more work on District Governors to extend their operational life and reduce Capex, carry out in-line inspections using new technology on our 4" high pressure pipelines, install more Pressure Control systems which require increased maintenance and increased valve surveys, cathodic protection and DR4 workload. Accelerating this workload post the Covid-19 pandemic has proved more difficult than expected with long lead times for some equipment and scarcity of resources.

We have included the impact of changing HSE legislation associated with GSRs with an expectation of addressing the backlog during RIIO-GD3 and factored in the impact of Advanced Leakage Detection and Fatigue. No costs have been included for RIIO-GD3 blending.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The remaining historical data has been retrieved from RRP table submissions in 2020/21, 2021/22, 2022/23 and 2023/24.

#### CV4.03 SIU

There is no data to report in this cost area for NGN.

#### C4.04 Business Support Group

The forecasts for the remainder of RIIO-GD2 and RIIO-GD3 are discussed in the below sections of the commentary.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The remaining historical data has been retrieved from RRP table submissions in 2020/21, 2021/22, 2022/23 and 2023/24.

#### CV4.05 BS Allocations

Our Human Resources costs have increased for recruitment as staff turnover has continued to be above expected levels. We expect costs to increase slightly for the remainder of RIIO-GD2 and RIIO-GD3 as we continue investment into wellbeing, hybrid working and talent development strategies, as well as expanding on our existing diversity and inclusion plans. We have also employed an Employee Relations Manager to support our collective bargaining and employee strategy discussions with trade unions.

We have experienced increased costs in Audit, Finance and Regulation, mainly from the costs associated with the RIIO-GD2 CMA appeal and increased audit fees. We expect costs to increase year on year as we begin to prepare for the delivery of our RIIO-GD3 business plan, incur audit cost pressure due to increased external audit requirements associated with ESG disclosures and growing legislation and reduced capitalisation policies due to reduced fuel poor and connections workload, the impact of which has been reduced by our withdrawal from the ENA subscription. We have included an estimated £1.1m pa for Encoda costs associated with Joint Office.

Insurance premiums have significantly increased recently, particularly for property, cyber security, and group life assurance, and this has been reflected in RIIO-GD3 figures. Employee liability claims have historically varied materially from year to year and are very difficult to predict. Our forecast remains at the long-term average.

Procurement costs have increased to include 3x roles to assist with our commitment to sustainable procurement, but we have been able to increase our capitalisation policy in this area as the team have been focused on efficient delivery of Capex and Repex programmes. We expect this to continue for the remainder of RIIO-GD2 and throughout RIIO-GD3.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The remaining historical data has been retrieved from RRP table submissions in 2020/21, 2021/22, 2022/23 and 2023/24. The remaining historical data gaps have been retrieved via SMEs using internal data sources.

#### C4.06 IT & Telecoms Group

In RIIO-GD3 IT and Telecoms costs reflect increased resource in our Cyber Security team. We expect to continue increasing resource in several areas to support our overall IT strategy in the next year and expect costs to increase further into RIIO-GD3 as we factor in costs associated with Cyber, a VCMA visualisation tool and an advanced leakage detection service provider.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The outstanding data from 2021/22 will be supplied for final submission in December.

#### C4.07 Property Management Group

Our Property Management costs in RIIO-GD3 include welfare cabins at Cannon Park, Clay Flatts and Hull. We have been prudent in our RIIO-GD3 plan to reflect the continued pressure on utility costs and legal fees associated with build over works.

During RIIO-GD2 we purchased our Head Office premises at Thorpe Park, resulting in a reduction to rents payable. The average annual benefit of £0.75m is reflected in the remainder of RIIO-GD2 and the whole of RIIO-GD3.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The outstanding data from 2021/22 will be supplied for final submission in December.

#### CV4.08 Training & Apprentices

Training and apprentice costs are increasing for the remainder of RIIO-GD2 and into RIIO-GD3, this reflects the support required on our apprentice programme to add resilience to our Maintenance delivery teams, to ensure business continuity within Emergency and Repair and to support our diversity commitments with our business administration apprenticeships. It also includes roles and training associated with fatigue, energy futures training team, vulnerability, and green academy.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The outstanding data in the "Volumes" and "Trainee & Apprentice: Programmes" sections, from 2024 onwards has been derived using the business forecast that is aiming to address both the National Skills shortage in the sector and to address our colleagues approaching retirement age in both RIIO-GD2 & RIIO-GD3. The positions created includes the additional FTE associated with Asset Leakage Detection, VCMA, Inclusion & Belonging, System Control business continuity and Fatigue.

#### C4.09 CEO & Corporate

Our CEO and Group costs have increased to reflect the stakeholder costs associated with VCMA that will become part of our business-as-usual costs from RIIO-GD3.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The historical data gaps were supplied by SMEs using internal data sources.

#### CV4.10 LP Gasholders

The financial forecast for RIIO-GD2 that contributed to the Asset Management cost area on the Opex Cost Matrix has been transferred to the LP Gasholder sheet.

All RIIO-GD1 data up to 2020 reflects the data submitted in the RIIO-GD2 BPDTs. The data in Cells AF40 to AF44 for Intervention Type in 2020/21 was supplied directly by the SME (Chris Wood). The remaining historical data has been retrieved from RRP table submissions in 2020/21, 2021/22, 2022/23 and 2023/24

### CV4.11 Land Remediation

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. The RIIO-GD2 and RIIO-GD3 forward workload volumes and costs are based on a continuation of ongoing proactive management of historical land contamination as per RIIO-GD1 and RIIO-GD2 that ensures that our former gasworks/gas holder sites are managed and maintained in a compliant condition. Specifically, the remaining RIIO-GD2 forecast is primarily for continued monitoring to ensure compliance, with targeted remediation projects to address identified potentially significant environmental risks. The RIIO-GD3 forecast is based on ongoing proactive management of contaminated land sites, targeted investigation, and monitoring works at recently demolished gasholder sites to establish and verify environmental improvements, and targeted remediation works identified as being required in surveys completed during RIIO-GD2. All RIIO-GD2/RIIO-GD3 forecast costs are based on actuals from RIIO-GD2 and estimates from our Contaminated Land Framework Consultants.

### CV4.12 Shrinkage

For the demand forecast, we have used the current 2024 annual demand forecast. The forecast predicts that demand will recover somewhat over the next 10 years due to the price of gas stabilising, the lack of uptake on current government initiatives such as the boiler replacement programme and lack of customer engagement with heat pumps. We have also seen year on year increases in connections to our network. The increase is mostly associated with the industrial and commercial sector, with some recovery in the domestic as well.

Shrinkage overall is steadily decreasing over the period to 2032/33 with the continued mains replacement programme.

Average System Pressure (ASP) is expected to increase over the period, due to more mains insertion as part of the mains replacement programme. A nominal 0.2mb per annum has been added to ASP to account for this increase.

For RIIO-GD1 the Pressure and MEG impact has been calculated using the RIIO-GD1 year 8 Pressure and MEG figures in the previous year's models to calculate the mains and service leakage at benchmark Pressure and MEG.

For RIIO-GD2 the Pressure and MEG baseline figures have been inputted into each RIIO-GD2 model to calculate the mains and service leakage at benchmark Pressure and MEG.

For RIIO-GD3 the Pressure and MEG impact has been calculated using the RIIO-GD3 year 5 Pressure and MEG figures in the previous year's models to calculate the mains and service leakage at benchmark Pressure and MEG.

The Shrinkage cost from 2024/25 onwards has been set to the last reported years costs. This is due to the volatility of the forward gas price forecasts, which change daily depending on the availability of gas, LNG imports and renewable energies supporting the network.

Line 91 Cost of Gas has an assumed calculation to calculate the p/kwh by dividing the overall shrinkage cost in pence divided by the total shrinkage in kWh.

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. The data gaps in rows 37 to 46 were rectified using internal data sources, led by SMEs.

### CV4.13 Gas Theft

There is no forecast data due to the nature of how gas theft is recorded, as the financial data is unknown until the investigation is completed.

All historical data reflects the data submitted for RRP annually up to 2023/24. There is no data prior to 2015/16 as there was no requirement for NGN to record this.

The number of cases where cost recovery was attempted, the total cost of cost recovery, and money recovered for gas theft are incomplete for the RIIO-GD1 period as this was not distinguished a requirement until RIIO-GD2.

We would welcome discussions with Ofgem and other networks to confirm if RIIO-GD2 and RIIO-GD3 forecast data is required and adds sufficient value for price control setting purposes.

### CV4.14 Street Works

The forecasts for streetworks data were derived using the average cost and volume within the RIIO-GD2 period. As the cost and volumes have now plateaued due to the full adoption of TMA permit requirements across all 24 local authorities, and the acceptance that the hazardous waste removal will not come into effect until RIIO-GD3, the cost adjustment for lane rental scheme costs will be part of the RIIO-GD3 re-opener.

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. There is data missing in 2013/14 and 2014/15 for sections relating to chargeable and non-chargeable permits as this was not captured during these years. Assumptions were made for the 'Other Streetworks Costs – Surveys' section, linking 'Non-Compliant' with 'Defects,' 'Sampling Inspections' with 'Random Sampling,' and 'Compliance Sampling' with 'Coring Survey' in the RRP's in RIIO-GD1.

### CV4.15 Smart Metering

NGN have not provided data for this table for submission as we undertake minimal smart metering activities. We would welcome discussions with Ofgem and other networks to confirm if this data is required and adds sufficient value for price control setting purposes.

## Capex Data Tables

### CV5.01 LTS Storage & Entry

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation. The remaining 2 years forecast for RIIO-GD2 has been taken from our commercial team forecast and reflects values in RRP 2023/24.

The RIIO-GD3 business plan has been developed in conjunction with several SMEs across the organisation. The methodology followed in RIIO-GD2 has been repeated in RIIO-GD3, NARM modelling through C55 has identified the primary asset interventions and these have been reviewed and amended accordingly following SME input. Additional interventions due to HSE intervention and/or regulatory compliance have been identified and included in our final proposal. RIIO-GD2 unit cost allowances have been reviewed against actual project expenditure, where there is little deviation the unit cost allowances have been inflated to 23/24 prices. Where there is a significant deviation, projects have been reviewed further, and alternative unit

cost allowances have been estimated for RIIO-GD3. Final proposals have been presented, challenged, and reviewed internally to ensure our final business plan meets the needs of our licence obligations whilst maintaining safe network operation and ensuring customer value for money from our investments.

The final proposal assumes minimal load related activities for Offtake and PRS assets during RIIO-GD3, NGN plans to upgrade the capacity at one PRS and two Offtake sites to resolve current capacity constraints and ensure security of gas transportation in these areas.

The final submission does not currently include cost proposals for a potentially expensive HP to IP downrating in Leeds, following planning permission being granted for the South Village, Leeds (City One). Industry requirements do not permit HP gas transmission in densely populated areas, following the development completion NGN will contravene this requirement if we do nothing. RIIO-GD3 proposals do include a FEED study being commissioned in Year 1 (£1.2m) to determine what a larger project would entail. NGN will then reassess the situation and seek to agree funding through a reopener with Ofgem during RIIO-GD3.

2023/24 Prices	RIIO-GD2 Average	LTS, Storage & Entry					RIIO-GD3 Total	RIIO-GD3 Average	Variance %
		RIIO-GD3 Spend per Year (£m)							
		2026/27	2027/28	2028/29	2029/30	2030/31			
New / Reinforcement	£0.01	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	-100.00%
PRS	£0.39	£0.00	£0.00	£1.46	£0.00	£0.00	£1.46	£0.29	-25.80%
NTS Offtake	£0.50	£1.46	£0.00	£0.00	£0.00	£1.86	£3.31	£0.66	32.65%
<b>Total Load - LTS, Storage and Entry</b>	<b>£0.90</b>	<b>£1.46</b>	<b>£0.00</b>	<b>£1.46</b>	<b>£0.00</b>	<b>£1.86</b>	<b>£4.77</b>	<b>£0.95</b>	<b>6.07%</b>
Diversions	£5.08	£8.52	£0.00	£0.82	£0.00	£0.85	£10.20	£2.04	-59.86%
Other Pipelines	£0.52	£1.22	£1.33	£0.99	£1.10	£0.99	£5.63	£1.13	116.70%
PRS	£7.03	£17.39	£14.85	£16.77	£19.32	£14.66	£83.00	£16.60	136.16%
NTS Offtake	£4.46	£11.92	£5.78	£8.00	£5.48	£6.38	£37.55	£7.51	68.23%
<b>Total Non-Load - LTS, Storage and Entry</b>	<b>£17.10</b>	<b>£39.05</b>	<b>£21.96</b>	<b>£26.59</b>	<b>£25.91</b>	<b>£22.88</b>	<b>£136.39</b>	<b>£27.28</b>	<b>59.56%</b>
<b>Total - LTS, Storage and Entry</b>	<b>£17.99</b>	<b>£40.51</b>	<b>£21.96</b>	<b>£28.04</b>	<b>£25.91</b>	<b>£24.73</b>	<b>£141.15</b>	<b>£28.23</b>	<b>56.88%</b>

#### Trend review RIIO-GD2 to RIIO-GD3:

i) **Load/Non-Load Related activities** – Significant shift from Load to Non-Load activities since the commencement of RIIO-GD1, this reflects the journey of gas distribution over the past 11 years and going forward

ii) **Diversions** – The TransPennine Upgrade PCD will be delivered in RIIO-GD2 this reflects a significant cost in that price control period and will not be repeated in RIIO-GD3. NGN have included costs for a major river diversion on the Catton to Cummersdale High Pressure Pipeline, where it crosses the River Allen. Significant riverbed erosion is the key driver for this project and the worst case is currently reflected. A FEED study is required to assist in the development of final plans so that work can commence in Year 1

iii) **Offtakes** – 10 offtake sites received major upgrades in RIIO-GD1 averaging around £4.5m per site. Significantly less was spent in RIIO-GD2 with 2 offtake site major upgrades, 7 offtake sites having metering upgrades and 3 LGT (Odorant) systems will have been replaced with a further 20 LGT systems having upgraded functionality. Investment in RIIO-GD3 is driven by the replacement of 16 LGT systems (upgraded equipment in RIIO-GD2 will be fully utilised) the cost of this is £5.6m and 8 Preheating Replacements with a cost of £13.8m. A significant investment in Pannal offtake is also required and is currently being costed as part of our proposals

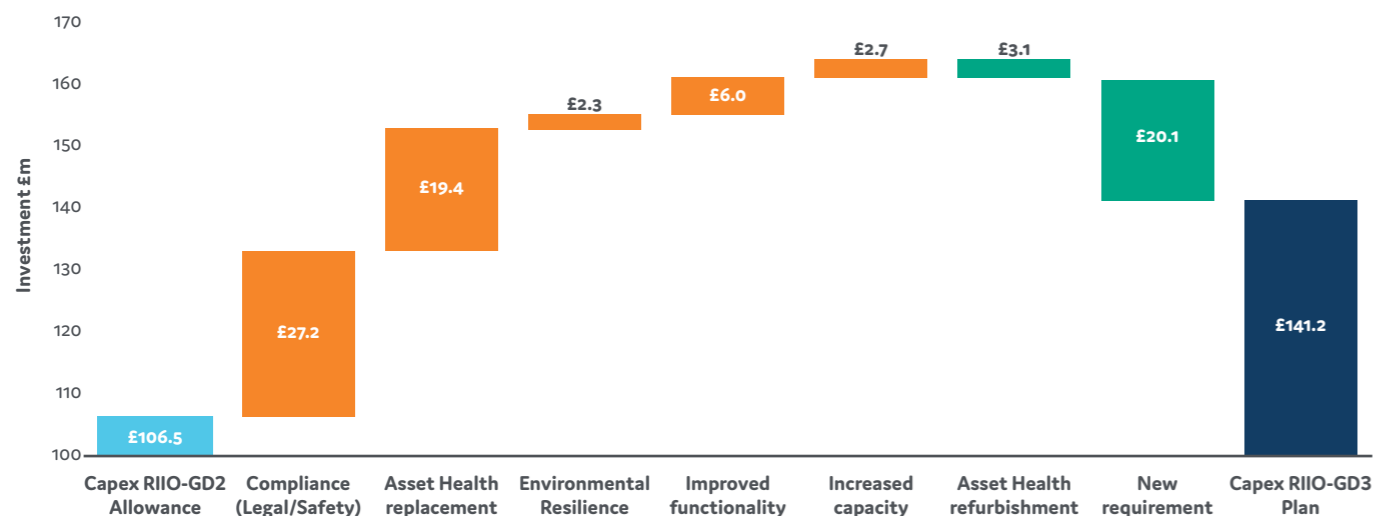
iv) **PRS** – Investment dropped in RIIO-GD2 following the decision to concentrate on refurbishment and major overhauls during this price control period. RIIO-GD3 investment sees a significant increase, key drivers for this are a Preheating replacement programme of £24.7m to meet legislative requirements for NOx emissions and the E&I upgrade programme of £11.5m. The E&I upgrade programme at 41 PRS sites follows obsolescence concerns

and spares becoming scarcer. A large investment in civils and building upgrades to proactively manage safe working conditions on PRS sites following extreme weather issues leading to accelerated deterioration of assets, makes up the remainder of the delta to RIIO-GD2

Further analysis of the RIIO-GD3 plan for LTS, Storage and Entry compared to the RIIO-GD2 allowances shows the key drivers for the proposed investments:

2023/24 Prices	RIIO-GD2 Average	LTS, Storage & Entry					RIIO-GD3 Total	RIIO-GD3 Average	Variance %
		RIIO-GD3 Spend per Year (£m)							
		2026/27	2027/28	2028/29	2029/30	2030/31			
Asset Health replacement	£5.03	£10.14	£6.43	£8.87	£9.57	£9.59	£44.60	£8.92	77.28%
Asset Health refurbishment	£3.12	£2.77	£2.64	£2.54	£2.39	£2.21	£12.55	£2.51	-19.59%
Compliance (Legal/Safety)	£1.38	£7.80	£7.55	£7.85	£7.55	£3.41	£34.17	£6.83	393.78%
Improved functionality	£4.02	£6.01	£4.49	£4.17	£5.54	£5.97	£26.17	£5.23	30.06%
Increased capacity	£0.41	£1.46	£0.00	£1.46	£0.00	£1.86	£4.77	£0.95	130.45%
New requirement	£5.40	£3.79	£0.00	£2.31	£0.00	£0.85	£6.94	£1.39	-74.29%
Environmental Resilience	£1.93	£8.55	£0.85	£0.85	£0.85	£0.85	£11.95	£2.39	23.77%
<b>Total - LTS, Storage and Entry</b>	<b>£21.31</b>	<b>£40.51</b>	<b>£21.96</b>	<b>£28.04</b>	<b>£25.91</b>	<b>£24.73</b>	<b>£141.15</b>	<b>£28.23</b>	<b>32.49%</b>

**LTS, Storage & Entry RIIO-GD2 Allowance to RIIO-GD3 Progression (Key Driver)**



- Through RIIO-GD1 and RIIO-GD2 NGN has adopted a regime of refurbishing above ground assets (PRS and Offtake), in RIIO-GD3 several assets have now reached a condition where refurbishment is either not the most economical investment or compliance to new legislation / safety is the key driver. In RIIO-GD3 we will spend an additional £34.7m on LTS, Storage and Entry, £27.2m of this, replacing assets to comply with new legislation or safety requirements and £19.4m of this on replacement of assets which have reached end of their economic life
- Legislative compliance - £17.8m associated with the replacement of 12 preheating systems and associated E&I

- Safety Compliance - £10.4m replacing additional 25 buildings and improving site civils following extreme weather events
- Asset health replacement - £6.1m lineguard cabinets, £4m LGT Odorant, £4m volumetric regulators, £2.5m cathodic protection and £2m electrical preheating

\*Note\* NGN have not been able to populate RIIO-GD1 NARM information due to the transition from NOMs to NARM modelling in RIIO-GD2 which has a different scope

**CV5.02 Reinforcement (<7 Barg)**

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation. The remaining 2 years forecast for RIIO-GD2 has been taken from our commercial team forecast and reflects values in RRP 2023/24.

RIIO-GD3 business plan has been developed in conjunction with SMEs in the reinforcement team. RIIO-GD2 unit cost allowances have been inflated for RIIO-GD3 and sense checked for major deviation. Final proposals have been presented, challenged, and reviewed internally to ensure our final business plan meets the needs of our licence obligations whilst maintaining safe network operation and ensuring customer value for money from our investments.

2023/24 Prices	RIIO-GD2 Average	Reinforcement					RIIO-GD3 Total	RIIO-GD3 Average	Variance %
		RIIO-GD3 Spend per Year (£m)							
		2026/27	2027/28	2028/29	2029/30	2030/31			
General up to 180mm	£0.71	£1.42	£1.42	£1.42	£1.42	£1.42	£7.09	£1.42	99.11%
General above 180mm	£1.35	£1.23	£1.23	£1.23	£1.23	£1.23	£6.15	£1.23	-8.74%
General DG	£0.57	£0.72	£0.62	£0.62	£0.62	£0.62	£3.20	£0.64	13.26%
<b>Total - General Reinforcement</b>	<b>£2.62</b>	<b>£3.37</b>	<b>£3.27</b>	<b>£3.27</b>	<b>£3.27</b>	<b>£3.27</b>	<b>£16.44</b>	<b>£3.29</b>	<b>25.24%</b>
<b>Total - General Reinforcement (km)</b>	<b>4.83</b>	<b>5.46</b>	<b>5.46</b>	<b>5.46</b>	<b>5.46</b>	<b>5.46</b>	<b>27.32</b>	<b>5.46</b>	<b>13.07%</b>
<b>Total - General Reinforcement (DG)</b>	<b>9</b>	<b>12</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>11</b>	<b>56</b>	<b>11</b>	<b>24.84%</b>
Specific up to 180mm	£1.41	£1.35	£1.35	£1.35	£1.35	£1.35	£6.76	£1.35	-4.42%
Specific above 180mm	£1.48	£0.68	£0.68	£0.68	£0.68	£0.68	£3.39	£0.68	-54.30%
Specific DG	£0.02	£0.08	£0.08	£0.08	£0.08	£0.08	£0.40	£0.08	273.35%
<b>Total - Specific Reinforcement</b>	<b>£2.92</b>	<b>£2.11</b>	<b>£2.11</b>	<b>£2.11</b>	<b>£2.11</b>	<b>£2.11</b>	<b>£10.54</b>	<b>£2.11</b>	<b>-27.73%</b>
<b>Total - Specific Reinforcement (km)</b>	<b>7.27</b>	<b>5.64</b>	<b>5.64</b>	<b>5.64</b>	<b>5.64</b>	<b>5.64</b>	<b>28.21</b>	<b>5.64</b>	<b>-22.41%</b>
<b>Total - Specific Reinforcement (DG)</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>483.33%</b>
<b>Total - Reinforcement</b>	<b>£5.54</b>	<b>£5.48</b>	<b>£5.38</b>	<b>£5.38</b>	<b>£5.38</b>	<b>£5.38</b>	<b>£26.98</b>	<b>£5.40</b>	<b>-2.64%</b>
<b>Total - Reinforcement (km)</b>	<b>12.10</b>	<b>11.11</b>	<b>11.11</b>	<b>11.11</b>	<b>11.11</b>	<b>11.11</b>	<b>55.53</b>	<b>11.11</b>	<b>-8.24%</b>
<b>Total - Reinforcement (DG)</b>	<b>9</b>	<b>13</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>61</b>	<b>12</b>	<b>33.44%</b>

**Trend review:**

i) General Reinforcement - slight increase in mains workload and reinforcement DG leading the overall cost increase. As a Totex initiative, general reinforcement is being utilised to minimise costly open cut projects in the RIIO-GD3 Repex programme. 6.4km of opencut reinforcement will facilitate 26.3km of pipe insertion, this will also minimise disruption during these works

ii) Specific - reduction in mains workload leading the overall cost reduction. Specific reinforcement associated with new properties declining due to Government proposals to ban gas central heating systems in new build properties from 2025. Alternative solutions already worked into development infrastructure with government incentives, reducing the need to reinforce the current network

iii) Total reinforcement – broadly in line with RIIO-GD2

**CV5.03 Reinforcement > £0.5m**

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation. The current view is that there will no projects greater than £0.5m for the remainder of RIIO-GD2 running into RIIO-GD3 that can be identified separately at this moment in time

**CV5.04 Governors**

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation. The remaining 2 years forecast for RIIO-GD2 has been taken from our commercial team forecast and reflects values in RRP 2023/24.

The RIIO-GD3 business plan has been developed in conjunction with several SMEs across the organisation. The methodology followed in RIIO-GD2 has been repeated in RIIO-GD3, NARM modelling through C55 has identify the primary asset interventions, these have been reviewed and amended accordingly following SME input. Additional interventions due to HSE enforcement and/or compliance have been identified and included in our draft proposal. RIIO-GD2 unit cost allowances have been reviewed against actual project expenditure, where there is little deviation the unit cost allowances have been inflated to 23/24 prices. Where there is a significant deviation, projects have been reviewed further, and alternative unit cost allowances have been suggested for RIIO-GD3. Final proposals have been presented, challenged, and reviewed internally to ensure our final business plan meets the needs of our licence obligations whilst maintaining safe network operation and ensuring customer value for money from our investments.



2023/24 Prices	RIIO-GD2 Average	Governors					RIIO-GD3 Total	RIIO-GD3 Average	Variance %
		RIIO-GD3 Spend per Year (£m)							
		2026/27	2027/28	2028/29	2029/30	2030/31			
District Governor Housing	£3.63	£2.00	£2.00	£2.00	£2.00	£2.00	£10.00	£2.00	-44.87%
District Governor Refurbishment	£0.15	£0.29	£0.29	£0.29	£0.29	£0.29	£1.43	£0.29	91.12%
District Governor Replacement	£0.66	£1.80	£1.62	£1.80	£1.62	£1.80	£8.64	£1.73	160.38%
District Governor Decommissioned	£0.01	£0.03	£0.03	£0.03	£0.03	£0.03	£0.16	£0.03	175.00%
<b>Total - District Governors</b>	£4.45	£4.12	£3.94	£4.12	£3.94	£4.12	£20.23	£4.05	-9.14%
<b>Total - District Governor (Units)</b>	159	104	103	104	103	104	518	104	-34.84%
Service Governors Domestic	£0.23	£0.25	£0.25	£0.25	£0.25	£0.25	£1.24	£0.25	9.32%
Service Governors Non Domestic	£0.01	£0.03	£0.03	£0.03	£0.03	£0.03	£0.13	£0.03	143.05%
<b>Total - Service Governors</b>	£0.24	£0.27	£0.27	£0.27	£0.27	£0.27	£1.36	£0.27	15.13%
<b>Total - Service Governors (Units)</b>	74	85	85	85	85	85	425	85	15.49%
<b>Total - Governors</b>	£4.69	£4.39	£4.21	£4.39	£4.21	£4.39	£21.59	£4.32	-7.91%
<b>Total - Governors (Units)</b>	233	189	188	189	188	189	943	189	-18.92%

### Trend review:

District Governors – There has been an increased number of interventions in RIIO-GD2, and NGN expect this to continue in RIIO-GD3. Following HSE direction, NGN has had a considerable number of governor housing issues where at least roof replacement is required following building deterioration and/or storm damage. Component refurb/replacement and Full replacement levels follow RIIO-GD2 volumes.

Service Governors – In the early years of RIIO-GD2, NGN was behind with the service governor replacement programme due to remobilisation and catch-up in other areas of capex following Covid-19, NGN Plans to complete 420 domestic service governor replacements and 5 I&C service governors, repeating this in RIIO-GD3.

### CV5.05 Connections

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation. The remaining 2 years forecast for RIIO-GD2 has been taken from our commercial team forecast and reflects values in RRP 2023/24.

RIIO-GD3 business plan has been developed in conjunction with SMEs in the Connections team and the wider commercial finance team. Unit costs reflect direct costs over the past 2 years with overhead allocations added. Final proposals have been presented, challenged, and reviewed internally to ensure our final business plan meets the needs of our licence obligations whilst maintaining safe network operation and ensuring customer value for money from our investments.

2023/24 Prices	RIIO-GD2 Average	Connections					RIIO-GD3 Total	RIIO-GD3 Average	Variance %
		RIIO-GD3 Spend per Year (£m)							
		2026/27	2027/28	2028/29	2029/30	2030/31			
Mains	£1.41	£0.20	£0.20	£0.20	£0.20	£0.20	£0.99	£0.20	-86.05%
Services	£5.97	£0.79	£0.79	£0.79	£0.79	£0.79	£3.95	£0.79	-86.78%
<b>Total - Connections</b>	£7.39	£0.99	£0.99	£0.99	£0.99	£0.99	£4.93	£0.99	-86.65%
<b>Total - Connections (km)</b>	16.54	4.26	4.26	4.26	4.26	4.26	21.30	4.26	-74.26%
<b>Total - Connections (Services)</b>	3,174	1,595	1,595	1,595	1,595	1,595	7,975	1,595	-49.75%
Domestic	£6.00	£0.63	£0.63	£0.63	£0.63	£0.63	£3.17	£0.63	-89.43%
Non Domestic	£1.39	£0.35	£0.35	£0.35	£0.35	£0.35	£1.76	£0.35	-74.63%
<b>Total - Connections</b>	£7.39	£0.99	£0.99	£0.99	£0.99	£0.99	£4.93	£0.99	-86.65%

In the SSMD released on 18<sup>th</sup> September 2024, Ofgem removed FPNES (Fuel Poor Network Extension Scheme), DLCA (Domestic Load Connection Allowance) and DCVD (Domestic Connections Volume Driver). The DLCA and DCVD allowed GDN's to provide a low-cost gas connection to new customers. They helped to cover costs for mains laid in public land and some stranded fixed overhead costs if volumes reduced.

Most of the overhead associated with Connections has been passed onto the customer in our current assumptions, £17.4m (Domestic £11.5m / non-domestic £5.9m). The Remaining £4.9m has been treated as fixed in nature relating to Design, Quotation, Survey, and other core support activities incurred where acceptance of a quote is not accepted.

As a result, current assumption for Domestic Connections cost is £3.6k and non-domestic cost is £8.7k.

Volumes have been based on current assumptions prior to the significant increase in cost to the customer, there is a risk that volumes will drop further. Most of the cost is related and can be avoided however there is a potential risk that a further £0.75m per annum may either need passing on to the customer or being absorbed by NGN.

### C5.06 Other Capex

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation. The remaining 2 years forecast for RIIO-GD2 has been taken from our commercial team forecast and reflects values in RRP 2023/24.

RIIO-GD3 business plan has been developed in conjunction with several SMEs across the organisation. Unit cost for Network-Other has been calculated by using current project data and subsequently reviewed for RIIO-GD3. The unit cost for Electrical and Instrumentation has been driven by like for like costs of similar devices, the unit cost for other pipelines covers several interventions. Overcrossing unit cost has followed the RIIO-GD2 unit cost database cost in 23/24 prices, as there are no major deviations. Cathodic Protection on below 7 bar valves, unit cost confirmed with the project team.

Unit costs have been estimated following consultation with SMEs for Non-Network - Other Capex. Final proposals have been presented, challenged, and reviewed internally to ensure our final business plan meets the needs of our licence obligations whilst maintaining safe network operation and ensuring customer value for money from our investments.

2023/24 Prices	RIIO-GD2 Average	Other Capex					RIIO-GD3 Total	RIIO-GD3 Average	Variance %
		RIIO-GD3 Spend per Year (£m)							
		2026/27	2027/28	2028/29	2029/30	2030/31			
Security	£0.79	£0.94	£1.27	£1.04	£1.27	£0.94	£5.46	£1.09	37.44%
PSUP	£0.11	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	-100.00%
Pipelines (Inc overcrossings, sleeves, CP, valves)	£3.04	£3.59	£2.91	£3.28	£3.28	£2.98	£16.04	£3.21	5.38%
Electrical and mechanical instrumentation	£1.77	£1.96	£1.96	£1.96	£1.96	£1.96	£9.79	£1.96	10.92%
<b>Other Network</b>	£5.71	£6.48	£6.14	£6.28	£6.51	£5.88	£31.29	£6.26	9.54%
IT and Telecoms	£11.43	£11.02	£13.18	£13.12	£12.09	£13.54	£62.96	£12.59	10.18%
Plant, tools & equipment	£1.40	£1.23	£1.07	£1.64	£0.69	£0.69	£5.31	£1.06	-24.17%
Vehicles	£5.02	£4.77	£5.26	£3.86	£3.99	£8.97	£26.85	£5.37	6.94%
Property and workspace	£2.96	£1.94	£1.94	£1.94	£1.94	£1.94	£9.71	£1.94	-34.43%
Other - including compensation	£0.04	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00	-100.00%
<b>Other Non-Network</b>	£20.85	£18.97	£21.45	£20.55	£18.71	£25.14	£104.82	£20.96	0.54%
<b>Total - Other</b>	£26.56	£25.45	£27.58	£26.84	£25.22	£31.01	£136.11	£27.22	2.48%

**Other Network Capex** – Broadly in line with RIIO-GD2, slight increases in all areas except for PSUP, where there are no specifically planned interventions.

i) Security - NGN has identified several fence replacements and refurbishments to ensure our above ground installations remain secure. Our RIIO-GD3 cyber and physical security plans will add CCTV and other digital security measures where appropriate these are part of the IT & Telecoms strategy

ii) Pipelines - As part of our environmental resilience plans, we will continue to ensure overcrossing meet HSE standards, whilst coping with extreme weather events. NGN will be investing in the installation of IP/MP valve where distances between existing valves are considered too great. A FEED design is proposed for the extensive works potentially required following planning permission for the South Leeds village and other property developments in Leeds, and there will be a continuation of the project to replace cathodic protection on below 7 bar valves to prevent corrosion on the network

iii) Electrical & Instrumentation - NGN will utilise the LoRaWan network investments from RIIO-GD2 and future proof our pressure monitoring strategy across our networks as well as continuing the replacement programme for telemetry and data logging devices across the network

### Other Capex – Plant, Tools & Equipment

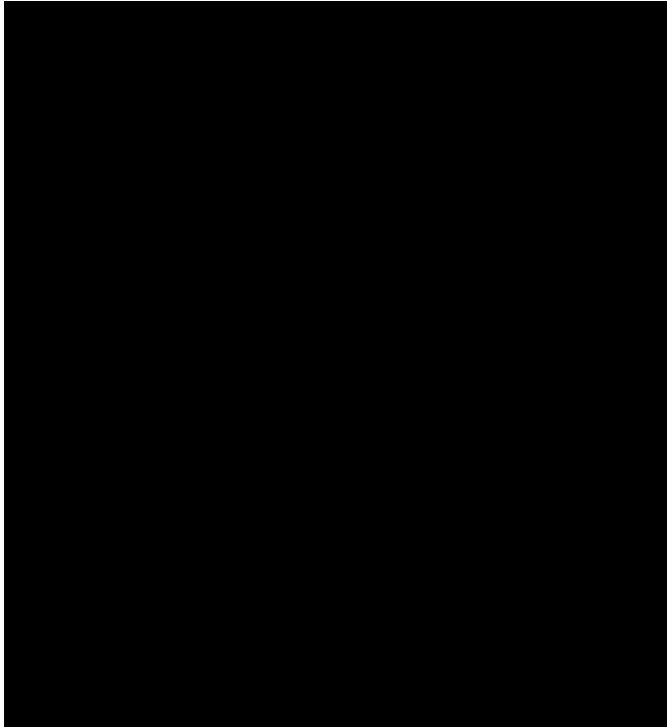
Plant, Tools and Equipment is slightly lower than RIIO-GD2 where NGN took the decision to replace large volumes of equipment that had reached the end of their useful life, we also had an increasing number of operational employees requiring tools and equipment in RIIO-GD2 that will not be repeated in RIIO-GD3. Below is a summary of the proposed expenditure.

RIIO-GD3 (£m)	
Wheeled Plant & Equipment	2.3
Safety Equipment	1.1
Large Equipment replacement	1.0
Operational tools	0.6
Small Equipment replacement	0.3
<b>Total</b>	<b>5.3</b>

**Other Capex – Property & Workspace**

Investment RIIO-GD3 is broadly expected to follow RIIO-GD2, the acquisition of Thorpe Park was carried out in RIIO-GD2, and this is reflected in the higher property and workspace cost.

There are currently 13 depots across the network and 2 office locations, these are summarised below with lease information for each relevant site Thorpe Park – NGN OWNED.



The 15 buildings that make up the estate are of varying age and construction; these are in various states of repair containing plant that is either operating highly inefficiently or approaching end of life. In most of the buildings, considering the varying ages of these, the buildings fabric, insulation, and fixtures offer a much lower U-Value or insulative properties than modern materials.

There are compliance and safety improvements that have been recommended for building fabric and plant, this is particularly prevalent around fire safety across the estate.

Upgrades to facilities are required on various properties as to improve the working environment for staff, improve operations and productivity.

It is anticipated the proposals will reduce energy consumption across the estate, maintain a safe compliant estate, prevent unplanned failures of end-of-life assets, improve efficiencies at operational depots via reconciliation works, and improve staff wellbeing.

There have been various projects carried out in RIIO-GD2, this has left some additional reconciliation works on the affected sites, this would be particularly relevant on the Cannon Park and Hull sites.

**Main categories of proposed investment below –**

**Asset Replacement** – Having reviewed the NGN Asset Register which indicates the assets on each site, the condition of these, their projected lifespan, and a replacement cost for these, several proposed investments are planned for RIIO-GD3, below indicates probable investment required.

	RIIO-GD3 (£k)	
	Potential Replacement	Probable Expenditure
	60.7	37.6
	92.4	41.3
	57.9	57.9
	73.3	29.1
	329.3	135.3
	68.6	25.3
	79.3	34.1
	92.5	37.5
	685.2	123.1
	114.1	43.5
	<b>1653.3</b>	<b>564.7</b>

An asset replacement plan will improve efficiencies and reduce energy consumption, with replacements offering a higher energy rating than the existing asset.

**Fire Stopping & Fire Doors** – Thorpe Park requires a full Fire Stopping & Fire Door upgrade following a survey carried out earlier this year. Improvements to fire safety are also planned across the network, there are improvements required at each location.

**Intelligent Lighting** – The way a building is utilised has changed significantly since the Coronavirus Pandemic began in 2020, occupancy levels have dropped, with home working becoming the norm. While LED lighting is efficient when compared to alternative units, how a buildings use has changed is affecting these efficiencies, an example being a whole floor illuminated when sparsely populated. Intelligent Lighting systems can be used to drive wider efficiencies, optimise plant, improve staff wellbeing, and operate in a more efficient manner than existing systems providing energy savings.

**Building Improvements** – There is a need to improve facilities at several sites, improvements could include additional workspaces, drying room facilities, additional WC facilities, mezzanine floor additions or replacements and car park surface replacement.

**Rapid Chargers** – To supplement the current EV charger roll out, it is proposed to install Rapid Chargers at suitable locations across the network, these locations include Thorpe Park, Cannon Park, and Hull.

**Efficiency Improvements** – The heating and cooling plant at Thorpe Park currently consists of a large chiller for cooling, and boilers for heating, this is distributed via 108 fan coil units located throughout the building. The hot water is heated via a natural gas calorifier. The system is highly inefficient, has no zoning and operates as an ‘all or nothing scenario’ has limited control and is a significant energy consumer. It is proposed to redesign and replace

the entire system within the building, remove the natural gas boilers, and replace these with Air Source heat pumps. Replacement of the windows would help to retain heat in the winter and keep the office cool in the summer.

**C5.07 Other Capex > £0.5m**

At this stage we have not been able to identify the greater than £0.5m projects with the appropriate assurance.

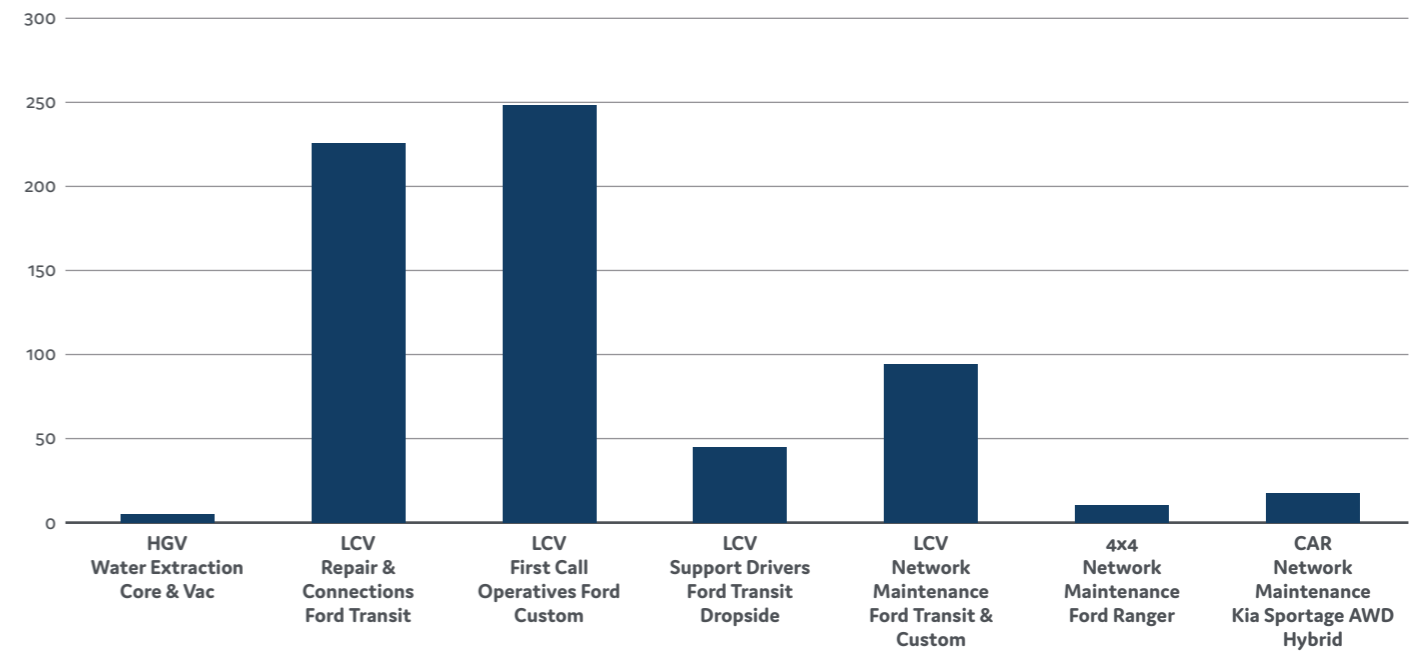
**CV5.08 Vehicles**

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation. The remaining 2 years forecast for RIIO-GD2 has been taken from our commercial team forecast and reflects values in RRP 2023/24. RIIO-GD3 business plan has been developed in conjunction with the NGN Fleet Manager and current vehicle costs have been used where possible to ensure accuracy.

Our Operational Vehicles are a critical part of our business as they allow us to get around our vast network to undertake planned and reactive work and attend gas escapes. The vehicles require ongoing maintenance and repair to ensure they operate efficiently, maintained to a roadworthy standard and we must replace them at the point where they become too expensive to run. During RIIO-GD2 we have replaced vehicles based on an age and mileage methodology and we will need to continue to do this in RIIO-GD3. Our stakeholders have told us that we must be ambitious in reducing our carbon footprint and we will continue to look at how we can improve our impact on the environment through our vehicle strategy.

NGN has 654 vehicles within its fleet (at the end of March 2024), predominantly Light Commercial Vehicles, Ford based, which are a combination of Transit, Transit Custom, Transit Dropside, Connect and Fiesta Car Derived Vans. Included within the fleet we operate two HGV’s such core & vac. The breakdown by vehicle type is shown in the table below.

**Vehicle Numbers by Type**



**Car** – As defined as a road vehicle with an engine, four wheels and seating for between one and five passengers along with small tools, items, and PPE. Our fleet includes Kia Sportage AWD Self Charging Hybrids which are used in our Operations for Network Maintenance Electrical, Instrumentation and Pipeline Technicians. These vehicles are All Wheel Drive which suits the role of a Network Maintenance Technician to reach urban and farmland areas of our network.

**Car Derived Van (CDV)** – As defined as a goods vehicle which is constructed or adapted as a derivative of a passenger vehicle and has a maximum laden weight not exceeding 2 tonnes. Generally, from the outside these vehicles will look like the size of a car, but on the inside will look like and function as a van as there will be no rear seats but instead a payload area with floor panel and no

rear side windows. Our fleet includes Ford Fiesta CDV, and these vehicles are used in Non-Operational roles such as Customer Care Officers and Apprentice Pool vehicles. These vehicles suit these roles as they require little space to carry items to complete letter drops, educational accessories and small equipment such as temporary heaters and hot plates.

**Light Commercial Vehicles (LCV)** – is a commercial carrier vehicle with a gross vehicle weight not exceeding 3.5 tonnes. Generally, these vehicles are a panel van varying in size from Short Wheelbase (SWB), Medium Wheelbase (MWB) and Large Wheelbase (LWB). LCVs are created as a compact truck and is optimised to be tough built, have low operating costs, powerful yet fuel efficient engines, and to be utilised in both urban and rural operations. Our fleet includes Ford Transit, Custom and Connect. These

vehicles suit these roles as they require an increased payload, capable of conversion to include Power Take Off installation to carry, tow and power tools and equipment to complete emergency and planned works.

**Heavy Goods Vehicle (HGV)** – is a large vehicle intended for the transportation of heavy loads, plant and equipment which exceeds 3.5 tonnes. Our fleet includes three HGVs consisting of two 7.5 tonne water extraction tanks and one 16 tonne core & vac placed in strategic locations of our network to carry out water extractions and pipe repairs. The HGV base vehicles suit these roles as they require an increased payload to operate the equipment fitted.

We use a range of vehicle types including AWD Hybrids for our maintenance teams, Fiesta Vans for our customer care teams, Transits for our emergency and repair teams and Dropsides for our Support Teams. These vehicles are serviced, maintained, and repaired via a network of garage repair facilities across our network. However, over time vehicles deteriorate and become more unreliable, maintenance costs increase and resale value falls. We have found that the optimum point in an operational vehicle's lifetime is to maximum the warranty period of the vehicle and replace it with a more reliable vehicle at year 6 and/or 100,000miles. This ensures vehicle maintenance remains reasonable throughout its life within NGN delivering maximum vehicle uptime for our operations and value for money for our customers in the way we manage our vehicle fleet.

## FCO VEHICLE REPLACEMENT (CASE STUDY)

As we operate a 24 hours / 365-days service, our vehicles are expected to operate the same. As our vehicles age, regardless of planned service intervals, they breakdown more frequently incurring more downtime, replacement vehicle hires costs, achieve extremely poor mpg, and provide an old and dated impression to our customers. This was the case with our 2013-2015 First Call Operative (FCO) vehicles and following a whole life cost assessment and Cost Benefit Analysis we replaced the vehicles with the latest Custom base vehicle. In addition, the conversion we installed also received a full review by First Call Operatives to have valued input into how these vehicles work for the operatives. This included welfare facilities, a new layout, secure loading, and additional safety features in heavy tooling placement. Replacing these vehicles reduced vehicle down time, vehicle maintenance costs and received immediate savings on any vehicles hired. We also improved staff working environments, mpg performance and overall, our fleets presence to our customers and the public.

## Asset Failure

A failure in an asset is defined as the inability of an asset to fulfil one or more of its intended functions to a standard for performance that is acceptable and gives rise to a detrimental outcome. These failures have been categorised and split into the following seven categories:

- Brake Faults e.g. worn brake pads or discs, leaking brake fluid, damaged rotor discs.
- Electrical Faults e.g. Battery, non-start, alternator, auxiliary battery/wiring faults, light units/bulbs.
- Engine Faults e.g. oil leak, radiator, coolant leak, DPF Sensor, AdBlue, injectors, belts.
- Plant Faults e.g. OBP compressor repairs.
- Other Faults e.g. damage, misuse and abuse, ancillary repairs, racking repairs.
- Steering Faults e.g. Power steering, tracking/alignment, steering racks, struts, bearings.
- Transmission Faults e.g. fluid, gearbox, clutch, flywheel.

Within the RIIO-GD3 Vehicle Replacement Programme we are replacing 557 vehicles on a like for like basis which we predict will be vehicles that will have an average age of 6 years or reaching 100,000 miles with each vehicle costing on average £47.3k.

	YR1	YR2	YR3	YR4	YR5
Operational Vehicles	104	114	74	89	176

The table above shows the Vehicle Replacement unit quantities that will be programmed to be delivered evenly over the five-year price control period which will ensure that the fleet will continue to meet the operational demands. Whilst the below table shows the Vehicle Replacement planned spend.

	YR1	YR2	YR3	YR4	YR5
Operational Vehicles Cost	£4.77m	£5.26m	£3.86m	£3.99m	£8.97m

This option aligns with business and operational requirements and is the preferred option to ensure we maintain a safe network.

The Vehicle Replacement Programme will provide the business with the flexibility to continue to replace traditional diesel vehicles with alternatively fuelled vehicles as they become more established and available on the UK market, we continue to work towards our RIIO-GD2 target of 25% Ultra Low/Zero Emission.

Throughout RIIO-GD2 new vehicle purchases were significantly impacted by the global effect of the semi-conductor shortage, however during the latter half of RIIO-GD2 we have been able to recover the replacement programme.

## RIIO-GD3 Proposed Strategy

Our replacement costs of vehicles have been derived from supplier quotes for various vehicle types and specifications that represent the best value, efficiency, reliability, and operational suitability. Due to the modest amount of battery electric vehicles available within the UK, the base vehicle costs of these vehicles are becoming more reasonable and aligned to traditional diesel base vehicle costs. It is assumed that any battery

electric vehicles purchased within the RIIO-GD3 period will broadly be of the similar value as a traditional diesel by the inclusion of savings from fuel, maintenance, and monetary carbon savings. However, this assumption does not include any purchases of hydrogen fuelled vehicles, whilst we anticipate within the RIIO-GD3 period fuelling infrastructure and vehicle availability will increase, the base vehicle cost for early adopters is estimated to be at least double the cost of the traditional diesel or battery electric vehicle.

Vehicle Role	Vehicle Type	Base Vehicle Cost	Conversion Cost	Total Vehicle Cost
OBP Repair & Connections	LCV	£29,179	£17,846	£47,025
First Call Operative	LCV	£29,462	£8,761	£38,223
Support Driver	LCV	£31,763	£2,467	£34,230
Customer & Apprentice	Car/LCV	£19,000	£4,000	£23,000
NM Mechanical	LCV	£29,179	£11,956	£41,135
NM E&I	LCV	£29,462	£8,761	£38,223
NM E&I	Car	£35,218	£0	£35,218
NM Pipeline	Car	£35,218	£0	£35,218
NM Pipeline	4x4	£27,694	£8,929	£36,623
NM Site Pride	LCV	£29,179	£11,956	£41,135
Special Operations	LCV	£29,179	£11,956	£41,135

\*Note\* these costs exclude overhead

## CV5.09 Physical Security

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation. The current view is that there will no more PSUP projects for the remainder of RIIO-GD2 running into RIIO-GD3.

## Repex Data Tables

### C6.00 Repex Cost Matrix

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP.

The historical data gaps for Tier 2b, Tier 3, and Other Mains have been provided by SMEs using internal data sources.

Total Repex costs in the draft proposal are 34.8% higher than the RIIO-GD2 forecast submitted as part of the 2023/24 RRP submission. Workload volumes are in-line with RIIO-GD2 plan which encompasses a continuation of additional 8.5km of Tier 1 completed per annum to recover reduced COVID-19 delivery of 85km.

	RIIO-GD1	RIIO-GD2	RIIO-GD3	RIIO-GD1	RIIO-GD2	RIIO-GD3
	Total	Total	Total	Ave/Annum	Ave/Annum	Ave/Annum
Tier 1 Mains and Services <2" steel	£672.61	£429.62	£588.27	£84.08	£85.92	£117.65
Tier-2A Mains and Services	£34.33	£6.23	£11.30	£4.29	£1.25	£2.26
Tier-2B Mains and Services	£70.89	£50.15	£61.67	£8.86	£10.03	£12.33
Tier-3 Mains and Services	£31.88	£34.55	£53.80	£3.99	£6.91	£10.76
>2" Steel	£20.10	£28.09	£43.96	£2.51	£5.62	£8.79
Other Policy & Condition Mains & Services (incl. MPDI)	£20.20	£17.99	£23.27	£2.53	£3.60	£4.65
Diversions Mains and Services	£20.04	£17.01	£16.47	£2.51	£3.40	£3.29
Capitalised Replacement Mains & Services	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Services not Associated with Mains Replacement	£85.92	£34.33	£38.98	£10.74	£6.87	£7.80
Repex MOBs	£0.48	£1.47	£7.40	£0.06	£0.29	£1.48
Iron Stubs	£0.00	£11.31	£4.91	£0.00	£2.26	£0.98
<b>Total</b>	<b>£956.45</b>	<b>£630.73</b>	<b>£850.03</b>	<b>£119.56</b>	<b>£126.15</b>	<b>£170.01</b>

	RIIO-GD1	RIIO-GD2	RIIO-GD3	RIIO-GD1	RIIO-GD2	RIIO-GD3
	Total	Total	Total	Ave/Annum	Ave/Annum	Ave/Annum
T1 length decommissioned - Outturn Workload (<=3")	221.82	83.17	73.13	27.73	16.63	14.63
T1 length decommissioned - Outturn Workload (4" + 5")	2,082.33	1,144.92	1,127.37	260.29	228.98	225.47
T1 length decommissioned - Outturn Workload (6" + 7")	919.77	627.73	642.80	114.97	125.55	128.56
T1 length decommissioned - Outturn Workload (8" )	369.17	332.05	345.20	46.15	66.41	69.04

T2a length decommissioned - Length in respect of diameter band n (>8<10 inches)	4.20	0.13	0.65	0.53	0.03	0.13
T2a length decommissioned - Length in respect of diameter band n (10<=12 inches)	37.15	4.77	7.59	4.64	0.95	1.52
T2a length decommissioned - Length in respect of diameter band n (>12<18 inches)	22.70	3.30	1.86	2.84	0.66	0.37

T2b length decommissioned - Length in respect of diameter band n (>8<10 inches)	10.38	12.38	6.17	1.30	2.48	1.23
T2b length decommissioned - Length in respect of diameter band n (10<=12 inches)	117.40	78.43	86.73	14.67	15.69	17.35
T2b length decommissioned - Length in respect of diameter band n (>12<18 inches)	31.90	11.16	16.09	3.99	2.23	3.22

T3 length decommissioned	35.48	28.09	29.10	4.43	5.62	5.82
Diversions decommissioned	100.31	60.31	66.45	12.54	12.06	13.29
Steel length decommissioned	325.97	202.40	223.50	40.75	40.48	44.70
Other length decommissioned	177.30	192.40	190.40	22.16	38.48	38.08
No. of services transferred	118,794	69,734	80,675	14,849	13,947	16,135
No. of services relaid	221,187	147,929	143,433	27,648	29,586	28,687

Cost pressures are present across the whole Repex programme (all Tiers). The draft proposal has been developed at an individual project level based on all remaining non-PE mains and services in the Network.

The cost of works for each Tier has been developed using 6 key initial cost drivers at a granular level with additional engineering and macro-economic factors applied to the wider project base.

The key 6 cost drivers used to arrive at a delivery cost for our remaining Repex works are summarised in the table below:

Level 0 Unit Rate Ofgem Table	Level 1 Unit Rate Area	Level 2 Unit Rate Pipe Material Type	Level 3 Unit Rate Lay Diameter	Level 4 Unit Rate Construction Method	Level 5 Unit Rate Surface Type
6.02 Tier 1	Cumbria	Cast Iron & Spun Iron	Less than 75mm	ID (insertion)	Road or Track
6.03 Tier 2A	North Tyne	Ductile Iron	75-125mm	OC (open cut)	Roadside
6.04 Tier 2B	Wear	Steel	125-180mm		Other
6.05 Tier 3	Tees		180-250mm		
6.02 <2" Steel	North Riding		250-355mm		
6.06 >2" Steel	East Riding		355-500mm		
	Leeds		500-630mm		
	Bradford		Greater than 630mm		
	Pennines				

By establishing delivery unit rates for all remaining works using the factors above has enabled a more accurate view of works delivery not only within our Network sub-areas but also allowing for Material Type, Pipe Diameter, Construction Method, and pipe surface location which are all key cost drivers for projects.

A key cost driver for the Repex programme is the technique used to lay the replacement pipe, with insertion being less disruptive to customers and more cost efficient from a productivity perspective i.e. less excavations and plant & materials used to complete works. The table below summarises the increase in Open Cut on Tier 1 works due to the remaining work basket and associated factors limiting insertion technique.

TECHNIQUE			
	GD1 & GD2 (Actuals)	GD2 Forecast	GD3 Forecast
Insertion	90%	89%	83%
Open Cut	10%	11%	17%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

As well as technique, another key cost driver is the material type of the pipe being replaced with Ductile Iron bringing additional costs to the project due to the technique required to abandon the pipe resulting in additional equipment costs and reduced productivity.

MATERIAL TYPE			
	GD1 & GD2 (Actuals)	GD2 Forecast	GD3 Forecast
Cast Iron & Spun Iron	65%	59%	55%
Ductile Iron	26%	33%	36%
Steel ≤ 2"	9%	8%	9%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

NGN have also been conscious of maintaining positive relationships with Local Authorities and Stakeholders – sometimes leading to changes in programme and more intrusive/expensive work being moved in the programme. The ability to do this will be limited or removed when the remaining programme cannot be delayed further resulting in more expensive city centre works, this is evidenced by the cost change experienced during COVID where access being granted from LA's was not as difficult to obtain and yet the unit cost on Tier 1 & <2" Steel (Mains & Services), for example, increased from £172 in GD1 to £238 in RIIO-GD2 (38%). Other Key Factors which have been factored into the draft proposal which influence the programme and associated costs, and efficiency:

- Reduced productivity due to shorter project lengths and technique and engineering changes resulting in additional resourcing across the Repex delivery model to achieve abandonment targets.
- Associated reinstatement 'teams' to support additional projects being completed at one time (more projects to complete annual target abandonment due to reduced average length)
- Increased deep excavation requiring additional materials, equipment and resource due to remaining work programme due to shift in technique towards open cut (see above)
- Increased traffic management due to more projects being completed to deliver annual abandonment lengths. There will also be more projects in areas with more concentrated impact to customers i.e. arterial routes and city and town centres where local authorities have previously not granted access
- Increase in engineering complexity of remaining programme because of the risk based/CBA optioneering as part of the regulatory price controls to date:
- Back Garden Mains
- Where the gas main is at the back garden with services at the rear of the property.
- Complexity or difficulty for placement of large equipment into back gardens, reducing efficiency
  - » Requirement to take down fences (extra cost and rectification issues)
  - » Potential built overs so preference to open cut
  - » Hand dig excavations and wheelbarrow out due to equipment access limits
- Reinstatement takes significantly longer due to access issues, volume and size of excavations
- Part Complete Works
- Works which are left part complete and require demobilisation and re instatement
- Local Authority requesting we leave site prior to completion
  - » Works overrunning due to changes on site and Local Authority will not grant a notice extension at that time
  - » Remobilisation to site is then required later to complete remaining works, often minimal in length and scope
- Low productive work that has a high unit rate – negating previous efficiencies and driving increase to overall Repex programme
- Narrow Access
  - » Working area restrictions
  - » Low productive work
  - » Hand dig required for excavations due to inability to mobilise equipment to project
  - » Wheelbarrow of spoil and reinstatement material in and out due to access restrictions of equipment
- Long Sided Services
  - » One gas main is feeding both sides of the street. Typically, there is a gas main either side of the road feeding properties, in these projects there is only one main serving both sides of the street.
  - » Highly service dense works – more services per metre which negatively impacts productivity and cost.
- Customer issues with road closures, parking etc impeding works and, or additional requirements for traffic management.
  - » Time consuming work that slows down the overall Repex programme
- Arterial Routes
  - » Larger volume of traffic depending on road type and location
  - » Restrictions by council on pull lengths reducing productivity
  - » Requires traffic management with full time operative to control lights
- Reinstatement cost differences depending on road type i.e. Type 1/2 road typically HRA/SMA vs Type 3/4 road being DBM, backfill and specialist reinstatement costs significantly higher
- VMS (Variable Message Signs) required on major routes giving advanced notice on works whereas we used to put out handwritten signage, additional cost compared to typical signs used on majority of works
- Council requests for restricted working hours, night works and weekend working

- Section 58 Works
  - » Section 58 prevents statutory undertakers from digging up the road for a period of between three to five years after the road has been resurfaced or reconstructed, unless the work is an emergency or needed to provide a new customer service
  - » If area is excavated required to complete full width/half width reinstatement rather than excavated section only.
  - » These works will be become more prominent in RIIO-GD3 as we need to go and replace pipes regardless of the 'embargo' as the population of remaining projects minimises optioneering/ moving works to later year.
  - » Requirement for specialist machine laid reinstatement contractor to complete works.
  - » Stakeholder impact with local authority and wider customer base.

### CV6.01 Mains Tier 1

All historical data, from 2013/14 to 2019/20, reflects the values submitted in the RRP. The cost data for 2020/21 to 2023/34 has been provided using the 3 years reported costs and the remaining two years of RIIO-GD2 based on latest cost view on the work basket for these 2 years. The volumes and financial data for 2020/21 to 2023/34 has been provided by the SMEs using internal data sources.

Cost increases are covered in 6.00 commentary above which covers cost pressures on impacting all Tiers.

### CV6.02 Mains Tier 2A

All historical data, from 2013/14 to 2019/20, reflects the values submitted in the RRP. The missing historical volumes and financial data for 2020/21 to 2023/34 has been provided by the SMEs using internal data sources.

Cost increases are covered in 6.00 commentary above which covers cost pressures on impacting all Tiers.

### CV6.03 Mains Tier 2B

All historical data, from 2013/14 to 2019/20, reflects the values submitted in the RRP. The missing historical volumes and financial data for 2020/21 to 2023/34 has been provided by the SMEs using internal data sources.

Cost increases are covered in 6.00 commentary above which covers cost pressures on impacting all Tiers.

### CV6.04 Mains Tier 3

All historical data, from 2013/14 to 2019/20, reflects the values submitted in the RRP. The missing historical volumes and financial data for 2020/21 to 2023/34 has been provided by the SMEs using internal data sources.

Cost increases are covered in 6.00 commentary above which covers cost pressures on impacting all Tiers.

### CV6.05 Mains Tier Other

All historical data, from 2013/14 to 2019/20, reflects the values submitted in the RRP. The missing historical volumes and financial data for 2020/21 to 2023/34 has been provided by the SMEs using internal data sources.

Cost increases are covered in 6.00 commentary above which covers cost pressures on impacting all Tiers.

### CV6.06 Mains Diversions

All historical data, from 2013/14 to 2019/20, reflects the values submitted in the RRP. The missing historical volumes and financial data for 2020/21 to 2023/34 has been provided by the SMEs using internal data sources. The exceptions are rows 689 to 705 for RIIO-GD1 years 1 to 7 and data granularity by diameter band for costs and volumes in year 8 of RIIO-GD1 and RIIO-GD2 year 1,2, and 3.

Cost increases are covered in 6.00 commentary above which covers cost pressures on impacting all Tiers.

### CV6.07 Mains Decommissioned

All historical data, from 2013/14 to 2023/24, reflects the values submitted in the RRP. The exception being data for 2013/14 to 2020/21 for Length of Mains Decommissioned by material type (row 34 to 36) has been provided by SMEs using internal data sources.

The RIIO-GD2/RIIO-GD3 forecast for 'Total mains risk remaining at end of reporting year (incidents/year)' follows the historic trend of zero for all years for 'Iron', 'Steel', and 'Other'.

In the 'Baseline Risk Removed Summary (incidents/year x10^6)' we have assumed that 'Iron' will continue RIIO-GD2 trend, with the average over the last couple of years being cited, 'Steel' will continue with the average of the last 7 years, and 'Other' will be zero.

In the '% Length of Iron Mains Decommissioned which has calculated average risk (km)' the 'Total Length' is the total length of forecasted for 'Iron' in row 34, 'Average Length' has been calculated by taking an average of all previous years, and 'Average Length as %' is a calculation using the data from the previous two sections.

In the 'Length Decommissioned Main (km)' section the totals have been calculated using the forecasted totals by material type in the previous sections (Tier 1/Tier 2A etc). For Mains Other, the forecast is based on an average of the first 3 years of RIIO-GD2, as this information is not part of regulatory reporting figures within other tables.

## CV6.08 Repex Services

All historical data, from 2013/14 to 2023/24, reflects the values submitted in the RRP. Additional granularity for year 8 in RIIO-GD1 and year 1, 2, in RIIO-GD2 has been provided by the SMEs using internal data sources. There is no granularity for RIIO-GD2 onwards with regards to domestic and non-domestic services due to how this data is now reported. Reinstatement volumes data is not available for RIIO-GD1.

Cost increases are covered in 6.00 commentary above which covers cost pressures on impacting all Tiers.

## CV6.09 Risers

All historical data, from 2013/14 to 2023/24, reflects the values submitted in the RRP. The following assumptions were made for all volume and cost data in RIIO-GD1, '3-5 floors' equates to '<20m', '6-9 floors' equates to '20 to 40m', and '10+ floors' equates to '>40m'.

Cost increases are covered in 6.00 commentary above which covers cost pressures on impacting all Tiers.

## V6.10 Dynamic Growth

There is a discrepancy between the BPDT RIIO-GD2 formula for 'decommission length' and that found in the BPDT RIIO-GD3 and RRP tables. The pre RIIO RRP tables split diameter bands differently, so the Network starting point in 2014 includes 9" mains, whereas this is omitted in RIIO-GD2. Therefore, the historical data available in the BPDT RIIO-GD2 submission will not align the data supplied in the RRP 2024. The SME used source data RRP 2021 for year 8 RIIO-GD1 to identify the 'Population at the beginning of the year' and length decommissioned. Combining this with the RRP 2024 'Population at the end of year' for year 1 RIIO-GD2, the total dynamic growth could be derived. This process was repeated for all years in RIIO-GD1.

## CV6.11 Iron Stubs

All data reflects the RRP tables for RIIO-GD2 year 1, 2, and 3 and the latest view of forecasts. We expect to deliver the remaining Stubs programme at a linear rate through to mid RIIO-GD3

## CV6.12 Robotic Intervention

There is no data to report for Robotic Intervention for NGN.

# Memo Data Tables

## M8.00 Drivers

This table is auto populated.

## M8.01 MEAV

This table is auto populated.

## M8.02 LTS & Entry

We do not anticipate material LTS Pipeline workload in RIIO-GD3 but will provide further detail on known diversion projects in the final submission. AGI populations will stay mostly constant, in line with expectations that there will be no material changes to customer numbers or gas demand before the end of RIIO-GD3 regardless of energy pathway.

## M8.03 Capacity & Storage

NGN has included proposals in the capex submission to reduce capacity constraints at 3 AGI sites in RIIO-GD3. It is difficult to forecast the changes in capacity at this moment in time as FEED studies will dictate the final design.

## M8.04 Distribution Network

Distribution network population figure changes are driven entirely by Repex and reinforcement workloads. We expect the historic rate of change of metallic to PE to be broadly maintained through RIIO-GD3 due to broadly similar workloads as RIIO-GD2.

## M8.05 Capacity & Demand

NGN has included proposals in the capex submission to reduce capacity constraints at 3 AGI sites in RIIO-GD3. It is difficult to forecast the changes in capacity at this moment in time as FEED studies will dictate the final design.

## M8.06 Capacity Output

RIIO-GD3 capacity utilisation to remain constant. Capacity is kept under review annually and the 2 offtakes and the PRS with capacity over 100%, may result in a capital intervention before the end of RIIO-GD3. Capital interventions have been reflected in the LTS, Storage and Entry allowance requirements.

## M8.07 Reliability

We expect no material changes to customer numbers or reliability in RIIO-GD3.

## M8.08 PRE, Reports & Repairs

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation.

RIIO-GD3 forecasts are compiled as follows:

PREs – Trend tracking workload volumes over the last 5 years.

Reports/Condition Repairs – 4.17% reduction each year.

## M8.09 Safety

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP. Assurance checks have been carried out to ensure these are correctly entered and give a true representation.

The forecast for the remainder of RIIO-GD2 and RIIO-GD3 are broadly aligned and reflect a significant reduction of reportable incidents in RIIO-GD1.

## M8.10 Disconnections

As this is a new area of reporting NGN has provided a best current view to complete the requirements at this stage, the view presented has been obtained from SMEs in the organisation reflecting our current thoughts on the progression of gas disconnections. We have also factored an estimate for the Meter Box Isolation workload relating to the new Gas Industry Reference Standard for service pipe disconnections following primary meter removal as required under Regulation 16(3) of The Gas Safety (Installation & Use) Regulations 1998. We are still validating some of the assumptions and will look to provide details at a more granular level.

## M8.11 FTE

Data from RIIO-GD2 BPDTs submission has been used up to 2019. The subsequent data (from 2020 to 2031) has been provided by SMEs across the business and their expected resource requirement for the future including additional roles relating to Fatigue, Asset Leakage Detection, VCMA BAU, Services Beyond the Meter, Inclusion & Belonging, System Control business continuity plans, Energy Futures Training and Procurement Sustainability.

## M8.12 Standard Occupational Classification (SOC)

Data from RIIO-GD2 BPDTs submission have been used for 2018/19 and 2019/20. We have provided the data for the GD1 years in the SOC 2010 table by assuming the same categories apply across all years, deriving percentage for each SOC 2010 job code using 2018/19 BPDT RIIO-GD2 data, and pro-rata the FTE outturn for each year against the percentages above. We welcome feedback from Ofgem how this process could be improved for the next submission. Similarly, the subsequent data (from 2020 to 2031) for GDN own employees and contractor labour has

been derived from M8.11 FTE table that has been forecast using data provided by SMEs from across the business and includes the additional roles mentioned in M8.11 FTE above. The key provided by HR has then been used to categorise the SOC definitions.

## M8.13 Company Specific Factors

We do not have sufficient information at this stage to complete this table. We would welcome discussions with Ofgem and other networks to confirm what data is required here to ensure consistency and completeness.

## M8.14 Bespoke, Uncertain and Separate Activities (BUS)

We have completed this table on a best endeavours basis. We would welcome discussions with Ofgem and other networks to confirm what data is required here to ensure consistency and completeness.

Net Zero Research Village, National Insurance Uplift and VCMA allowance costs have been included in our baseline best view of Totex / Other Revenue Allowances for the purposes of financial and bill impact modelling. All other costs in M8.14 BUS have been considered as too uncertain and speculative and have not been included in our baseline and best views of costs in the submission.

We do not consider it appropriate to include anticipatory investment within baseline expenditure, where there is not clearly defined policy. Similarly, we do not consider it appropriate to allocate expenditure into an uncertainty mechanism where we have a clearly defined need. As such, our baseline and best view of totex are very closely aligned.

We have a track record of delivering our outputs within allowances and at an efficient cost. Our RIIO-GD3 plan is based on known workloads and our baseline expenditure represents our "best view" of expenditure for RIIO-GD3, with very minor exceptions. We consider that any variance to allowances in GD3 will result from policy decisions outside of our control and for which there will be specific reopeners to manage these decisions. At the time of writing and to the best of our knowledge we cannot reasonably forecast when or what policy decisions will be made and so for the purposes of business planning we have not included policy related uncertainty costs in our baseline expenditure or "best view" of Totex.

We have only included forecast costs where there is a clear audit trail of historic expenditure and a need for future expenditure. If certainty becomes apparent regarding the future levels or timings of the expenditure required, a reopener will provide an opportunity to recover or prevent any further costs on a justified basis, subject to any reopener threshold. We would expect to manage any variances below this threshold within our baseline allowances.

## 7- & 28-Day Repair

In RIIO-GD3, we have proposed challenging repair targets to maintain our service. Our proposed targets are to complete 89% of outstanding repairs within seven days and 98% within twenty-eight days by the end of RIIO-GD2. We believe that these targets can be achieved without any additional expenditure above the base Totex.

We have put significant effort into completing repairs over the past few years and have achieved 91% repairs in 7 days and 98% in 28 days for 2023/2024. This dedication has led to a strategic shift and a focused approach to ensuring that repairs are finalised promptly, eliminating leaks. By implementing digitised work management, we have increased productivity by 20.1%, which would equate to a £4m per year, enabling us to perform as efficiently as we do.

Please see Chapter 3 and NGN CVP1 for more information.

Output bespoke new	Type	Target	Incentive
7-day repair	ODI-F	89%	GDNs would receive the TIM share of carbon monetary value for performance above 89% and a penalty if GDNs were to go below 70%
28-day repair	ODI-R	98%	NA

### 1.1 Uncertain Activities

#### East Coast Hydrogen Project: Business Plan Chapter 4

When: 2026 – 2031 | How Much: £2 million | Partners:

Why: There is currently a positive policy support towards role of hydrogen for I&C decarbonisation, but we need to better understand and debottleneck skills and supply chain challenges as well as capabilities.

Note, supply chain consideration is currently a key gap in our ECH2 project development.

#### Hydrogen Blending: Business Plan Chapter 4

When: 2026 – 2031 | How Much: Please see table and initial costs created.

Why: Support the use of green gas and the evolution of a decentralised and adaptive energy system.

- Develop blending capabilities in line with current government policy

Strengthen UK supply chain capabilities to support efficient hydrogen transition for I&C consumers.

#### Streetworks (inc. disposal of contaminated spoil): Chapter 6 Business Plan

### Hazardous Waste Disposal

There is another significant contributing factor that is increasing the Streetworks costs, the legislation that covers the safe disposal of hazardous waste encountered when the road is dug up. The Environment Agency's Regulatory Position Statement 211 gave utilities exemptions from this legislation until January 2019 – and a subsequent temporary extension now applies until April 2025. This extension has been put in place to give the utility industry time to formulate some alternative approaches to that laid out in the legislation that could satisfy the requirements with lower operational and cost impacts.

We have actively participated in Street Works UK's programme to develop a sampling and assessment protocol that would effectively replace RPS 211 after 31st October 2020. This work has identified that considerably more utility excavation spoil is classified as hazardous waste than previously thought. We typically generate c.189,000 to 206,160 tonnes of excavation spoil each year, of which effectively all is disposed as non-hazardous waste. From the 135 work sites sampled phase 1 and (2019) phase 2 (2022) sample data analysed by us during the 2019 Street Works UK sampling trial, 9.17% of tarmac and 10.98% of mixed excavation spoil was found to be classified as hazardous waste (nationally this was 16% for tarmac and 9% for mixed excavation spoils). Based on current disposal cost rates across the NGN network, hazardous waste is 295 times more expensive than non-hazardous disposal (£282.90 and £9.54 per tonne respectively).

Based on the findings of this trial and the subsequent assessment protocol being developed by Street Works UK, we have forecast a potential annual increase of excavation spoil disposal costs of £6.158m associated with increased requirements for laboratory analysis of excavation spoil and resultant requirements for increased disposal of excavation spoil as hazardous waste in RIIO-GD3. Our cost estimate methodology and assessment have been independently reviewed by a third-party environmental consultant with waste assessment expertise and confirmed as appropriate and in accordance with current waste disposal and laboratory/third party testing costs.

### Introduction of Lane rentals

A lane rental scheme would involve a Local Authority charging any works promoter carrying out any registerable works in the street for the time those works occupy the highway on the very busiest streets at the busiest times. As of 2023, no lane rental schemes have been introduced in our network, however we expect lane rental schemes to come into effect across more local authorities in RIIO-GD3. The cost for a lane rental is projected to be a maximum of £2,500 per day. Assuming that lane rental schemes will be applicable to traffic sensitive areas only, then the financial impact can be calculated using the average permit duration by cost area and multiplying it by the previous two factors.

Table 12 - Projected Lane Rental Costs

£2500 per day Lane Rental Local Authorities (LA) using FY23/24 data per year		
Cost Area	No. of Traffic Permits	Projected Cost (£m)
Repex	1572	£3.9m
Opex	1650	£1.99m
Connections	408	£1.02m

### Leeds Property Development "South Village (Formerly known as City One)"

#### Connections

[REDACTED] the preferred option as it builds in Future Proofing into the Leeds Gas Network. The following additional work to Option 2 was tabled:

[REDACTED] This existing site is complex and congested and could require a full re-design and re-build (subject to the FEED Study output). For pricing purposes, the underlisted work scope was the minimum required:

- » The existing site is overly complex and congested and would not be suitable to accommodate the proposed modifications. Land Acquisition may be the only option to consider with a complete re-build. This would be challenging and costly and would require a FEED Study to fully understand the options available to NGN.
- » Pigging facilities either require upgrading or part of the re-build on other land.
- » A new 38Barg to 17Barg PRS would be required.
- » A new Pre-Heater/Boiler system would be required.
- » Re-Routing of the LTS pipework, including fittings, valves etc. the extent of these works would be dependent upon the modification works/new location works required, vs the nearest network connection point.

#### Budget costs

Based on current knowledge the team considered that the order of cost to deliver the based on the foregoing works would be circa:

[REDACTED]

- Total of Circa - £22m

### Connections

In the current proposal, each domestic connections incurs an overhead of 1800K. If we were to reduce the number of connections per year, we would face a choice either raise the customers cost c£532- £1300 or see an annual loss £532,000 - £975000. We have made a reasonable uncertain cost to be around £750,000 per year.

### Digital Leakage Platform

The roll out of the DPLA and implementation of in-filed detection technologies has been strongly supported by Ofgem in its Sector Specific Methodology Decision and the HSE has also recently supported the use of in-field detection technologies on all Iron pipes.

The project is still running till 2025 and that they are including leakage detection tech in the base allowances but are flagging the wider implementation costs in the uncertainty table due to the materiality and uncertainty of it. The tech is built into the figures with 3iG area, but we have included the additional implementation costs in the uncertainty table as it is not clear exactly what they will be, or timing and it is better suited to a re-opener.

NGN

Probabilistic Modelling	
In-field detection technologies	£6.19m
Scaled DPLA modelling and development	£3.11m
Technology and organisational readiness	£2.99m
<b>Total</b>	<b>£14.26</b>

### Digital Leakage Platform Operational Costs

The roll out of the DPLA project, does not include the potential operational infrastructure changes needed to manage and respond to leakage found. We have included a line within the uncertainty table at 28% of repair overheads to account for this. Currently, it is unknown what the impact would be of the technology being implemented.

### Low carbon vehicles

A substantial proportion of our fleet is a 3.5t large panel van and has the requirement to tow equipment and trailers of at least 2.3t to support our operational teams. Currently there are no zero emission vehicles that can do this. We also have the requirement for On Board Power for our emergency repair teams to pneumatic tools. Whilst electric versions are becoming available, they are in their initial stages and currently do not offer the efficiencies as the pneumatic equivalent, which would restrict operational efficiencies to due poor powered tooling.

However, there are improvements all the time within this area and if we look where the EV industry started 10+years ago to where we are now it is moving in the right direction, but just not quick enough for GDNs/other utilities/emergency services etc in terms of vehicle availability, vehicle range and charging infrastructure.

Looking at the market across vans (and cars) we have averaged that we could potentially expect a 30% increase of cost to those vehicles that we currently do not have a zero-emission equivalent on the market for.

A few examples would be...

Diesel Transit £30k +VAT

EV Transit £40k 25% increase

Diesel Custom £30.2k +VAT

EV Custom £36.8k +VAT 18% increase

Hybrid Kia Sportage AWD £42k

EV Audi Q6 AWD e-tron £70k 40% increase

(there are currently no reasonable manufacturers producing an AWD EV car, only premium brands)

The above costs also exclude any government grant funding as we are unsure when this will expire and cannot be guaranteed in the future.

The costs put forward are an adjustment to the vehicle expenditure that we have submitted for RIIO-GD3.

NGN Role	Total Units	Total Cost	Tow 2.3t+	OBP	Operational Capability	Currently Available	Additional £
Repair & Connections	171	£8.04m	YES	YES	NO	NO	£10.45m
FCO	198	£7.57m	NO	NO	POSSIBLE	YES	£9.84m
FCO EV	14	£0.54m	N/A	N/A	N/A	N/A	
Network Maintenance	104	£4.09m	YES	NO	POSSIBLE	NO	£5.31m
Support & Special Operations	49	£1.74m	YES	YES	NO	NO	£2.26m
Customer Care & Apprentice	18	£0.5m	NO	NO	POSSIBLE	POSSIBLE	£0.65m
Wheeled Plant, HGV & Excavator	153	£1.77m	N/A	N/A	N/A	N/A	
Large Van H2 Trial	2	£0.24m	N/A	N/A	N/A	N/A	
<b>Total</b>	<b>709</b>	<b>£24.49m</b>					<b>£28.51m</b>

### CAWG: NI increase

Chancellor of the Exchequer Rachel Reeves announced in her autumn Budget on 30 October 2024 that employer contributions to national insurance would increase from 13.8% to 15% from 6 April 2025 and that the per-employee threshold at which employers start to pay national insurance will be reduced from £9,100 per year to £5,000 per year. This will increase NGNs National Insurance costs by £1.6m per annum across RIIO-GD3.

Changes and calculated the impact for salaries and wages for a PAYE basis as well as an additional 0.5% impact to contractor and associated delivery costs across TOTEX because of the Office of Budget Responsibility analysis.

### M8.15 Re-Opener Pipeline

The 2023/24 RRP tables have been used to populate this memo table for the 3 known Re-openers occurring in September 2024. We have not included anything for RIIO-GD3 re-openers as they are difficult to know in advance by their nature. We would welcome discussions with Ofgem and other networks to confirm what data is required here to ensure consistency and completeness.

### M8.16 Related Party Transactions

RIIO-GD3 data is in line with the latest actual year being 2023/24. No changes are expected and so the profile is flat from 2023/24 onwards.

### M8.17 Environment

All historical data, from 2013/14 to 2023/24 reflects the values submitted in the RRP and RIIO-GD2 Annual Environmental Reports where such data is available. Forecast carbon emissions performance for remainder of RIIO-GD2 and RIIO-GD3 (rows 19 to 145) are based on NGN's RIIO-GD2 EAP and RIIO-GD3 EAP targets. Forecasts presented in rows 193-240 represent different scenario forecasts for 2030/31 performance, with full details of the rationale and assumptions provided in column K. Pertinent NGN RIIO-GD3 EAP initiatives are identified in Table 5 based on NGN RIIO-GD3 business plan proposals.

### M8.18 NIS-R Cyber Resilience

Project costs have been considered and derived from several factors:

- **Experience of Delivering Projects in RIIO-GD2:** The cost estimation draws on the collective experience from recent projects delivered in RIIO-GD2. By analysing successes and challenges faced throughout these projects, we can better predict both the direct costs and hidden expenses that typically arise. This real time data helps in setting realistic budget expectations.
- **Historic Project Data / Timesheets / Spend:** Leveraging historical project data provides a solid foundation for cost estimation. Reviewing past timesheets and expenditure reports, we identify patterns in resource costs, material expenses, and timelines. This data helps in projecting similar costs for future projects, ensuring a robust and evidence-based budget framework.
- **Known Risks Associated with Consultants Engagement:** Engaging external consultants comes with inherent risks, such as dependency risks, cost overruns, and contractual issues. By acknowledging these known risks, we've factored in potential additional costs into the budget. This ensures that unexpected expenses related to consultant engagements are accounted for, thus minimising financial surprises.

- **Level of Regulatory Change Experienced in the Past Year:** The past year's regulatory changes have forced us to include contingency funds within the budget. Regulatory compliance often leads to additional costs for auditing, reporting, and implementation of new compliance measures. Thus, the budget includes a buffer to accommodate these regulatory requirements, ensuring the project remains compliant without financial strain.
- **Working with Third Parties:** Collaborating with third parties introduces variables such as coordination costs, integration challenges, and third-party risk management. These factors are included in the cost derivation to account for potential delays, communication overheads, and the need for quality control, ensuring a seamless partnership and smooth project execution.

By incorporating these elements, we have created a comprehensive and resilient budget that anticipates and mitigates potential financial impacts throughout the project's lifecycle.

### M8.19 Data & Digitalisation

The costs in this memo table have been derived using data from RIIO-GD1 and RIIO-GD2 and informed by applying observations and lessons learned from previous projects. Project costs were built up through the estimation of the resource costs for each known project, along with associated hardware and software costs, based on an initial project brief.

Digital Infrastructure costs relate to the integration of NGNs existing infrastructure with the Data Sharing Infrastructure currently under development by NESO. Digital Platform costs relate primarily to the optimisation and expansion of NGNs Open Data Portal, in compliance with Data Best Practice principles.

As individual projects are spread across the RIIO-GD3 period, costs have been apportioned equally for each year.

### M8.20 List of Buildings

We have used the previous building list from the RIIO-GD2 BPDTs submission and updated with latest compiled lists from the business SMEs. There are data gaps with several buildings in the list and this will be refresh prior to the final submission in December. We would welcome discussions with Ofgem and other networks to confirm what data is required here to ensure consistency and completeness.



## M8.22 FES

### Sensitivity Analysis

We have performed sensitivity analyses on FES24 to investigate any material financial impact on our plans with regards to future variability in network connections, disconnections, and reinforcement quantities.

As detailed in our Business Plan Data Table M8.22, FES24 Holistic Transition demonstrates an average of 4.8% year on year (YoY) decline in annual gas demand, whereas FES24 Counterfactual shows an average decline of 1% YoY. The stark gas demand decline in the Holistic Transition is driven by a combination of assumptions including high levels of heat pump uptake, improved energy efficiency, as well as enhanced consumer engagement. The Counterfactual pathway, which does not reach Net Zero in 2050, shows a more comparable profile to our RIIO-GD3 forecasts. [See row 27 of tab M8.22]

Our RIIO-GD3 forecasts, which are based on region specific factors and historic trends, demonstrate continued low growth (<1% YoY) in annual gas demand during RIIO-GD3 as gas prices continue to stabilise which is the primary factor affecting gas usage aside from weather. A secondary factor influencing gas demand forecast is prevailing government policy - for example limited incentives to influence uptake of heat pumps and boiler replacement schemes, as well as the current lack of clarity on the Future Homes and Buildings Standard requirements. [See row 27 of tab M8.22]

Our forecast peak gas demand remains virtually constant at approximately 480 TWh throughout RIIO-GD3. This is predominantly due to the legislative requirement to plan for the worst-case winter scenario (i.e. 1 in 20) with the existing customer base of 2.6 million. In the event of an extreme cold weather, experience tell us that customers will choose to turn on their heating regardless of gas price and as such our network must be able to meet this worst-case demand. The peak gas demand in the case of Holistic Transition shows an average YoY decline of 4.1%, and the Counterfactual shows an average decline of 0.75% YoY which is comparable to our RIIO-GD3 forecast. [See row 28 of tab M8.22]

The maximum annual delta in investments across FES Holistic Transition and our RIIO-GD3 forecasts for connections exit is £0.21m, disconnections is £0.07m, and reinforcement is £0.35m which demonstrate limited materiality. Our analyses confirm that in RIIO-GD3, despite the gas demand decline assumed by FES pathways, the need for investments across load related Capex (i.e. connections exit, disconnections, and reinforcement) remain essential regardless of the scenario to maintain network resilience. This is because the decline in gas demand assumed by FES pathways does not necessarily equate to a proportionate increase in disconnections, or proportionate decrease in new connections. This is especially true if gas demand reduction is driven by factors other than fuel switching such as thermostat reduction or efficiency improvement. [See rows 68, 70 and 71 of tab M8.22]

Our RIIO-GD3 forecasts for connections and disconnections are derived from historic trends. For Holistic Transition and Counterfactual pathways, the new gas connections are forecast to decrease unless gas boiler restrictions planned for new homes from 2025 (i.e. Future Homes and Building Standard) is reversed. Removal of the Domestic Load Connections Allowance (DLCA) could potentially increase the reduction in new gas connections further, due to increased connections cost. [See row 68 of tab M8.22]

We have assumed non-chargeable disconnections to not be impacted by FES because they are safety driven, therefore any changes to disconnections profile in the sensitivity analyses is influenced by customer chargeable disconnections. For the Holistic Transition pathway, the customer chargeable disconnections show a year-on-year (YoY) increment of approximately 7%, in contrast to the annual gas demand decline of 4.8% YoY. This is because fuel switching via heat pumps is one of the primary drivers in the Holistic Transition pathway which would necessitate the relative increase in disconnections. [See row 70 of tab M8.22]

It must be noted that reduction in network level demand does not correspond to a proportionate decrease in localised reinforcement needs. The delta in average annual gas demand apportioned to the customer numbers between our RIIO-GD3 forecasts and Holistic Transition is 3,848 kWh per customer which is 66% less than the average household gas demand<sup>1</sup> of 11,500 kWh. Therefore, in RIIO-GD3, we anticipate reinforcement workloads to remain constant as the need for continued network resilience is vital regardless of the energy pathway. [See row 71 of tab M8.22]

The influence of FES24 assumptions on other investment categories such as Repex and Opex remains immaterial (visit table 4.1 in the business plan for details). The trends between RIIO-GD3 forecasts and the Counterfactual are comparable across all categories analysed.

The RIIO-GD3 unit cost has been applied to the holistic and counterfactual volumes as there would be slight change because majority of cost is assumed to be covered by the customer. The fixed overhead does not affect connections exit, disconnections, and reinforcement, because we are not reducing the back-office team in any scenario during RIIO-GD3.

The customer numbers for FES scenarios are derived from the national FES customer data and dividing that by 8, then adding number of connections and deducting the number of disconnections for each scenario. This methodology was adopted by all GDNs as FES does not provide regional data on customer numbers. We have then adjusted the starting point to match that of the RIIO-GD3 customer number in Yr1. Our customer base remains above 2.35 million throughout RIIO-GD3 in all scenarios analysed. [See row 48 of tab M8.22]

## Annual Demand

### Commercial Demand (73-732)

Commercial demands have been relatively flat in recent years. Their response to energy prices is considerably less than the domestic sector, and it is more than other non-domestic sectors, it is relatively low. Wider economic factors have a wider impact on the forecast than price.

Manufacturing NDM (>732 NDM)

Manufacturing demand has changed relatively little in recent years. They respond to energy prices, but only to a small degree. Underlying trends and wider economic forecasts have a larger impact on the forecast for this sector, which both have only limited growth in the forecast, as the economy is forecast to improve.

### Large Loads

For NGN's largest loads, reduction in demand in 2023 from some large loads, is viewed as economic and price related, and expected to recover in 2024. The forecast for these sites is of recovery for the large loads that reduced in 2023 with flat demands forecast going forward. This is in line with previous forecasts in terms of growth and overall values. It is largely unchanged from the 2023 forecast for these sites. There is a slight recovery in 2024, followed by small, sustained increases as the economy grows. Very consistent historical gas demand in this sector, results in a minor change in demand over the forecast period.

### NDM total

Totals of loadband modelling result in the NGN Annual demand forecast. For both NE and NO LDZ domestic demand changes in the next two years dominate, as householders are forecast to increase comfort levels as fuel price reduce and wider inflationary pressures ease. Over the longer term, increasing household income and improving economic factors continue slower growth in comfort levels back towards pre cost of living crisis levels, with small growth in most non-domestic sectors contributing to a limited by steady rise in demand.

### Peak Demand

NGN is required to forecast 1 in 20 Peak day demand on an annual basis. We maintain and operate our network to be able to satisfy this level of demand, as defined in Uniform Network Code section W2.6.4(c):

1 in 20 Peak day demand - 1 in 20 peak day demand is the level of daily demand that, in a long series of winters, with connected load held at the levels appropriate to the winter in question, would be exceeded in one out of 20 winters, with each winter counted only once.

Peak demand is calculated using an established industry methodology and is based on determining the weather-demand relationship for each loadband in each LDZ. Smaller loadbands, which tend to represent households and smaller businesses, are much more weather sensitive than larger loadbands. This is because they tend to use most of their gas for space heating rather than industrial processes which are not linked to weather.

Our forecast peak gas demand remains virtually constant at approximately 480 TWh throughout RIIO-GD3. This is predominantly due to the legislative requirement to plan for the worst-case winter scenario (i.e. 1 in 20) with the existing customer base of 2.6 million. In the event of an extreme cold weather episode, experience tell us that customers will choose to turn on their heating regardless of gas price and as such our network must be able to meet this worst-case demand.

## M8.23 Climate Resilience

Costs are identified for the NGN RIIO-GD3 business plan operational and asset management investments which enhance climate resilience. The investments by cost type, and associated climate related risks, are identified in Table A8-6 in Appendix A8 (Climate Resilience Strategy) of our RIIO-GD3 business plan. In summary, the Opex items include vegetation maintenance at NGN operated asset sites and pipeline easements, pipeline condition inspection surveys, and pipeline condition based remediation/maintenance works. The capex items include generator upgrades, pipeline impact protection measures, pipeline diversions/remediations in response to river erosion, pipeline condition-based upgrades, and asset flood risk mitigation measures. Repex costs include all elements of mandatory and non-mandatory mains and service replacement.

## M8.24 Vulnerability

The following list of activities has been reviewed and agreed by Ofgem to be included in BAU costs.

### Vulnerable customer support

We currently employ 1 FTE funded by VCMA to deliver a dedicated role to support customers who are identified as vulnerable and/or needing additional support. This role sits alongside our customer care team and enables signposting and referral to additional support and services through tailored triage. This role is vital to maximise support for customers in vulnerable situations identified by engineers in their day-to-day interactions with customers when attending households. As awareness increases, we have proposed that this will need to increase to 2 FTE in RIIO-GD3 to adequately meet the needs customers across the NGN network. We have costed the roles under this activity based on currently delivery. We associated an estimated 10% of this delivery with our Repex work.

### Personalised welfare

For NGN, these items are funded through baseline allowances in RIIO-GD2. Costs given for this provision in table 8.24 are based average goods issued in recent years during RIIO-GD2, to include items such as portable fan heaters, portable showers, oil filled radiators, single ring hot plates and winter warmer packs. A review of historic data shows that costs are usually within approx. 10-15% of the figures given. We have costed an increase during RIIO-GD3 to account for a higher forecasted number of households supported. We associated an estimated 40% of this delivery with our Repex work.

Forecasted number of households supported are based on historic data for the actual number of households supported through planned and unplanned interruptions since reg year 2016/17, using a 5-year rolling average. Planned interruption numbers were excluded for 2020/21 due to a substantial reduction in planned work because of the Covid19 pandemic.

### Safeguarding services

As part of our vulnerability work and day to day delivery, we offer a range of services to safeguard and support customers. The installation of locking cooker valves (LCV) is low in demand but hugely impactful for households who require this support. This is currently funded in BAU. Delivery for RIIO-GD3 is based on the average number of LCV's requested/installed (CRM data since reg year 2021/22). We have accounted for a slight increase in RIIO-GD3 as awareness continues to rise through our ongoing VCMA delivery.

We use provide translation services via our website (Recite Me) and Language Line subscription to ensure inclusivity and efficiency of support for customers where there may be additional language or communication barriers. This is also a crucial factor to maintaining the ISO 22458 kitemark for inclusive service provision. This is currently funded through BAU. Costs for these services are based on actual costs during reg year 2023/24.

### Training

We have a strong culture aimed at addressing the needs of customers in vulnerable situations. This culture has developed over many years, and we have committed to continually improving awareness amongst internal colleagues to improve the outcomes for customers who may need extra support. Early in RIIO-GD2, we used VCMA funding to employ a dedicated vulnerability trainer to lead on this work and roll out training to colleagues using a vulnerability competency framework. We have continued to refine this delivery through RIIO-GD2 and have observed the benefit of this work, beyond VCMA projects. We now consider this training to be a vital source of guidance to assist the delivery of support for vulnerable customers and have proposed that it is moved to BAU in RIIO-GD3. Costs for this role (1 FTE) are based on current delivery.

### Memberships and accreditation

We have included memberships, accreditations and events that are relevant and supportive to the delivery of our Vulnerability Strategy and costs are based on 23/24 costs. These activities are consistent with other GDNs.

Memberships include APPCOG, National Energy Action (NEA) BSG, Collaboration Network and Gas Safe Registration (specifically for services beyond the meter activities including CMDDA1 checks). Accreditation includes BSI ISO 22458 Inclusive Service Provision. Events include NEA National Conference, Utility Week Vulnerability and Debt Conference, NGN Community Partners Together (open day).

### Campaigns and education

We have undertaken network specific and collaborative PSR and CO campaigns with other GDNs for many years. We have continually improved the delivery of these campaigns, demonstrating year on year increases in PSR registrations. We also have several projects targeted in schools and communities to educate on PSR and enable more people to benefit from the services offered through registration. We work closely with DNOs within our network to maximise the impact of this work.

Costings in this section for PSR awareness and education are based on 23/24 delivery. This work is currently funded through VCMA, but we believe this work is essential for the promotion of PSR for those who need it and should be funded as BAU. Insights from customers and stakeholders have told us that awareness of the PSR can be improved further and we continue our commitment to do so.

Volumes for direct reach are based on expected campaign engagement based on 2023/24 delivery. We estimated the % of referrals to PSR to be 0.25% of overall annual direct campaign reach based on average click through rate for RIIO-GD2 campaigns delivered in 2023/24.

Volumes for direct reach for education are based on 2023/24 delivery for all projects that deliver this work.

### Carbon Monoxide

All the activities under this section are interlinked and help to create a robust package of support to safeguard against the dangers of CO.

During RIIO-GD2, we have upskilled our engineers to undertake additional checks following reports of CO. These CMDDA1 checks enable us to investigate the source of the CO risk and isolate relevant appliances whilst enabling supply to other appliances where no CO risk is posed. This goes above and beyond our obligation to 'make safe' meaning that a safe supply can be restored quickly and efficiently. This activity has been welcomed and supported by stakeholders who feel that GDNs are well placed to provide this service. We continue to increase delivery through RIIO-GD2, funded by VCMA. Having observed the impact of this activity, we propose that this is moved to BAU in RIIO-GD3, and we have forecasted an increased delivery from 2026 onwards (c.900 households per year have their supply isolated following a CO emergency call out). Delivery volumes have been forecast as a percentage of customers who have had their supply isolated during a CO report based on 2023/24 data. Costs include delivery and re-training/assessment of engineers within the price control period.

We have undertaken network specific and collaborative PSR and CO campaigns with other GDNs for many years. We have continually improved the delivery of these campaigns. Costings for CO campaigns and education are based on 23/24 delivery. This work is currently funded through VCMA, but we believe this work is essential to safeguard against CO risks and should be funded as BAU. Insights from customers and stakeholders have told us that awareness of the CO can be improved further, and we continue our commitment to do so. Volumes for direct reach are based on expected campaign engagement based on 2023/24 delivery.

We have delivered CO education within schools and the wider community through RIIO-GD2 funded by VCMA. This work has been hugely successful and enabled customers of all ages to know how to keep their households safe from the dangers of CO. Working with partners, we have enabled greater reach for this activity. Volumes for direct reach are based on 2023/24 delivery for specific projects that deliver this education in schools and communities.

We offer CO/specialist alarms through all our VCMA and wider vulnerability projects, as well as through BAU interactions with customers, for eligible households. The distribution of CO alarms increases the impact of the awareness and education of CO and enables access to alarms for households that may otherwise not be able to protect their households in this way due to costs or accessibility of alarms. This has been especially beneficial through the cost-of-living crisis when partner and stakeholder insights have indicated that many households may cut back on essential safety products and services to afford other bills or buy food. Costs are based on an average cost of £12-15 for standard CO alarms and an increased cost of £103 for accessible alarms and associated equipment. Volumes are based on numbers required to support our portfolio of vulnerability projects, BAU interactions, and including services beyond the meter/ CMDDA1 checks where a substantial proportion of alarms are found to be faulty.

### Connections

This activity is funded through BAU in RIIO-GD2. The costs and volumes for RIIO-GD2 are based on the number of actual alterations that took place during reg year 2023/24, calculated at a cost to NGN of £1,300 per alteration. We have increased the forecasted volumes and costs for RIIO-GD3 to into account the increased reach to customers with complex vulnerabilities through targeted work that is forecasted as part of our VCMA and BAU activities.

### Measurement and eligibility

These activities are fully funded through VCMA in RIIO-GD2.

During RIIO-GD2, the GDNs have worked together, and through consultation with Ofgem, to develop a common SROI tool. The tool has now been created and continues to be refined to optimise accuracy and consistency to demonstrate the social value of projects. We employed a dedicated social evaluation analyst to undertake the work associated with SROI for our VCMA projects. We have since expanded this work to include the analysis of other NGN projects supporting customers in vulnerable situations. We plan continue to this dedicated role (1 FTE) into RIIO-GD3 to maintain consistency of SROI analysis and have based the costs on 2023/24 actual costs. We have also included forecasted ongoing maintenance costs for the common SROI tool that has been developed by Sirio to undertake this work.

The analysis of SROI for projects supporting customers in vulnerable situations is widely supported by stakeholders including current VCMA delivery partners and our Citizens Panel (customers). Understanding the social value of this work gives assurance to our investments in vulnerability projects and assists in the justification of bill impact. Having a single dedicated analysis role for vulnerability programmes within NGN ensures consistency in evaluations (using the common tool) and enables us to support the sustainability of partner projects through bespoke feedback which helps to optimise outcomes for customers.

We have used an external delivery partner for eligibility checking as part of our services beyond the meter work so far during RIIO-GD2, but plan to bring this work in house from November 2025 to increase efficiency and improve the customer journey. This decision was made in line with stakeholder feedback and following exploration of alternative options for external delivery partners. This role equates to 1 FTE and has been costed in line with the vulnerable customer support that is already delivered, based within our customer care team.

## Innovation Data Tables

### C9.00 Innovation

At present we have not identified projects specific to Innovation within this category. Specific BAU innovation and service improvement activity will be delivered through our Operations, Digital and Customer strategy.

### C9.01 Innovation – NIA

We will continue to utilise the NIA allowance to deliver a diverse portfolio of projects, focussing on supporting customers in vulnerable situations and facilitating the energy system transition. We will be proposing a variety of projects which have been informed through customer and stakeholder engagement, as well as regulatory and government policy. All internal spend forecasts in the tables are profiled to not exceed the 25% threshold. This includes:

- Short-term solutions to assist CIVS through difficulties that have been exacerbated by cost of living / energy crisis
- long-term solutions supporting a fair transition and ensuring those at most risk are not left behind
- Enabling decarbonisation through whole energy solutions assisting local authorities to establish sustainable communities
- Decommissioning and repurposing of existing gas networks as we move towards future systems
- Maintenance and improvement of our existing digital infrastructure to increase efficiency

### C9.02 Innovation – NIC

N/A

### C9.03 Innovation – CNIA

We are not forecasting to carry forward any NIA allowance into RIIO-GD3.

### C9.04 Innovation – SIF

We will continue to deliver and support SIF related projects during RIIO-GD3 in response to Ofgem's SIF framework for RIIO-GD3. It is anticipated that we will spend the equivalent amount in RIIO-GD3 as we have in RIIO-GD2.

