GD23 – Gas Distribution Price Control 2023-2028

Draft Determination Annex F

Capital Investment

March 2022

About the Utility Regulator

Utility Regulator is the independent non-ministerial government department responsible for regulating Northern Ireland's electricity, gas, water and sewerage industries, to promote the short and long-term interests of consumers.

We are not a policy-making department of government, but we make sure that the energy and water utility industries in Northern Ireland are regulated and developed within ministerial policy as set out in our statutory duties.

We are governed by a Board of Directors and are accountable to the Northern Ireland Assembly through financial and annual reporting obligations.

We are based at Queens House in the centre of Belfast. The Chief Executive leads a management team of directors representing each of the key functional areas in the organisation: Corporate Affairs, Markets and Networks. The staff team includes economists, engineers, accountants, utility specialists, legal advisors and administration professionals.

Our mission

To protect the short- and long-term interests of consumers of electricity, gas and water.

Our vision

To ensure value and sustainability in energy and water.

Our values

- Be a best practice regulator: transparent, consistent, proportionate, accountable and targeted.
- Be professional – listening, explaining and acting with integrity.
- Be a collaborative, co-operative and learning team.
- Be motivated and empowered to make a difference.

Abstract

This annex provides the Utility Regulator's detailed assessment of capital expenditure for the GD23 price control period and beyond for each GDN. This establishes the framework for future development of the gas networks and ultimately contributes to the draft determination of tariffs in the GD23 period for the three GDN's.

Audience

This assessment forms part of our draft determination for GD23 and is of direct relevance to the gas distribution regulated companies. It may also be of interest to consumers and their representatives, government and other regulated bodies.

Consumer impact

The overall consumer impact of GD23 is set out in the main draft determination report. The estimates of capital expenditure in this annex contribute to the determination of tariffs for GD23.

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Executive Summary

This annex of the GD23 draft determination summarises the capital expenditure proposed by the three Gas Distribution Network operators (GDN's) in their business plans and set outs our initial conclusions on reasonable levels of capital expenditure for GD23.

Capital expenditure covers the investment used by the GDN's to build the networks of gas mains and other assets used to distribute natural gas to domestic and industrial & commercial properties, install services and meters to those properties, and replace those assets over time. To provide structure to our assessment, we collect and analyse capex under ten investment categories which form the basis for the presentation of costs in this annex and the structure of the detailed assessments.

The overall investment proposed by the GDN's for GD23 is presented in the table below. In total, the GDNs proposed investment of £226.5m before the application of a frontier shift.

Investment category (£m)	Capital investment for GD23 (£m)			
	FE (Av 2020)	PNGL (Sept 2020)	SGN (Av 2020)	Total (Various)
7 bar mains	0.000	13.731	0.000	13.731
LP, 2 bar and 4 bar mains	16.001	12.631	19.869	48.500
Individually funded	0.000	5.855	0.000	5.855
Pressure reduction	1.095	2.941	2.806	6.843
Domestic services	37.994	38.154	7.544	83.691
Domestic meters	8.627	26.209	0.990	35.827
I&C services	2.321	1.721	2.430	6.473
I&C meters	2.688	4.407	0.893	7.988
Other capex	1.466	2.077	0.300	3.842
TMA	5.632	6.624	1.492	13.747
Totals	75.823	114.349	36.324	226.497

Note 1. Figures may not sum due to rounding.

The table below shows our draft determination for each GDN using the same structure and investment categories. The total investment proposed for GD23 is £155.2m before the application of a frontier shift and deduction of customer contributions. Once these adjustments are made, the net capital investment proposed for GD23 is £149.2m.

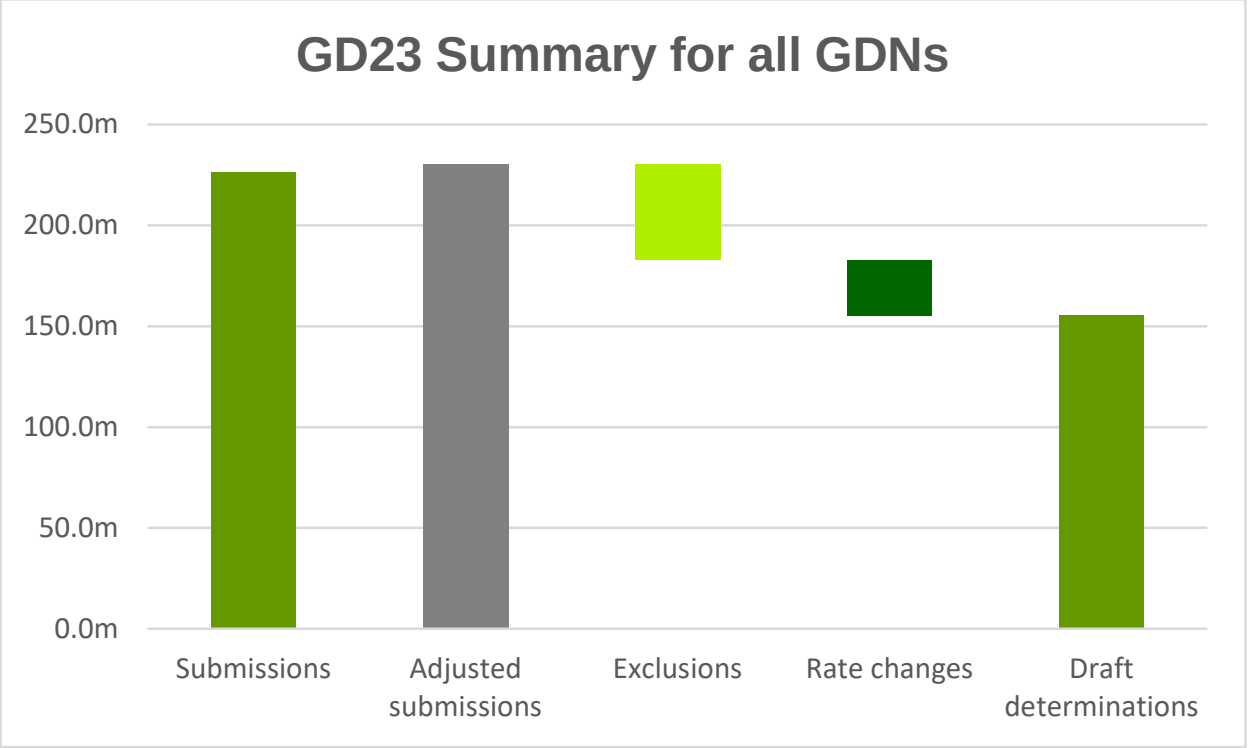
Investment category (£m)	Capital investment for GD23 (£m)			
	FE (Av 2020)	PNGL (Sept 2020)	SGN (Av 2020)	Total (Various)
7 bar mains	0.000	6.392	0.000	6.392
LP, 2 bar and 4 bar mains	6.396	5.319	12.280	23.995
Individually funded	0.000	5.853	0.000	5.853
Pressure reduction	0.649	1.701	0.000	2.350
Domestic services	26.598	28.142	3.784	58.525
Domestic meters	8.166	24.117	0.855	33.137
I&C services	1.895	1.708	1.256	4.859
I&C meters	2.068	3.803	0.991	6.861
Other capex	1.207	1.766	0.300	3.273
TMA	3.489	4.741	1.732	9.962
Totals	50.467	83.543	21.199	155.208
Frontier shift	-0.872	-1.484	-0.383	-2.739
Customer contributions	-0.950	-2.285	-0.005	-3.240
Totals net of FS and contributions	48.645	79.773	20.811	149.229

Note 1. Figures may not sum due to rounding.

In assessing the Business Plan submissions:

- We considered some additional information from the GDNs which increased the total proposed investment from £226m to £230m.
- Where we disagreed with the need for the investment we excluded these items from the determination. The majority of this relates to the exclusion of resilience mains; network extensions to towns that are not currently served by natural gas networks; and, reductions to the number of services and meters we expect GDNs to install in the GD23 price control period (circa £48m). Some of the work excluded in the draft determination might eventually be carried out in GD23 through the uncertainty mechanism as the need is confirmed.
- We challenged the increase in costs of delivery proposed by the GDNs, relying on the historical unit costs for delivery in 2017 to 2020 to determined investment in GD23 (circa £27m).

The impact of these steps and the challenge to the overall investment plans for GD23 is shown the in figure below.



The following paragraphs provide a summary of our proposals for the capital investment for each GDN. Information on the general principles underpinning the material exclusions and unit rate reductions are then set out.

Capex summary for the GDNs

A summary of the business plan submission and our draft determination of capital investment for each GDN is shown in the following tables.

Investment category (£m) - FE	Sub	Adj sub	Excl	Rates change	Rates change	DD
7 Bar Mains	0.0	0.0	0.0	0.0	0%	0.0
LP, 2Bar or 4Bar Mains	16.0	15.8	-8.4	-1.0	-13%	6.4
Individually Funded	0.0	1.2	-1.2	0.0	0%	0.0
Pressure Reduction	1.1	1.4	-0.7	0.0	2%	0.6
Domestic Services	38.0	38.0	-3.8	-7.6	-22%	26.6
Domestic Meters	8.6	8.6	-1.1	0.6	8%	8.2
I&C Services	2.3	2.3	0.0	-0.4	-18%	1.9
I&C Meters	2.7	3.1	-0.7	-0.3	-14%	2.1
Other Capex	1.5	1.5	0.0	-0.3	-18%	1.2
TMA	5.6	5.6	-2.1	0.0	0%	3.5
Total	75.8	77.4	-18.0	-9.0	-15%	50.5
Total (post FS, net of contributions)						48.6

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Investment category (£m) - PNGL	Sub	Adj sub	Excl	Rates change	Rates change	DD
7 Bar Mains	13.7	13.7	-2.7	-4.6	-42%	6.4
LP, 2Bar or 4Bar Mains	12.6	12.6	-5.7	-1.6	-23%	5.3
Individually Funded	5.9	5.9	0.0	0.0	0%	5.9
Pressure Reduction	2.9	2.9	-1.2	0.0	0%	1.7
Domestic Services	38.2	38.2	-3.7	-6.3	-18%	28.1
Domestic Meters	26.2	26.2	-1.3	-0.8	-3%	24.1
I&C Services	1.7	1.7	0.0	0.0	-1%	1.7
I&C Meters	4.4	4.5	-0.6	-0.2	-4%	3.8
Other Capex	2.1	2.1	0.0	-0.3	-15%	1.8
TMA	6.6	6.6	-1.9	0.0	0%	4.7
Total	114.3	114.5	-17.1	-13.8	-14%	83.5
Total (post FS, net of contributions)						79.8

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Investment category (£m) - SGN	Sub	Adj sub	Excl	Rates change	Rates change	DD
7 Bar Mains	0.0	0.0	0.0	0.0	0%	0.0
LP, 2Bar or 4Bar Mains	19.9	20.3	-6.0	-2.0	-14%	12.3
Individually Funded	0.0	0.0	0.0	0.0	0%	0.0
Pressure Reduction	2.8	2.8	-2.8	0.0	0%	0.0
Domestic Services	7.5	7.5	-1.3	-2.5	-40%	3.8
Domestic Meters	1.0	1.0	-0.2	0.0	5%	0.9
I&C Services	2.4	2.4	-0.6	-0.5	-30%	1.3
I&C Meters	0.9	0.9	-0.2	0.3	50%	1.0
Other Capex	0.3	0.3	0.0	0.0	0%	0.3
TMA	1.5	3.0	-1.3	0.0	0%	1.7
Total	36.3	38.2	-12.4	-4.7	-18%	21.2
Total (post FS, net of contributions)						20.8

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

General capex principles and themes

The following sections outline some of the general themes underpinning the material reductions we have made to capital investment in our draft determination.

Exclusions

The 'resilience' schemes proposed by FE and PNGL have been removed. These schemes provided additional interconnection in already developed networks to reduce the risk of a loss of supply due to a pipe burst. The UR's position is that the companies should have provided resilience in their original economic layout of the network and that they should complete any further work necessary within the price control mechanisms.

Most of FE's reinforcement schemes have been removed. Most of these schemes were planned for the start of GD23 but the company has confirmed they are generally not required until the end of GD23. Given the uncertainty over the need for these schemes, we have moved the investment to 2029 (i.e. beyond GD23). However, the work could be accelerated under the economic project mechanism if the need is confirmed.

SGN asked for funding to infill several towns and villages outside of their original development plan. SGN's economic appraisal of these towns demonstrated that they did not meet our economic test as a group (i.e. that the investment would not increase tariffs) and so we have removed this investment from the draft determination. We are open to reconsidering this infill in the future if circumstances change.

Pressure reduction for SGN has been removed in its entirety. In its submission SGN has asked for additional governors for its eight core towns. However in the first 4 years of GD17 it installed significantly fewer numbers of governors than it was funded for. Our position on the core towns is that the timing of governor installations is SGN's choice and the money to fund this work exists in the current price control. If it chooses not to install them in GD17, then consumers should not have to pay for the installation a second time. The Capex Risk Sharing mechanism will still allow SGN to install these governors in GD23 even if it chooses not install them in the GD17 period.

We have reduced the number of connections and meters for all GDN's. This will be corrected for actuals through the uncertainty mechanism.

Cost Rate Adjustments

We have generally determined unit rates based on actual investment in 2017 to 2020.

PNGL 7 bar reinforcement has been allowed, but with a material reduction in unit rates. Our rates are based on the outturn of reinforcement projects completed in GD17 and the East Down extension.

The GDNs asked for large increases in service costs suggesting that the cost of services had been cross subsidised by mains construction work in the past. There is no external evidence for this and we are not clear why it should have happened, so we have discounted the argument for the increase.

The capitalised cost percentages for all GDNs had increased as a consequence of them maintaining the level of capitalised costs against a declining volume of work. Our draft determination applies a constant percentage of capitalised costs consistent with historic levels of capitalisation.

The GDNs asked for a 4-6% uplift for current cost pressures related to Covid recovery, Brexit and energy prices. Our draft determination assumes that these impacts are either short term and/or reflected in general inflation. As a result, we have maintained our approach to Real Price Effects (RPEs) which reflect the long term differential between our general measure of inflation and the long term inflation of the costs of capital works undertaken by the GDNs.

The Traffic Management Act (TMA) reduction is a function of the other reductions in the determination. We include an allowance for future implementation of the TMA estimated as 10% of the cost of mains and services. Unless the TMA is implemented, the costs will be deducted from the opening TRV for GD29.

1. UR Proposals on Capital Expenditure

Overview

1.1 This annex of the draft determination provides detailed information on the capital expenditure proposed by the three GDN's in their business plans and sets out our analysis and initial conclusions on reasonable levels of capital expenditure for GD23.

1.2 Chapter 2 describes the structure of capital expenditure information in the business plan submissions. We have followed this structure in our description of each GDN's submission.

1.3 Chapter 3 describes six areas where we have developed common approaches to our assessment of the capital submissions, these are as follows:

- Assessing economic levels of infill mains.
- Describing the main laying incentives and uncertainty mechanisms.
- Assessing benchmark rates for capital expenditure using capital expenditure performance in Northern Ireland from 2017 to 2020.
- Allowing for the potential for the implementation of additional traffic management legislation in the future.
- The application of a frontier shift to reflect movements in capital expenditure input costs relative to CPIH and the on-going efficiency gains attributable to productivity improvements.
- The application of customer contributions to the analysis for each GDN.

1.4 Chapter 4 describes our general approach for each key investment category. This follows the structure described in Chapter 2, with further sub headings as required for each category.

1.5 In Chapters 5, 6 , and 7 we summarise the GDN's submission, describe our assessment and challenge of the submissions and conclude with the level of capital investment allowed in the draft determination for FE, PNGL, and SGN respectively.

1.6 The capital expenditure proposed by FE and SGN in their business plans is presented in Average 2020 prices. PNGL's price base is September 2020. Our assessment of the GDN's submission was undertaken in average 2020

price base, adjustments were applied for PNGL. The draft determination also includes a frontier shift adjustment to reflect real price effects and productivity improvements over the GD23 period from the base year. We have identified the impact of frontier shift as a final adjustment.

1.7 We have also made a final deduction to the capital expenditure which accounts for customer contributions.

1.8 While our assessment has focused on the GD23 period (2023 to 2028), we have also made an assessment of long term activity and capital investment up to 2045, 2046, and 2057 for FE, PNGL, and SGN respectively. This is to ensure that the GD23 tariffs reflect a reasonable long term view of the industry. In the sections relating to the individual GDN's, we have provided a brief summary of the assumptions we have made for capital investment post GD23. These assumptions feed into the modelling of the GD23 tariffs and do not reflect a conclusion on any specific issue or any commitment to long term investment which will be assessed in a future price control.

2. Overall Structure of Capital Expenditure Submissions and Assessment

2.1 The capital investment submissions for GD23 were structured around the following key categories of investment:

Investment category	Description
7 bar mains	Intermediate pressure mains operating up to 7 bar pressure which provide bulk distribution of gas from the high pressure network to the distribution networks which operate at up to 4 bar. In GD23, PNGL included several projects to reinforce the existing 7 bar intermediate pressure network.
LP, 2 bar or 4 bar mains	Distribution mains operating at up to 4 bar pressure. Consumers are connected to these distribution mains through service connections and metered supply points which include local pressure regulation. Distribution mains are included in each GDN's price control as: • Infill mains to serve existing developments. • New build mains to serve new developments.
Individually funded	These are projects which are well defined and specific in nature. They can also be used to ring fence an allowance so that it is dependent on a specific output being delivered. In GD23 FE's submission has one ring fenced project for RiverRidge, and PNGL's has specifically defined infill allowances relating to previous decisions on Greater Belfast, Whitehead, and East Down.
Pressure reduction	Pressure reducing stations are used to manage pressure between different parts of the network, typically from 7 bar intermediate pressures to 4 bar or 2 bar medium pressure distribution mains and from 4 bar or 2 bar distribution mains to distribution mains operating at low pressure up to 75 mbar.
Domestic services	Domestic services provide the connection between the distribution mains and the metered supply point of individual domestic consumers. The domestic service includes the connection pipe, new meter box and isolation valve.
Domestic meters	Domestic meters are provided for measuring and billing gas supplied to domestic consumers. The domestic meter includes the meter, the local pressure regulator and supply valve. Domestic meters are included in the GDN's price control for new connections to domestic properties. Both PNGL and FE have included 'end-of-life replacement' of existing domestic meters in GD23.
I&C services	Industrial and commercial services provide the connection between the distribution mains and the metered supply point of individual industrial and commercial consumers. The service includes the connection pipe, new meter box and isolation valve.
I&C meters	Industrial and commercial meters are provided for measuring and billing gas supplied to industrial and commercial consumers. Each I&C meter installation includes the meter, the local pressure regulator and associated pipework and valves. I&C meters are included in the GDN's price control for new connections to I&C properties. Both PNGL and FE have included 'end-of-life replacement' of existing I&C meters in GD23.
Other capex	Other capex covers investment in systems and assets required to manage service delivery including vehicles, buildings and IT equipment and systems.

Investment category	Description
Traffic Management Act (TMA)	The Traffic Management Act, if implemented in full, would require GDN's to make additional payments to Transport NI in respect of street works. Allowances of 10% of total mains and services costs have been included in the determination for the future implementation of this legislation. In practice, the GDN's will not receive this funding unless and until the legislation is implemented, at which time the impact on costs will be reassessed.

Table 2.1: Investment category descriptions

2.2 We have used this structure to present our assessment and challenge to the GDN's proposals and our conclusions and the allowances included in this draft determination. Within each investment category, we have considered reinforcement of the existing system, growth (infill, new build and additional connections) and replacement of existing assets separately where appropriate.

3. Common Approaches to Key Areas

Introduction

3.1 In this section we outline six key areas where we have adopted a common approach to inform our draft determination of investment for each GDN. These are as follows:

- Assessing economic levels of infill mains.
- Describing the main laying incentives and uncertainty mechanisms.
- Assessing benchmark rates for capital expenditure using capital expenditure performance in Northern Ireland from 2017 to 2020.
- Allowing for the potential for the implementation of additional traffic management legislation in the future.
- The application of a frontier shift to reflect movements in capital expenditure input costs relative to CPIH and the on-going efficiency gains attributable to productivity improvements.
- The application of customer contributions to the output of our analysis for each GDN.

Common approaches – Economics level of infill mains

3.2 We have not updated or changed our economic appraisals since our GD17 determination.

3.3 In our GD17 determination we appraised the FE proposal for 621 projects and determined that as a complete package they were economic. We signalled that we would allow FE to prioritise the construction of the network and recognised that some work would carry over in to GD23.

3.4 We determined a general economic level of infill for PNGL and this has also carried forward into GD23. It will also apply to FE when it completes its mains infill package in 2023.

3.5 We made decisions on Greater Belfast Infill and Whitehead Infill in 2020 and 2018 respectively and these have not been reassessed.

3.6 The development of the gas network in both the SGN area and the PNGL East Down area were subject to separate DETI economic appraisals and relevant government policy in terms of government subvention and/or the

inclusion of some costs in the postalised transmission tariff. We have not subjected the development of the gas network in these areas to a further economic test and the determination allows for the wholesale construction of gas mains within the towns served.

3.7 The main principle we used in GD17 when carrying out an economic test is that gas mains should only be laid where there is a reasonable prospect that the initial outlay cost will be paid back in the useful economic period by consumers connecting and burning gas.

3.8 The economic appraisal undertaken for GD17 was based on the following key data and the assumptions set out in Table 3.2.

3.9 The outcome of the analysis was an economic level of average investment per property and an estimate of the average length per property passed associated with that investment.

3.10 The general economic level of infill established for PNGL, will also apply to FE on completion of its infill package which it is carrying over from GD17 and the parameters for new gas mains are shown in Table 3.1. Paragraph 4.19 explains the conversion from the GD17 figure of £359 to the GD23 applicable figures.

GDN	Price Control	Property type	£ per property passed	m per property passed
PNGL	GD17	Existing infill	359 (Dec 2014)	5.16
FE (post 2023)	GD23	General Infill	392 (Av 2020)	5.16
PNGL	GD23	General Infill	394 (Sep 2020)	5.16

Table 3.1: Economic development parameters for new gas mains

Key parameter	Value	Rationale
Economic life	40 years	The depreciation period for gas mains assumed in our financial models.
Economic discount rate	4.3%	Consistent with the return on capital for GD17.
Domestic properties passed	95% for FE 100% for PNGL	Consistent with the property counts identified by the respective GDN's in the detailed assessments of properties passed.
I&C properties passed	5% for FE 0% for PNGL	As above.
Domestic consumption	Average of 461 therms/a for FE Average of 380 therms/a for PNGL	Based on an analysis of consumption by property type linked to a detailed development plan. Consistent with the average therms per property currently reported by the GDN or projected at the end of GD17.
I&C consumption	2000 therms/a	Consistent with our approach at GD14.
Domestic connection rate	Variable	We assumed that 85% of properties will connect to the network in the long run at a rate of 5% per annum of properties passed but not connected. This is generally in line with the long term connection rate that we have seen to date. It is higher than the connection rate assumed for GD14.
Industrial and commercial connection rate	Variable	Connection rate used in GD14 based on PNGL experience of I&C connections.
Asset replacement	20 years	For meters and associated regulators and ancillaries.
Reinforcement	None	No allowance for additional pressure reducing stations or mains reinforcement. Consistent with the general design approach, historical development of the network and the GDN's business plan submissions.
Unit costs	Basket of works unit rates	Consistent with the GD17 capex determination, but excluding the application of real price effects.
Connection incentive	Variable	The relevant profile of connection incentive for each GDN used.
Operational costs	Variable	The analysis makes provision for variable opex associated with connections including asset maintenance, metering costs, repairs and emergencies and rates.
Ratio of I&C tariff to domestic tariff	90%	Based on FE GD14 tariff structure.

Table 3.2: GD17 economics of gas mains – Key parameters

Common approaches – Mains laying incentive and uncertainty mechanisms

Properties passed mechanism

3.11 All GDN's will be subject to a properties passed mechanism to incentivise them to continue to extend the network as proposed in the draft determination.

3.12 In theory a GDN could fail to deliver a single metre of gas mains and not suffer any negative consequences, although we accept there is a general incentive to grow the industry. Therefore the draft determination includes a target number of properties passed and failure to achieve the targeted number of properties passed will result in a penalty of £50 for every property below the target. Passing a larger number of properties than the target will result in a reward of £20 per additional property over the target.

3.13 PNGL does not believe it is appropriate to include a properties passed incentive in relation to its activities in GD23. This is because it is no longer subject to a development plan for the majority of its network, and making gas available to the remaining properties on its network is largely reliant on external factors.

3.14 However, we continue to believe that it remains valid and that it provides a valuable link from the submissions which the GDN's believe are achievable and to the delivery of those submissions in reality.

3.15 The properties passed mechanism remains unchanged from GD17. It will continue to be applied on an annual basis subject to the condition that an annual penalty will not be applied where cumulative performance is ahead of target in that year and an annual reward will not be applied where cumulative performance is behind target in that year. This will ensure that the mechanism will target sustained delivery.

3.16 The properties passed incentive applies to all of the following types of existing properties: owner occupied, NIHE and I&C properties. The target number of properties passed in GD23 for each GDN is shown in Table 3.3.

	2023	2024	2025	2026	2027	2028	GD23 Total
FE	3,106	1,250	1,250	1,250	1,250	1,250	9,356
PNGL	5,129	2,715	2,715	2,715	2,714	2,714	18,702
SGN	2,108	1,926	2,979	3,619	1,106	1,779	13,517

Note 1. Figures may not sum due to rounding.

Table 3.3: Properties Passed Targets for all GDN's

3.17 The properties passed have been derived as follows for each GDN.

3.18 For FE, we have taken the number of new build connections estimated for our draft determination. OO, NIHE, and I&C properties have been taken from Table 4.4a of the business plan. Properties associated with RiverRidge have been discounted. Security of Supply properties have also been discounted as the majority of these projects have been disallowed.

3.19 For PNGL, we have taken the number of new build connections estimated for our draft determination. OO properties have been discounted, as the general economic level of infill allowance has been set at GD17 levels. Greater Belfast Infill, Whitehead Infill, and East Down Infill properties have been taken from Table 4.4a of the business plan.

3.20 For SGN, we have taken the number of new build connections estimated for our draft determination. OO, NIHE, and I&C have been taken from the response to query SGN-004 for the core towns. Readily accessible properties passed have been discounted.

Infill and new build mains uncertainty mechanisms

3.21 In the draft determination we include an allowance for the construction of new mains to extend the gas network to serve both existing properties and new properties. We have adopted different approaches to determining the length per property passed for new build and infill development and for different areas:

- For new build properties we have retained our assessment from GD17 of 9.5m per property passed for all GDN's. FE and PNGL also asked for this length of mains to be retained in their business plan submissions. SGN did not make a submission in respect of new build mains.

- For infill mains we have retained our previous decisions on East Down infill from GD17, and other decisions for PNGL in 2020 and 2018 for Greater Belfast Infill and Whitehead Infill.

3.22 Table 3.4 summarises the length of mains per property passed carried forward from GD17 and our other previous decisions.

GDN	Price Control	Property type	m per property passed
All GDN's	GD23	New Build	9.50
FE (carry over infill)	GD23	Infill	10.30
FE (post 2023)	GD23	General Infill	5.16
PNGL Greater Belfast	GD23	Infill	14.30
PNGL Whitehead	GD23	Infill	9.00
PNGL East Down	GD23	Infill	11.52
PNGL	GD23	General Infill	5.16
SGN	GD23	Infill	11.50

Table 3.4: Economic development parameters for new gas mains for GD17

3.23 The infill mechanism exists to promote both efficient and economic delivery of infill mains.

3.24 We will continue to apply the mechanism to new build and infill separately in GD23. In our view, applying the incentive separately will benefit consumers by ensuring economic delivery in both new build and infill and ensure that efficient delivery costs are revealed which can inform future price controls.

3.25 The infill mechanism for GD23 will be applied on a cumulative basis in the same manner as GD17, except for FE's carry over infill from GD17 for its package of 621 projects, which will roll through 2023 on the same basis as GD17. The mechanism will be applied on a cumulative basis for GD17 and 2023 of GD23 up to the capped length of 10.30m/pp.

Economic project mechanism

3.26 The economic project mechanism remains unchanged from the GD17 determination and is repeated below. It formalises how we will assess and determine capital investment for major new opportunities or requirements which arise during the price control period.

3.27 The business planning process and the determination ensures that each GDN is able to plan and finance the economic development of the network as far as can reasonably be foreseen. The price control is also covered by the uncertainty and incentive mechanisms which afford both the company and consumers protection against change and provide incentives (positive and negative) to drive delivery and reward the company when it out-performs. However, it is possible that new projects will come to light which were not foreseen at the time of the determination, or that have not been approved in our determination. These might be economic or necessary, but they may not be able to be delivered by a prudent operator

within the general uncertainty mechanisms and incentive mechanisms of the price control.

3.28 The economic project mechanism provides a framework whereby a GDN can promote such schemes.

3.29 This mechanism does not apply to the general development of the network to serve domestic and I&C consumers. Each GDN has a general funding and targets under the price control to serve this consumer base and there are uncertainty mechanisms available to allow economic development to take place. Each GDN has broad discretion on how to act under the price control and is expected to use this discretion to promote economic development. As a result, we expect the economic project mechanism to apply to a limited number of major projects only, such as new large I&C connections.

3.30 To limit the application of the mechanism to major changes, we will apply a materiality threshold of £120k of total investment net of contributions and will only consider projects which exceed this value.

3.31 Where the company identifies a project which is new and is either economic or necessary, it should present a business case to the Utility Regulator which sets out:

- Why the scheme does not fall within the scope of the determination or is not adequately covered by the other uncertainty mechanisms or the incentive mechanisms of the determination.

- The driver for the scheme and an explanation as to why the work must be carried out immediately and cannot form part of the next price control.

- A feasibility study setting out the proposed scope of works, the costs and revenues of the scheme, and a cost benefit analysis including a whole life cost analysis. All changes to the existing distribution network should be considered and the GDN should explain which elements of the upgrade it believes should be included in the economic appraisal and how this relates to its connection policy.

- The economic appraisal of the scheme should take full account of consequential benefits such as additional properties passed. In the case of a major new I&C connection, the submission should include a detailed technical assessment of the new load, including both peak and average consumption and evidence of the consumer's commitment to use gas.

- A net present value (NPV) analysis of the project. The company should set out its reasoning for the period over which the NPV analysis is carried out. This should reflect a reasoned assessment of the life of the project and the risks and opportunities associated with a longer or shorter period of analysis. Where there is a shortfall in the NPV calculated for the project, the GDN should set out the arrangements for these costs to be recovered as a contribution in line with the connections policy.

- The adjustments it considers necessary within the current price control and any residual adjustment which should be made in any future price control to allow the GDN to finance the scheme.

3.32 On receipt of such a proposal, the Utility Regulator will:

- Review the proposal to satisfy itself that the scheme does not fall within the scope of the determination, or is not adequately covered by the uncertainty mechanisms or the incentive mechanisms of the determination.

- Assess the scope and costs of the proposed development, including benchmarking capital costs and assessing the potential loads and income generated by the scheme.

- Review the net present value analysis calculations. If necessary, the GDN will be asked to resubmit the net present value analysis and the assessment of any contribution necessary using criteria established by the Utility Regulator to ensure that the general consumer base is not required to subsidise a project which benefits a few consumers disproportionately.

- Following a review of the costs and further engagement with the GDN, make a determination of the adjustments necessary to the price control and the provision to be made in any future price control to finance the scheme.

3.33 The adjustments made to the price control for an economic scheme under this mechanism will include the following:

- Determination of an adjustment to volume targets for a minimum of 6 years, equal to the consumption included in the economic appraisal.

- An adjustment to the capital allowances for the determined capital costs net of any contributions and net of any consequential benefits such as additional properties passed.

- The addition of a nominated output for the delivery of the scheme including a completion date.

3.34 Any scheme which meets the criteria for this mechanism is likely to develop over a period of time. We would expect each GDN to keep us informed of the development of such schemes and engage on the timing and scope of any proposals well in advance of them being made.

Common approaches – Benchmark cost rates for capital expenditure

Introduction

3.35 FE, PNGL, and SGN have relied on tendered contract rates to price the capital works identified in the business plan submissions, subject to reasoned adjustments.

3.36 We adopted three principle approaches to review and challenge the estimates prepared by the GDN's:

- We undertook simple high level benchmarking of costs and activities submitted in the business plans to identify areas where there were material differences between the estimates prepared by the GDN's.

- We undertook a bottom up assessment of detailed information provided by the GDN's to confirm the costing methodologies used and to confirm that the estimates reflected current contract rates.

- We updated and applied the basket of works approach first used in GD14 to determine high level unit rates consistent with historic costs in Northern Ireland, which could then be used to estimate the cost of future work.

3.37 A brief description of each of these assessments is provided below. We have based much of the draft determination on the unit rates derived from analysis of a historical basket of works, with some smaller elements of the programme based on current contract rates or outturn costs.

Comparison of high level unit rates

3.38 As a first step in our assessment of the business plan submissions we calculated average rates for the capital expenditure proposed by each GDN. This information is shown in Table 3.5 along with the outturn rate of the three GDN's for 2017-20. While this simple approach does not account for underlying explanatory factors (for example, size distribution by asset type),

it does provide an indication of material differences in unit costs and areas of focus for our subsequent assessment.

Investment category	Average unit rates for capital investment in GD23 (£)				
	Units	FE	PNGL	SGN	Outturn 2017-20
7 bar mains	£/m		657		
New build mains	£/m	36	56		39
Infill and spine mains	£/m	112	60	92	77
Security of supply mains	£/m	153	146		
Pressure reduction	£/unit	16,847	8,103	73,853	
New build services	£/service	398	714	1,425	456
Existing property services	£/service	1,287	1,098	1,438	912
New domestic credit meters	£/meter	123	141	105	134
New domestic Prepayment meters	£/meter	230	215	239	224
I&C services	£/service	2,662	2,086	3,232	2,224
I&C meters <=U40	£/meter	997	1,379	514	892
I&C meters >U40	£/meter	9,766	13,464	7,275	12,112

Note 1. Figures may not sum due to rounding. Price base Av2020 except PNGL which is Sep 2020.

Table 3.5: High Level Business Plan Capex Unit Rates for GD23

3.39 A key observation from this comparison is that for all the GDN's, the rate for existing property services in the business plan submissions is materially higher than the outturn unit rate. Other business plan rates are generally comparable to the outturn rate for at least one of the GDN's.

Bottom up assessment of detailed information

3.40 To understand how the GDN's developed the estimates for infill gas mains we selected 10 projects for each GDN and asked them to provide the detailed information behind each project. We used this information to review the quantities of work and to understand how the work was costed.

3.41 We were able to confirm that the GDN's had applied its current contract rates to cost the scope of works identified. Other assumptions and adjustments were then made, which are described in general terms below.

3.42 A contractor uplift, in the range 4-6%, was added by all GDN's to account for what they viewed to be a price increase above general inflation.

- FE attributed much of this uplift to an increasing demand in the construction sector which they say will affect labour and material costs. FE supplied a paper from its consultants which estimated construction inflation in the UK to be 3.4% above CPI in the GD23 period.

- PNGL suggested it was mainly due to more sporadic work which will result in lower productivity and higher delivery costs. This was part of a response to query PNGL-041 which detailed a possible increase of 22.73% to its main laying costs. It should be noted that PNGL did not increase its costs by this amount.

- SGN attributed the majority of the rise to quantity, quality and continuity of HDD works, increasing fuel costs, and the removal of tax relief on red diesel.

3.43 FE used its main laying contract rates, added 5% for contractor uplift and an additional 7.42% for main laying capitalised opex in 2023 which increases to 19.86% in 2028.

3.44 PNGL used its main laying contract rates which it adjusted using 2020 outturn costs to increase or decrease costs based on actual performance. It then added 6% for contractor uplift. A constant value of circa £1m/annum was added for capitalised opex for all activity types across the period irrespective of work load, and a share of this was apportioned to main laying activities. A share of the adjustment relating to red diesel tax, which totalled £50k across the price control period, was also added.

3.45 SGN used a complex analysis which started with its main laying rates, then made an adjustment for traffic sensitive roads and a separate adjustment for roads where public realm works were anticipated. It then added 4.01% for contractor uplift. In addition it increased its capitalised opex for main laying activities over the period from 12.76% in 2023 to 21.74% in 2028.

3.46 An adjustment to account for the removal of tax relief on red diesel was applied by both PNGL and SGN. PNGL applied a final adjustment of £50k across the entire capex programme and SGN applied a 0.4% increase included within the general contractor uplift. We have not accounted for this in the draft determination as it is equivalent to a 0.08% increase for PNGL which we consider to be below the resolution of the calculations we used to set the basket of works unit rates.

3.47 The capitalised opex submitted by all the GDN's in their business plans has increased in percentage terms from the outturn costs from 2017-20. We might normally expect that GDN's with a larger workload would demonstrate

a smaller amount of capitalised opex in percentage terms than GDN's with a smaller workload.

3.48 We did not find this to be the case, with SGN capitalised opex running at 5.1%, FE at 7.1% and PNGL at 7.6%. This equates to an average of 7.0% across all the GDN's. The GDN's have argued that as workload decreases then the capitalised opex percentage will increase, as essentially the same capitalised opex value is attributed to a smaller value of work. However, as we have demonstrated, this is not the case, as SGN has the smallest workload and also the smallest percentage for capitalised opex.

3.49 It is our view, on balance, that capitalised opex should be proportional to workload irrespective of its value or type. This is demonstrated in the figure below, which shows capitalised opex by GDN over a four year period, split by workload type.

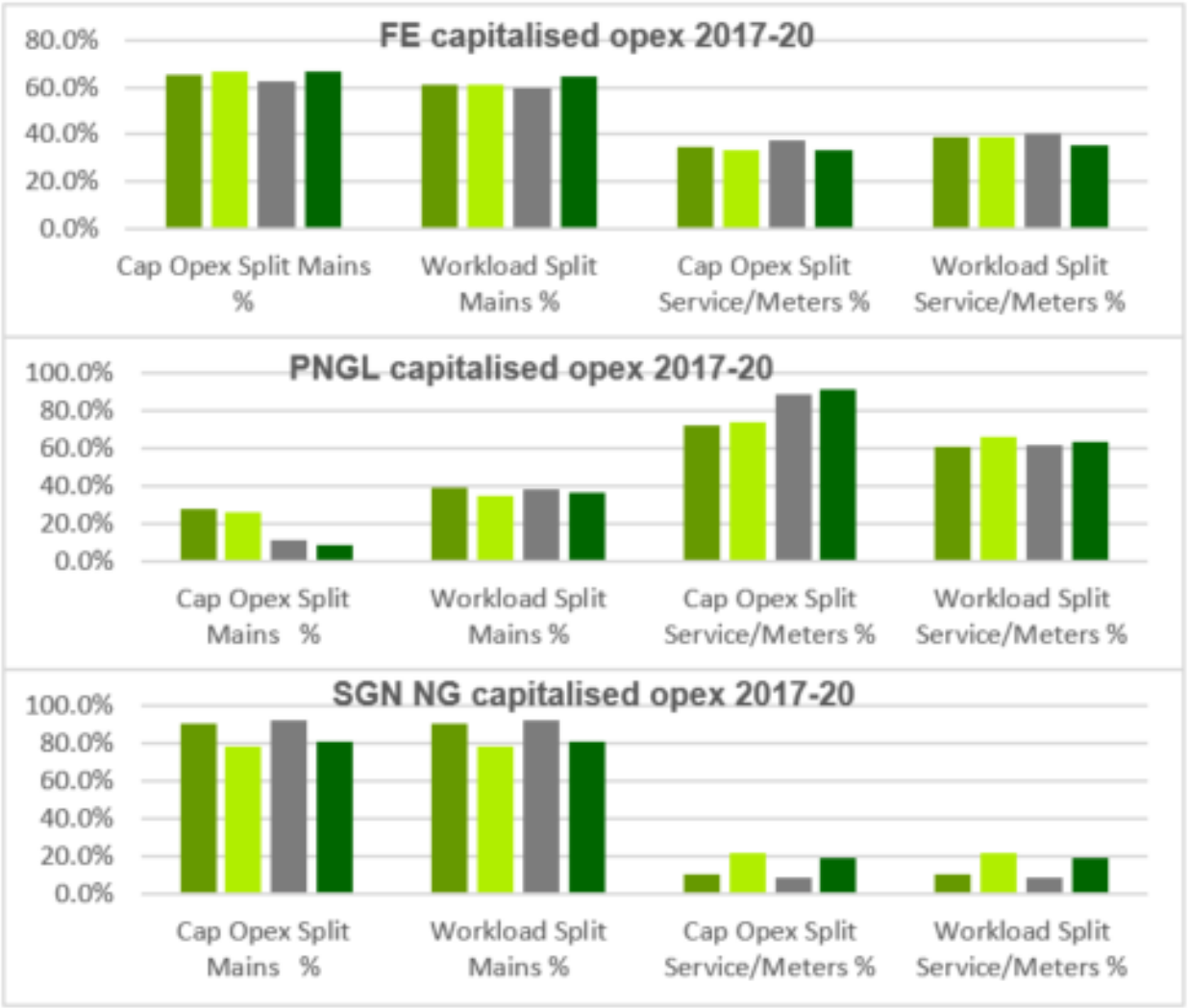


Figure 3.1: Capitalised opex by GDN between 2017 and 2020

3.50 From this figure it can be seen that there is one slight inconsistency, which is in PNGL's data. In 2017 and 2018 the capitalised opex was generally split in line with workload type, i.e. mains and services/meters, whereas in 2019 and 2020 this split has shifted. This was not the case for the other two GDN's.

3.51 FE tends to have slightly more capitalised opex allocated to mains than workload, and PNGL tends to have slightly more allocated to services/meters. SGN's is allocated in line with workload.

3.52 On balance our view is that allocation in line with workload is an appropriate approach.

3.53 To understand how the GDN's developed their estimates for domestic services we asked for detailed information from each GDN and used this to establish how the work was costed.

3.54 We were able to confirm that the GDN's had applied the current contract rates to cost the scope of works identified. Other assumptions and adjustments were then made. These are described in general terms below.

3.55 FE started by using contract rates for a 0-15m service. A further increase of c4.7% was added based on the assumption that every service would be 16m long and attract an additional payment to the contractor. Another 17% was added which was broken down as follows:

- 5% for the general contractor uplift.
- 9% for allocation of contractor overheads.
- 1% for real living wage and staff retention.
- 1% for an engineering materials price increase.
- 1% for average service length and added complexity.

3.56 PNGL used the service period contract rates. It adjusted them using the 2020 outturn costs to increase or decrease costs based on actual performance. It then added 6% for contractor uplift. A share of the circa £1m/annum capitalised opex was apportioned to services and a share of the adjustment for red diesel tax, totalling £50k across the price control period, was added.

3.57 SGN used a complex analysis which started with service rates, then made adjustments for service length, mains pressure, and connections on traffic sensitive roads (Sunday working). It then added 4.17% for contractor uplift. In addition, its capitalised opex for service laying increased over the period

from 12.76% in 2023 to 21.74% in 2028. SGN's contractor uplift of 4.17% was broken down as follows:

- 2.86% for reduced turnover and allocation of overhead.
- 0.20% for training costs.
- 0.4% for red diesel tax relief.
- 0.21% for fuel cost.
- 0.5% for increased number of other services in footpaths.

3.58 One of the factors that the GDN's mention that we are able to test is domestic service length.

3.59 Table 3.6 below shows the average length of domestic services for each GDN for 2017-20. GDN's pay for services based on service length bands and on average no GDN came close to crossing its service length threshold during this period.

Average length (m) 2017-20	FE	PNGL	SGN	Average
Owner occupied	12.8	11.8	13.2	12.2
Housing executive	10.6	10.0	13.6	10.5
Housing association	9.6	7.7	8.9	8.7

Table 3.6: Average domestic service length 2017-20

3.60 The proportion of OO services with a service length over 15m increased for the GDN's in 2020 compared to the four year averages, as shown in Table 3.7 below.

Service length (>15m) %	FE	PNGL	SGN
Average 2017-20	31%	27%	29%
2020	36%	28%	60%
2020 number of OO services	2,600	5,080	410

Table 3.7: Average percentage of services longer than 15m

3.61 The proportion for FE and PNGL did not increase markedly and this increase in length is captured within the basket of works analysis

3.62 SGN's proportion shows a larger increase, but it is difficult to draw any conclusion from this as the number of services is very low compared to other GDN's and a relatively small change in the number of long services can give rise to a large change in percentage terms. We would expect SGN's figures

to fall back into line with other GDN's as its development of the network continues.

3.63 With regard to the other increases, the allocation of contractor overheads is a common theme. It is not clear to us why a contractor would not allocate its overheads in line with its costs. GDN's mention cross subsidisation from mains to services by the contractor, but this can't be demonstrated, and is contradicted in other submissions; for example in paper FE 25, FE states that the guarantee of an extensive main laying programme resulted in favourable rates for the GD17 period. This would not indicate any subsidisation of services by main laying activities.

3.64 We note that FE appears to have duplicated some increases in its figures. The real living wage and engineering materials increases are also included in the general contractor uplift. The 1% increase for average service length is also allowed for in FE's build-up of service cost, where every service has an additional 1m length added.

3.65 PNGL provided information which shows a possible increase in costs of 16.23% for services. The majority of this increase (11%) was attributed to the allocation of contractor overheads. As with main laying activities, PNGL added 6% for contractor uplift.

3.66 Some other increases supplied by the contractor to FE and PNGL are similar to the cost pressures that SGN reference.

3.67 For SGN these are labour costs, training costs, red diesel tax relief, additional Sunday works, and an increased number of other utility services in footpaths, which will slow progress.

3.68 It appears that each GDN has selected the reasons for cost increases from a list that the contractor they use has provided before coming to values which lie in the range 4-6%. Our draft determination assumes that these impacts are either short term and/or reflected in general inflation. As a result, we have maintained our approach to Real Price Effects (RPEs) which reflect the long term differential between our general measure of inflation and the long term inflation of the costs of capital works undertaken by the GDNs and have not applied these uplifts in our draft determination.

3.69 Table 3.8 shows the overall price increases for the GDN's proposed GD23 activities when priced using the GD23 business plan unit rates compared to the 2017-20 outturn unit rates.

	FE	PNGL	SGN
Increase in proposed costs from outturn to GD23 business plan	22.6%	12.7%	29.4%

Table 3.8: Increase of costs in proposed GD23 activities

3.70 It can be seen that the business plan proposals are not reflective of past experience. Consequently, we have relied heavily on the basket of works approach described below when setting unit rates for the GD23 price control.

Basket of works

3.71 The bottom up approach adopted by the GDN's could provide a reasonable estimate of costs, if it fully reflected the decisions made and the opportunities available in delivery. However, the approach carries a number of risks to consumers which we must seek to address in our determination:

- The development of bottom up scopes of works and estimates might not truly reflect efficient design choices, cost allocations or opportunities for cost saving in delivery.
- Bottom up estimates might not adequately reflect or may over estimate site specifics such as disruption and standing time, difficult ground conditions or restrictions on access, traffic management and the need for weekend working.
- Bottom up estimates might not adequately reflect general items such as management costs.
- The application of contract rates might not adequately reflect performance against commercial terms such as pain-gain payments.
- Using tendered rates to price a determination assumes that a particular procurement process is efficient and that tendered rates should be passed through to consumers.
- The application of current contract rates by each GDN foregoes the opportunity for benchmarking to identify efficient capital expenditure.

3.72 To address these issues, we have applied and adapted the basket of works approach first used in GD14 and then again in GD17.

3.73 The basket of works approach used in GD14 built on principles which were adopted by Ofgem in GDPRC1 and RIIO-GD1 price controls. The basket of works summarises total historical capex into broad categories of work with high level cost drivers such as length of mains or number of connections. Unit rates for the basket of works are calculated by dividing the total

historical cost by the historical number of units for the cost driver. The application of this approach continued in GD17.

3.74 For GD23, we have updated our approach to the basket of works to reflect both improving historical cost information and the balance of unit rates in Northern Ireland. The main changes made are as follows:

- We analysed historical costs for the four year period 2017 to 2020. The duration is the same as that used in GD17. This reduces the impact of year on year changes in the balance of work undertaken and the potential impact of accruals between years.

- For GD23, we have based our analysis on the combined costs of FE, PNGL, and SGN. Combining costs in this way provides a broader cost base and comparative benchmark which takes account of all costs incurred in the period.

- Further work has been undertaken to align the relative level of unit costs with local experience of all-in costs or tendered rates. In general we retained the GD17 rates profile for each category of rates with the exception of replacement meters, where the GD17 profile did not align with local experience. We then adjusted the package of rates for each category in the basket of works to reflect historical costs. As a result, unit rates have generally reduced. Where the GD23 unit rate is less than the GD17 rate we have taken the average of the two. If the GD23 unit rate is higher than the GD17 unit rate we have used the GD23 rate. This has built in a small margin which will benefit the GDN's in GD23 and provides a glide path towards actual outturn rates.

- New rates have been created for the replacement of large meter cabinets and rigs reaching 30 years of service by PNGL. This is the first time they will have undertaken this type of work at their meter installations. These rates were created by applying an adjustment for general historic outperformance over the business plan submission, as shown in Table 3.8, to the information submitted by PNGL in PNGL-078. No rates exist for smaller I&C meters (U6-U40) as these are not getting replaced at this time.

3.75 The outcome of this analysis is a set of unit rates which can be applied to the same high level categories of work and cost drivers in the future, to determine an efficient overall capex allowance which is reflective of historical costs. The resulting basket of works unit rates for GD23 are shown below:

Activity	Unit rate	Activity	Unit rate
Mains new build 32mm	41	I&C meter - U160	9,962
Mains new build 50mm	43	I&C meter - U250	14,216
Mains new build 63mm	45	I&C meter - U400	21,461
Mains new build 75mm	47	I&C meter - U650	31,679
Mains new build 90mm	50	I&C meter - U1000	45,554
Mains new build 125mm	58	I&C meter - U1600	67,645
Mains new build 180mm	72	I&C meter - >=U2500	85,029
Mains new build 200mm	78	I&C U6 - Replacement end of life	140
Mains new build 250mm	95	I&C U16 - Replacement end of life	604
Mains new build 315mm	121	I&C U25 - Replacement end of life	649
Mains new build 355mm	140	I&C U40 - Replacement end of life	722
Mains new build 400mm	162	I&C U65 - Replacement End of Life	842
Mains new build 450mm	190	I&C U100 - Replacement E of L	1,004
Mains new build 600mm	290	I&C U160 - Replacement E of L	1,266
Mains feeder/infill 32mm	68	I&C U250 - Replacement E of L	1,626
Mains feeder/infill 50mm	70	I&C U400 - Replacement E of L	2,139
Mains feeder/infill 63mm	72	I&C U650 - Replacement E of L	2,780
Mains feeder/infill 75mm	75	I&C U1000 - Replacement E of L	3,313
Mains feeder/infill 90mm	79	I&C U1600 - Replacement E of L	3,587
Mains feeder/infill 125mm	89	I&C U2500 - Replacement E of L	3,787
Mains feeder/infill 180mm	112	I&C U6 - Replacement other	140
Mains feeder/infill 200mm	121	I&C U16 - Replacement other	604
Mains feeder/infill 250mm	150	I&C U25 - Replacement other	649
Mains feeder/infill 315mm	205	I&C U40 - Replacement other	722
Mains feeder/infill 355mm	234	I&C U65 - Replacement other	842
Mains feeder/infill 400mm	268	I&C U100 - Replacement other	1,004
Mains feeder/infill 450mm	309	I&C U160 - Replacement other	1,266
Mains feeder/infill 600mm	437	I&C U250 - Replacement other	1,626
Domestic services existing	957	I&C U400 - Replacement other	2,139
Domestic services new build	456	I&C U650 - Replacement other	2,780
I&C service very small (U6)	1,450	I&C U1000 - Replacement other	3,313
I&C service small (U16-U40)	2,282	I&C U1600 - Replacement other	3,587
I&C service medium (U65-U160)	4,508	I&C U2500 - Replacement other	3,787
I&C service large (U250-U650)	8,950	I&C U6 - Replace installation E of L	
I&C service very large (>U650)	13,647	I&C U16 - Replace installation E of L	

Activity	Unit rate	Activity	Unit rate
Domestic meter - Credit	144	I&C U25 - Replace installation E of L	
Domestic meter - Credit - replace E of L	144	I&C U40 - Replace installation E of L	
Domestic meter - Credit - replace other	144	I&C U65 - Replace installation E of L	2,503
Domestic meter - PAYG	228	I&C U100 - Replace install E of L	3,195
Domestic meter - PAYG - replace E of L	228	I&C U160 - Replace install E of L	4,381
Domestic meter - PAYG - replace other	228	I&C U250 - Replace install E of L	4,205
I&C meter - U6	144	I&C U400 - Replace install E of L	9,651
I&C meter - U16	1,505	I&C U650 - Replace install E of L	10,741
I&C meter - U25	2,060	I&C U1000 - Replace install E of L	10,886
I&C meter - U40	2,202	I&C U1600 - Replace install E of L	17,682
I&C meter - U65	5,078	I&C U2500 - Replace install E of L	27,311
I&C meter - U100	6,947	I&C U4000 - Replace install E of L	44,938

Note 1. Price base is average 2020. To convert into Sept 2020 prices multiply by 1.0041.

Table 3.9: GD23 basket of works unit rates

3.76 Subject to GDN's agreement to share data, additional supporting information on the calculation of the unit rates will be provided to the GDN's to help inform their responses to the draft determination. As part of their overall response to the draft determination we ask that the GDN's:

- Comment on any errors in the data used or proposals made in the allocation of costs and activities.
- Identify any further disaggregation of the basket of works which would improve the analysis and explain the rationale for this, providing any additional data necessary to support additional disaggregation.
- Identify and explain any improvements in the ratios between the rates which would better reflect actual cost rates, recognising that a change in one rate will prompt a balancing change in other rates.
- Identify and quantify any company specific factors which should be considered in the application of the rates and, where appropriate, explain how these special factors were included in the historical capital investment used to develop the basket of works.
- Identify any areas where historical costs or activities might not adequately reflect future costs and activities and quantify the impact this would have on the company's estimated future costs.

3.77 We will consider the GDN's responses to the basket of works and make adjustments to the basket of works in the final determination where we consider this appropriate.

Common approaches – Street works legislation

3.78 In Great Britain, there are two main pieces of legislation which set out the rules and regulations that apply whenever utilities or similar organisations undertake capital works in public roads. They are the Traffic Management Act (TMA) and the New Roads and Street Works Act (NRSWA). Equivalent legislation has not yet been implemented in Northern Ireland, but it is possible that the Assembly might proceed with implementation in due course. The terms and the timing of any such future legislation and the impact it would have on the costs incurred by GDN's remains uncertain.

3.79 In light of this on-going uncertainty, we have continued the approach to TMA costs adopted in GD14 and GD17:

- We have made a provision in the draft determination of 10% of the cost of mains and services against future TMA costs which are reflected in the determination of tariffs. SGN included 5% in the submission; we have adjusted it accordingly.

- We will make a retrospective adjustment at the time of the next price control to reflect the actual level of expenditure related to the implementation of traffic management legislation. This adjustment will take account of the impact on return on capital associated with any reduced or increased costs.

3.80 This approach allows for the implementation of legislation during the course of the price control without a material impact on tariffs and provides a symmetrical protection to both the GDN's and consumers against this future uncertainty.

Common approaches – Capex real price effects and frontier shift

3.81 We have applied a frontier shift to capital investment in GD23 to reflect movements in capital expenditure input costs relative to CPIH and the on-going efficiency gains attributable to productivity improvements. We have not applied a frontier shift to our projection of costs beyond GD23.

3.82 We have assessed particular elements of cost, drawing on our previous experience and current regulatory practice.

3.83 The price of a company's various inputs may differ over time. GD23 has been indexed by the Consumer Prices Index including Owner Occupiers' Housing (CPIH) to account for broad changes in prices. This is a change from GD17 where RPI was used as the inflation index. Being a measure of general inflation, not all types of cost changes will be reflected in the range of prices used to calculate CPIH. To account for this it is common practice to calculate and make adjustments for the difference, either positive or negative, between particular input price changes for a company or industry and the CPIH measure of inflation. This is described as real price effects (RPE's).

3.84 The concept of frontier shift is wider than simple productivity assumptions. Within this determination, the UR has continued with the methodology applied in the GD17 determination, but with the new inflation factor. This process combines nominal input price forecasts with productivity expectations and CPIH inflation:

Frontier shift in real terms = input price increase minus

forecast CPIH (inflation) minus

productivity increase

3.85 A further detailed explanation of the precise make up of our overall RPEs and assumed productivity increase is contained in Annex E – Frontier Shift.

3.86 The calculation of the frontier shift for capital expenditure is summarised in Table 3.10 below.

	2023	2024	2025	2026	2027	2028
Frontier shift (cumulative %)	0.990	0.981	0.978	0.980	0.981	0.982

Table 3.10: Frontier shift for capex

Common approaches – Customer contributions

3.87 We have made a final adjustment to the capital expenditure to account for customer contributions for each of the GDN's.

3.88 Our analysis of the basket of works and the business plan submissions was completed using gross costs reflecting the true cost of completing the various work streams.

3.89 PNGL included an estimate of customer contributions in its business plan. FE and SGN did not.

3.90 We averaged each GDN's customer contributions individually over the 2017-20 period and applied them as a percentage reduction to the GDN. Each GDN's customer contributions adjustment is shown in the table below.

	FE	PNGL	SGN
Customer contributions adjustment	-1.91%	-2.78%	-0.02%

Table 3.11: Customer contribution adjustment for GD23

4. General Approach by Investment Categories

General approach – 7 bar mains

4.1 We have assessed the need for 7 bar mains on a project by project basis. Only PNGL have made a submission in this category.

General approach – LP, 2 bar or 4 bar mains

Resilience mains

4.2 Firmus energy and PNGL have submitted capital funding to improve the resilience of the gas distribution networks. FE included £3.6m for 27.8km of mains and PNGL included £3.8m for 33.3km of mains. A resilience scheme is generally one which creates a loop in the network which allows properties to be supplied from more than one direction if a gas main is cut. In some other cases it involves the duplication of a strategic main. The companies have suggested setting up a Resilience Working Group to address the issue of resilience.

4.3 SGN has not included any resilience projects in GD23. However, it has suggested two major resilience projects for GD29. These are an Omagh to Strabane link main of c27km and the partial duplication of the pipeline from outside Dungannon to Cookstown with an additional c13km of main.

4.4 GDN's should consider resilience when developing and laying out their network. Section 9.4 of IGEM/GL/1 Ed 2 states:

"When planning a system, consideration should be given to the security of the supply of the system (with regard to the maintenance of the transportation capacity), having regard to the probability of damage to, or breakdown of, any individual component within the system and the likely consequences of such an occurrence".

4.5 Appendix A3.2 of IGEM/GL/1 Ed 2 states:

"System planners need to be aware of the events that could adversely affect the gas supply. Where reasonably practicable, measures to prevent or mitigate such events are required. For example, rather than having a flow of gas in one direction that could lead to the disconnection of consumers downstream in the event of a pipe breakdown, the system could be constructed such that gas is routed in more than one direction so that gas

continues to flow to both sides or, and up to, the isolation points of a pipe failure."

4.6 If GDN's consider that resilience is necessary and it is reasonably practicable to provide, then they should incorporate it into the design and construction of the networks in accordance with the relevant regulations and guidance.

4.7 Both PNGL (Business Plan commentary section 3.2., Ensuring a safe and reliable supply of gas) and SGN (Reinforcement Security section 3.1.3, Distribution Network) indicate that the distribution networks have been designed, where possible, with security of supply in mind. We assume that this is also the case for FE.

4.8 We note that the indicative proposals put forward by SGN were not identified by the company as necessary when the Gas to the West project was delivered, nor by consultants when the Gas to the West network was developed. PNGL also did not suggest duplicating any of the spine mains into East Down when this scheme was developed. Likewise, the entirety of the FE sub-networks are generally fed from single pipelines from the various AGIs.

4.9 In addition the Northern Ireland networks all have inherent amounts of vulnerability which has been and continues to be mitigated by other measures.

4.10 The UR position is therefore that the GDN's should have provided resilience where reasonably practicable in the original economic layout of the network and that any further work necessary should be completed within the current price control mechanisms.

4.11 We have therefore not approved any additional allowances for resilience projects in the draft determination and note that the uncertainty mechanism provides flexibility to GDN's to construct additional mains as necessary.

Reinforcement mains

4.12 We have assessed the need for reinforcement mains on a project by project basis.

Spine and infill mains

4.13 All of the GDN's intend to complete the infill of their existing areas in the GD23 period. FE and PNGL will have substantially completed their infill in 2023 and SGN will complete its infill by the end of the price control period.

4.14 In GD17 we identified an economic package of infill for FE of 66,817 properties passed at a length per property passed of 10.30m. FE are forecasting laying 34.7km of main and passing 1,856 properties in GD23 at a length of 18.7m per property passed. This is due to the choices FE has made in the phasing of the rollout of its network. This contrasts with the outturn for the first four years of GD17, where FE averaged 10.50m per property passed.

4.15 In section 7.170 of our GD17 determination we advised that we would not undertake a new economic assessment of this infill in GD23. This was to ensure that the company could deliver the work in the most economic manner without any concern over the marginal economic viability of any work left to be completed in GD23.

4.16 In line with this commitment, we are carrying over the GD17 determination into the first year of the GD23 price control period to enable FE to complete the infill on the same terms as GD17. This was 10.30m per property passed at £67.76/m (Dec 2014 prices) which equates to £77.13/m (Av 2020 prices).

4.17 The uncertainty mechanism for this infill will also roll through 2023 on the same basis as GD17 (see GD17 Table 178). This means that the output is based on the actual number of properties passed, the annual average number of metres of infill laid per property passed up to a cap of 10.30m and a determined unit rate of £77.13/m (Av 2020 prices). This will be applied on a cumulative basis for GD17 and 2023.

4.18 PNGL asked for a general allowance covering 900 properties on the same basis as our Greater Belfast Infill decision. As we have not repeated our economic assessment and the economics are unlikely to have improved, we will continue to apply our decision from GD17.

4.19 Following the completion of the remaining infill in 2023, both FE and PNGL will revert to the general economic parameters established in GD17 for existing infill (see GD17 Table 102). This was £359 per property passed (Dec 2014 prices) at 5.16m per property as shown in Table 3.1 above, which equates to £69.57/m (Dec 2014 prices). This was the source of the figure of £66.81/m (Dec 2014 prices) given in Table 114 of the GD17 determination which has GD17 frontier shift applied and takes account of the specific proportions of mains. This equates to £76.05/m (Av2020 prices) or £76.36/m (Sept 2020 prices).

4.20 PNGL asked that we roll forward our previous decisions on Greater Belfast Infill, Whitehead Infill, and East Down Infill, which were submitted as Individually Funded projects. These projects are discussed further,

beginning at paragraph 4.29, and we have accepted PNGL's request to roll forward these decisions.

4.21 The same approach has been applied to the SGN Core Towns. BoW rates established in GD17 for previously approved infill will therefore roll through the GD23 period to give SGN the flexibility to prioritise its programme of works appropriately and ensure SGN is not disadvantaged compared to the other GDN's.

4.22 The infill rates for each GDN are shown in Table 4.1 prior to the application of the GD23 frontier shift.

GDN	GD23 DD m/pp	Average rate for spine and infill (£/m)		
		Business Plan	GD17 FD (Dec 2014)	GD23 DD
FE 2023 Infill	10.30	111.97	67.76	77.13
FE general Infill (Av 2020)	5.16		66.81	76.05
PNGL general Infill (Sep 2020)	5.16	59.66	66.81	76.36
SGN (Av 2020)	11.50	92.16		
SGN - mains up to 90mm			67.06	76.33
SGN - >90mm up to 200mm			89.64	102.03
SGN - >200mm			160.61	182.81

Note 1. Draft determination figures pre frontier shift.

Table 4.1: Average rates for spine and Infill mains

4.23 In its submission, SGN asked that we move away from blended rates as it feels that it was disadvantaged by this in GD17. We have decided not to do so. The business plan submissions should be reflective of what will be constructed during the price control period, and if this is the case, the effect of the blending of rates is minimal. The uncertainty mechanism provides the opportunity for GDN's to change the priorities for planned work if necessary as a consequence of circumstances changing during the price control.

4.24 SGN's proposals to infill the readily accessible towns have not been allowed at this time. SGN's economic appraisal of these towns demonstrated that they did not meet our economic test as a group (i.e. that the investment would not increase tariffs) and so we have removed this investment from the draft determination. We are open to reconsidering this infill in the future if circumstances change.

New build mains

4.25 In the GDN's business plans both FE and PNGL asked that we retain the 9.5m per property passed for new build properties that was established in GD17. SGN did not submit any length or costs for new build mains.

4.26 We have accepted this proposal and applied the lengths submitted by the GDN's to the GD23 basket of works unit rates to estimate an allowance for new build mains for FE and PNGL. As SGN did not submit any proposals for new build mains and have minimal outturn costs for 2017-20 we have carried forward the GD17 determined unit rate adjusted for inflation.

4.27 The table below shows the difference between the average rates requested for new build mains and the average unit rates allowed in the draft determination.

GDN	Average rate for new build (£/m)	
	Business Plan	GD23 DD
FE (Ave 2020)	35.51	45.39
PNGL (Sep 2020)	55.52	46.66
SGN (Ave 2020)	00.00	53.59

Note 1. Draft determination figures pre frontier shift.

Table 4.2: Average rates for new build mains

Replacement mains

4.28 We have made no allowance for replacement mains in the determination. We have assumed that the costs of any 3rd party requirement to relocate mains or repair mains will be balanced by the customer contributions received and there will be no net cost to consumers.

General approach – Individually funded

4.29 We have assessed the need for Individually Funded schemes on a project by project basis.

4.30 We have transferred FE's project for RiverRidge from Spine and Infill mains to Individually Funded and this is discussed further in Chapter 5.

4.31 PNGL submitted its infill proposals for Greater Belfast infill, Whitehead infill, and East Down infill as Individually Funded projects. These three projects were subject to UR determinations in 2020, 2018 and GD17 respectively.

4.32 PNGL proposed to roll forward these decisions into the GD23 price control. We have accepted this approach for the draft determination. The adjusted unit rates are given in Table 4.3.

GDN	m/pp	Average rate for spine and infill (£/m)		
		Business Plan (Sep 2020)	Previous Determination	GD23 DD (Sep 2020)
PNGL - Greater Belfast Infill	14.30	59.66	52.18	59.64
PNGL - Whitehead Infill	9.00	77.41	67.76	77.41
PNGL - East Down Infill	11.52	81.82	71.59	81.82

Note 1. Draft determination figures pre frontier shift.

Table 4.3: Average rates for Belfast, Whitehead, and East Down Infill mains

General approach – Pressure reduction

Pressure reducing stations (PRS) – Growth and reinforcement

4.33 We have reviewed the forecast activity volumes and costs associated with the construction of new PRS installations for FE and PNGL which are generally minimal. We have granted allowances for additional PRSs based on the GDN's current trends in the years 2017-20. We have applied the business plan rates of the respective GDN's to cost this work.

4.34 We have challenged the number of PRS installations proposed by SGN in its business plan. In GD17 SGN proposed installing 315 PRS and our determination provided for 87. In the first four year of GD17 SGN has installed 2 PRSs. Full funding therefore exists in the current price control to install a further 85 PRSs.

4.35 SNG NG propose installing a further 25 PRSs in the core towns during GD23. If SGN choose not to install the PRSs provided for in GD17 until GD23, then it is not reasonable to ask consumers to pay for the installation of these PRSs a second time. We have not included any allowances for growth PRSs in the core towns in GD23.

4.36 Even if SGN choose not to install any further PRSs in the GD17 period then the Capex Risk Sharing mechanism will still ensure enough funding is provided. This ensures that neither SGN nor consumers are disadvantaged by the choices that the GDN can make.

4.37 In GD23 SGN also proposed installing 13 PRSs in readily accessible towns, which we have not allowed at this time in line with our decision not to infill these areas, as set out in paragraph 4.24.

Pressure reducing stations – Replacement

4.38 FE has included end-of-life replacement of PRS installations and growth replacement of PRS installations in its submission. PNGL included end-of-life replacement of PRS installations which will reach 20 years of age in GD23. SGN have no replacement PRSs in its business plan.

4.39 We have generally used the unit rates in the business plans as they are broadly in line with the outturn rates from 2017-2020. Further detail is provided under each GDN's individual assessment.

4.40 In the GD17 determination we stated that there was an opportunity for the GDN's to investigate options for partial replacement of plant and equipment to prolong the life of these installations without wholesale replacement of chambers, covers and pipework. We expected the GDN's to investigate these opportunities for application in GD23 and to be in a position to demonstrate that they had optimised the balance of maintenance and plant replacement.

4.41 PNGL has demonstrated some savings in replacement costs for PRSs compared to new PRS installations in its unit rates. FE have been less successful in this respect and at a summary level their rates for growth and replacement PRSs are similar.

General approach – Domestic services

4.42 We used basket of works unit rates to estimate allowances for domestic services at each new connection. No allowance has been made for replacement domestic services. The unit rates for new domestic services distinguish between services on new developments and services to existing domestic properties.

General approach – Domestic meters

Domestic meters – Growth

4.43 We used basket of works unit rates to estimate allowances for domestic meters at each new connection. The basket of works unit rates has individual unit rates for credit and PAYG domestic meters which is a change from GD17 where a blended unit rate was used.

Domestic meters – Other replacement

4.44 We used basket of works unit rates to estimate allowances for domestic meters replaced for other reasons. The basket of works has individual unit

rates for credit and PAYG replacement domestic meters which is a change from GD17 where a blended unit rate was used.

Domestic meters – End-of-life replacement

4.45 FE and PNGL included the costs of end-of-life replacement of domestic meters which have been in use for 20 years in their business plans. SGN have no end-of-life replacement meters at this point of time due to the stage of their network development.

4.46 FE has separated the cost of replacing the meter from other costs in Tables 4.12a Domestic Replacement - Life Expired and 4.12b Meter Regulator & Meter Installation Replacement - Life Expired of the business plan submission. PNGL previously combined these costs in Table 4.12a and therefore our basket of works combines these costs. This aligns with our guidance which includes the regulator cost in the cost of the meter. We have therefore discounted the values in Table 4.12b and rolled all allowances into Table 4.12a.

4.47 FE has estimated that 15% of meter cabinets will need replaced at the same time as these meters. PNGL are starting meter cabinet replacement at 30 years for large I&C installations only, and not at all for domestic meters. Our basket of works is inclusive of all the actual costs reported by GDN's. Any specific work required for each individual replacement is therefore already included in the actual costs and reflected in the GD23 unit rates.

4.48 We used the basket of works unit rates to estimate allowances for end-of-life replacement meters. The basket of works has individual unit rates for credit and PAYG replacement meters which is a change from GD17 where a blended unit rate was used.

General approach – Industrial and commercial services

4.49 We used the basket of works unit rates to estimate allowances for new I&C services. No allowance has been made for replacement I&C services.

General approach – Industrial and commercial meters

Industrial and commercial meters – Growth

4.50 We used basket of works unit rates to estimate an allowance for I&C meters for each new connection.

Industrial and commercial meters – Other replacement

4.51 We used basket of works unit rates to estimate allowances for replacement I&C meters for other reasons.

Industrial and commercial meters – End-of-life replacement

4.52 FE and PNGL included the costs of end-of-life replacement of I&C meters which have been in use for 20 years in their business plans. SGN have no end-of-life replacement meters at this point due to the stage of their network development.

4.53 We used basket of works unit rates to estimate allowances for replacement I&C meters.

Industrial and commercial meters – End-of-life meter governor and meter installation replacement

4.54 PNGL introduced a new work stream in its GD23 business plan for replacing large (U65+) meter cabinets and rigs after they have been in service for 30 years.

4.55 In GD17 PNGL included costs in its business plan for end-of-life replacement of all I&C meters which had been in use for 20 years. In GD17 we concluded that the final determination should include an allowance based on:

- End of life replacement at 20 years for I&C meters less than U65.
- End of life replacement at 20 years for I&C meters U65 and larger based on replacement of the meter but retention of the remainder of the meter rig installation.

4.56 As PNGL have achieved a further 10 years of life from large I&C meter cabinets and rigs we have included allowances in the draft determination. PNGL used a combination of rates suggested by its contractor up to U1000, and made an assumption for the remaining sizes.

4.57 We have received no supporting evidence for the rates. As a result we have taken a more holistic view on these rates. Our analysis of the basket of works indicated that the overall costs submitted by PNGL in its business plan were on average 12.7% higher than PNGL's outturn costs from 2017-20. This work relates to a relatively small number of meters, so for the draft determination we have reduced the unit rates supplied by 12.7%. We would welcome any further evidence PNGL can supply in its response to the draft determination to support its submitted unit rates.

4.58 PNGL also included a new work stream to install retrofit kits on LP regulators (U65+) reaching 20 years in service. It advised that this was as a result of regulator obsolescence in the response to a query.

4.59 We have not included any allowance for this work stream in the draft determination. It is still not clear to us why this is not covered in the allowances provided in GD17, where all large I&C meters including the regulator could be replaced. We would ask PNGL to provide a further explanation of the reasons for this work and the unit costs for this work in its response to the draft determination.

General approach – Other capex

4.60 For the draft determination, we have reviewed each item of expenditure proposed by the GDN's on an individual basis.

General approach – Traffic management act

4.61 Our overall approach to possible future implementation of additional traffic management legislation in Northern Ireland is set out at paragraph 3.78 above and is summarised below:

- We have made a provision in the determination of 10% of the cost of mains and services against future TMA costs which is reflected in the determination of tariffs.

- We will make a retrospective adjustment at the time of the next price control to reflect the actual level of expenditure related to the implementation of traffic management legislation. This adjustment will take account of the impact on return on capital associated with any reduced or increased costs.

4.62 SGN allocated 5% to TMA in its business plan and suggested that the remaining 5% normally allocated to TMA be allocated to innovation projects instead. We have decided not to do this and to continue with the established approach. We have adjusted the SGN submission accordingly.

5. FE – UR Proposals

FE – Overview

5.1 FE's business plan included capital investment of £75.8m for the GD23 price control period in average 2020 prices. The draft determination provides for capital investment of £48.6m following the application of the frontier shift net of customer contributions.

5.2 All figures in this chapter are gross figures, i.e. before the application of frontier shift or adjustments for customer contributions, unless otherwise stated. Prices are average 2020 unless otherwise stated.

5.3 The figure below summarises our decisions in reaching our draft determination for GD23.

5.4 In the figure, and elsewhere in this chapter, additions relate to expenditure for either a business plan omission or a transfer of expenditure from another category. Deductions relate to a transfer of expenditure to another category and exclusions relate to expenditure that has not been approved either in principle or due to an adjustment of units.

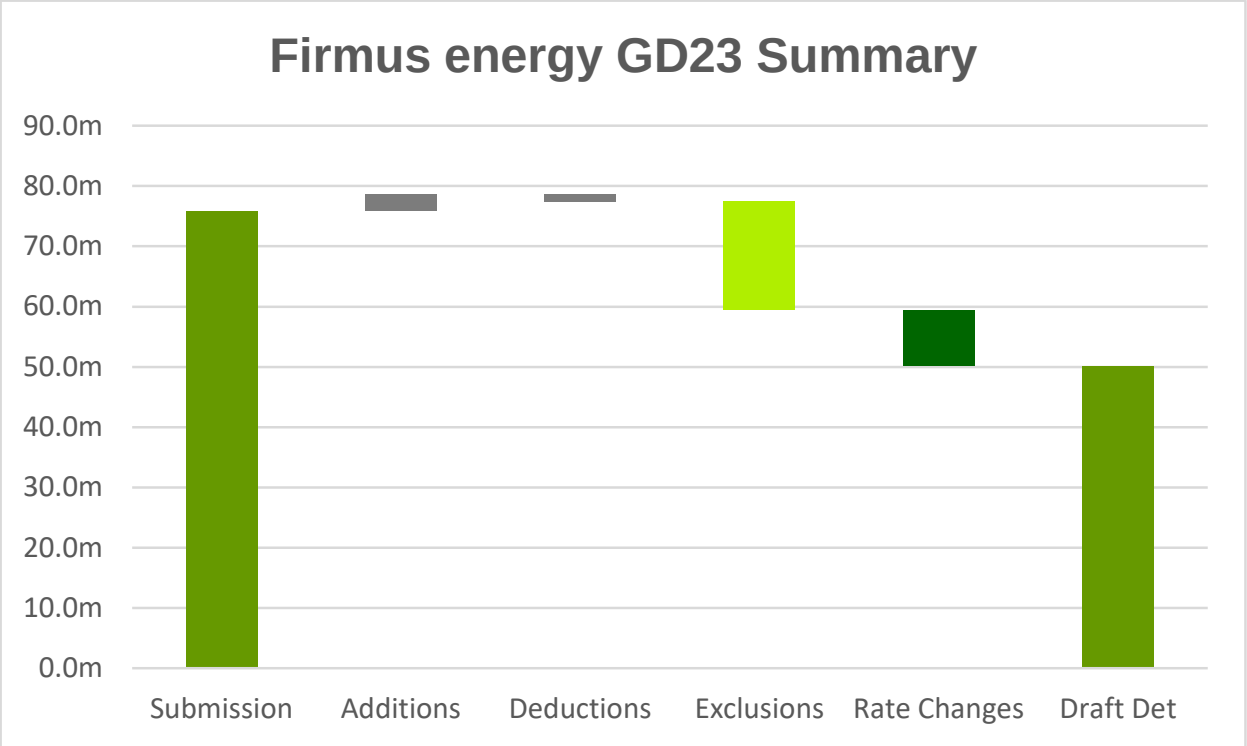


Figure 5.1: GD23 draft determination summary

5.5 The table below summarises the business plan proposals for the GD23 price control period and our draft determination for GD23.

Investment category	Sub	Adj sub	Excl	Rates change	Rates change	DD
7 Bar Mains	0.0	0.0	0.0	0.0	0%	0.0
LP, 2Bar or 4Bar Mains	16.0	15.8	-8.4	-1.0	-13%	6.4
Individually Funded	0.0	1.2	-1.2	0.0	0%	0.0
Pressure Reduction	1.1	1.4	-0.7	0.0	2%	0.6
Domestic Services	38.0	38.0	-3.8	-7.6	-22%	26.6
Domestic Meters	8.6	8.6	-1.1	0.6	8%	8.2
I&C Services	2.3	2.3	0.0	-0.4	-18%	1.9
I&C Meters	2.7	3.1	-0.7	-0.3	-14%	2.1
Other Capex	1.5	1.5	0.0	-0.3	-18%	1.2
TMA	5.6	5.6	-2.1	0.0	0%	3.5
Total	75.8	77.4	-18.0	-9.0	-15%	50.5
Total (post FS, net of contributions)						48.6

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.1: GD23 draft determination summary

5.6 Detailed information on the assessment of the business plan is provided in the subsequent sections.

FE – Detailed assessment

FE – 7 bar mains

5.7 FE does not plan to lay any 7 bar mains during the GD23 price control period.

FE – Low and medium pressure mains

5.8 The figure below summarises our decisions in reaching our draft determination for low and medium pressure mains. Further detail is provided in subsequent sections.

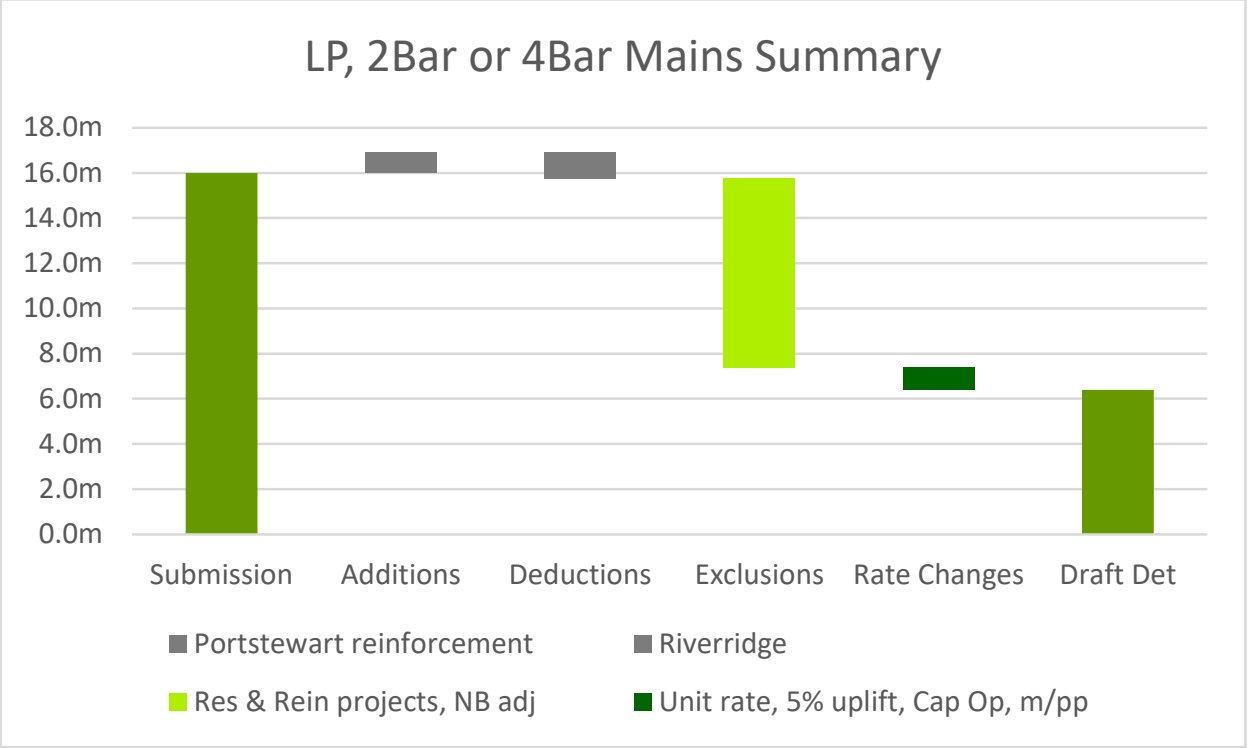


Figure 5.2: LP, 2Bar or 4Bar mains summary

5.9 The table below summarises the business plan proposals and our draft determination for LP, 2Bar or 4Bar mains.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	8.050	3.109	2.526	1.005	0.789	0.522	16.001
Business plan mains laid (m)	73,926	30,017	28,720	17,342	15,811	14,250	180,066
DD investment (£m)	3.685	0.539	0.539	0.539	0.555	0.539	6.396
DD mains laid (m)	50,785	11,875	11,875	11,875	12,081	11,875	110,366

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.2: LP, 2Bar or 4Bar mains summary

FE – Resilience mains – Security of supply

5.10 FE included a paper on security of supply issues as part of its business plan submission. The layout of the FE gas mains within its development towns is straightforward as there is a single large feeder main from the AGI to the town. This then transitions to a spine network with infill mains off the feeder mains which supply gas to housing areas. FE has proposed adding additional resilience to these networks in GD23, mainly by interconnecting the infill mains within each town.

5.11 The FE proposals and our determination is shown in the table below.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.878	0.718	1.279	0.491	0.213	0.000	3.579
Business plan mains laid (m)	7,299	6,367	9,683	3,092	1,355	0	27,796
DD investment (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DD mains laid (m)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.3: Resilience mains summary

5.12 In section 4.2 we describe our general approach on the resilience of the Northern Ireland natural gas network within the draft determination. Our position is that GDN's should have accounted for resilience when designing the network and should provide any further resilience they consider necessary through the already defined price control mechanisms.

5.13 We have therefore not provided any additional allowance for resilience mains under security of supply and these projects have been excluded by us.

FE – Reinforcement mains – Security of supply

5.14 FE included several reinforcement projects in the business plan submission. In response to a query, FE confirmed that a reinforcement project for Portstewart first referenced in the Bushmills reinforcement application had been omitted. We have included this as an addition in Figure 5.2. The table below summarises the submission and our determination.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.647	1.892	0.745	0.000	0.059	0.000	4.343
Business plan mains laid (m)	9,453	9,400	4,787	0	206	0	23,846
DD investment (£m)	0.469	0.000	0.000	0.000	0.016	0.000	0.485
DD mains laid (m)	4,200	0	0	0	206	0	4,406

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.4: Reinforcement mains summary

5.15 The reinforcement projects included in the business plan are shown in Table 5.5.

Reinforcement project	Town	Length	Cost	Project driver
Security of Supply-005	Templepatrick	7,353	1.152	Part of overall design UFBP
Security of Supply-042	Antrim	4,787	0.745	Part of overall design UFBP
Security of Supply-041	Coleraine	2,100	0.495	Part of overall design Bushmills
Security of Supply-040	Coleraine	2,482	0.484	Part of overall design Bushmills
Security of Supply-043	Coleraine	3,982	0.994	Part of overall design Bushmills
Security of Supply-044	Coleraine	2,936	0.414	Part of overall design Bushmills
Security of Supply-016	Portadown	206	0.059	Growth

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.5: Reinforcement mains summary

5.16 When FE was developing its proposals for the extension to Ulster Farm By Products we asked it to include all necessary reinforcement for the surrounding network so that we could account for it in our economic assessment. At the time FE confirmed that based on its modelling, further reinforcement would not be required for at least ten years from the date of connection (i.e. 2030 at the earliest). The reinforcement discussed at that time was much shorter in length than the proposed GD23 projects, SoS-005 and SoS-042, and at a different location.

5.17 In its response to GD23 query FE-033, FE confirmed that project SoS-005 would only be required in 2029 at the earliest (with planned construction in 2028 to prevent low pressure) and that project SoS-042 would only be required if other towns and large I&C customers connected to the network.

5.18 Given the previous assurances from FE with regard to the timing of future reinforcement requirements and the potential timing and uncertainty quoted in response to FE-033, we have excluded these projects from the draft determination.

5.19 In its response to GD23 query FE-034, FE confirmed that SoS-041 isn't required until 2029, SoS-043 isn't required until 2029 unless there is a load increase at Bushmills prior to this and SoS-044 is only required if other towns or large I&C's were to connect to the local Coleraine network. We have excluded these projects.

5.20 When FE was developing its proposals for the extension to Bushmills we asked it to include all necessary reinforcement for the surrounding network so that we could account for it in our economic assessment. At that time FE confirmed to us that reinforcement for Portstewart would be required in the future regardless of the Bushmills reinforcement. This project, which was initially for 4,200m of 180mm diameter main, was omitted from the business plan submission and has therefore been included as an addition in the draft

determination. GD23 project SoS-040 is linked to the provision of this main and FE modelling shows a need for this reinforcement in 2023.

5.21 The information on the Portstewart reinforcement provided by FE shows the route has changed (it now goes to Portstewart from Coleraine via Portrush) and the length has increased to 8,242m. We queried this with FE who advised in response FE-079 that following further consideration it had concluded that following the original route was not possible as some of the roads were not adopted and under private ownership.

5.22 The amended route (Route A 8,242m) is not entirely within FE's current development area at it goes via Portrush which further complicates delivery. We asked FE to consider two other routes (routes B 3,841m and C 4,343m) both of which are feasible, but route C is more cost effective as the extension can be constructed using a smaller diameter pipe.

5.23 As there are currently no plans to make gas available to Portrush, we would question the need for reinforcement to Portstewart to be routed through Portrush.

5.24 We would therefore ask that FE give further consideration to alternative routes and routes B and C, which could provide the required reinforcement to Portstewart whilst also providing the option for an offtake to Portrush at some point in the future. Given that the reinforcement is likely to be needed in 2023 and the specification of the reinforcement remains uncertain, FE can provide this information either in its response to the draft determination or separately in advance to allow additional time for the proposals to be considered. The information provided should include options which size the pipes for reinforcement only as well as reinforcement plus the Portrush load. If project SoS-040 is also required, this should be referenced in the response.

5.25 Given that we accept there is a requirement to reinforce Portstewart we have included some funding in the draft determination as a placeholder for the eventual solution. The placeholder funding is for 4,200m at the GD23 unit rate for 180mm main. Project SoS-040 has not been included separately at this time as we consider it to be linked to the Portstewart reinforcement.

5.26 We have also included project SoS-016 in the draft determination as this is required for growth. We have included 206m at the GD23 unit rate for 90mm main in our determination.

FE – Infill mains – Growth

5.27 For the GD17 price control, FE submitted detailed plans for 621 schemes to extend the gas network to the natural boundaries of the towns in its licence

area. It identified that these schemes would pass an additional 92,344 existing properties. FE proposed passing the majority of these properties in GD17. As a result of an accelerated GD17 programme, it is estimated only 1,856 will remain to be completed in the first year of GD23. The table below summarises the submission and our determination.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	5.044	0.000	0.000	0.000	0.000	0.000	5.044
Business plan mains laid (m)	42,924	0	0	0	0	0	42,924
Business plan properties passed	1,899	0	0	0	0	0	1,899
DD investment (£m)	2.677	0.000	0.000	0.000	0.000	0.000	2.677
DD mains laid (m)	34,710	0	0	0	0	0	34,710
DD properties passed	1,856	0	0	0	0	0	1,856

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.6: Infill mains summary

5.28 We have moved FE's project for RiverRidge (8,214m and 43 properties passed) from Spine and Infill mains to Individually Funded projects.

5.29 In section 4.14 above we describe the economic test which was applied in GD17. This concluded that it is economic to pass additional properties up to an average of £67.76/m (Dec 2014 prices) at 10.30m per property passed. This equates to a unit rate £77.13/m (Av 2020 prices).

5.30 The infill has been included in our determination at £77.13/m and 18.7m/pp for 1,856 properties, but will be adjusted to a cap of 10.3m/pp over the entire seven year period (GD17 plus 2023) cumulatively in line with the GD17 determination.

5.31 This will continue to allow FE the freedom to prioritise mains and deliver this work in the most economic manner without any concern over the marginal economic viability of the work left to be completed in the first year of GD23.

5.32 For the rest of the GD23 period beyond 2023, the general economic parameters established in GD17 will apply, as described in section 4.19 above. These are £76.05/m (Av2020 prices) at 5.16m/pp for any mains FE require following the completion of the 621 projects approved in GD17.

FE – New build mains – Growth

5.33 The provision of gas mains to serve new development that has been proposed by FE and our determination is summarised in Table 5.7.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.482	0.499	0.503	0.514	0.517	0.522	3.036
Business plan mains laid (m)	14,250	14,250	14,250	14,250	14,250	14,250	85,500
Business plan properties passed	1,500	1,500	1,500	1,500	1,500	1,500	9,000
DD investment (£m)	0.539	0.539	0.539	0.539	0.539	0.539	3.234
DD mains laid (m)	11,875	11,875	11,875	11,875	11,875	11,875	71,250
DD properties passed	1,250	1,250	1,250	1,250	1,250	1,250	7,500

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.7: New build mains summary

5.34 In its business plan, FE proposed that we retain the 9.5m/pp for new build properties that was determined in GD17. PNGL also proposed this and the proposal has been accepted.

5.35 FE propose passing 1,500 properties each year, but we have reduced this to 1,250 properties each year. This will continue to be adjusted for actual numbers by the uncertainty mechanism.

5.36 The determined allowance is based on the GD23 basket of works unit rates and the mix of mains sizes included by FE in its business plan submission. In FE's case this results in an allowance of £45.39/m which is an increase from its submission value of £35.51/m. We would note that the basket of works should be considered in the round as it reflects the actual cost of completing a range of activities over the period 2017-20.

FE – Individually funded

5.37 FE did not submit any proposals for individually funded projects during the GD23 price control period.

5.38 We transferred the project for RiverRidge from general infill to Individually Funded to better disaggregate this project and treat it as a nominated output with a ring fenced allowance should it be included in our determination.

5.39 The figure below summarises our decisions in reaching our draft determination for individually funded projects. Further detail is provided in subsequent sections.

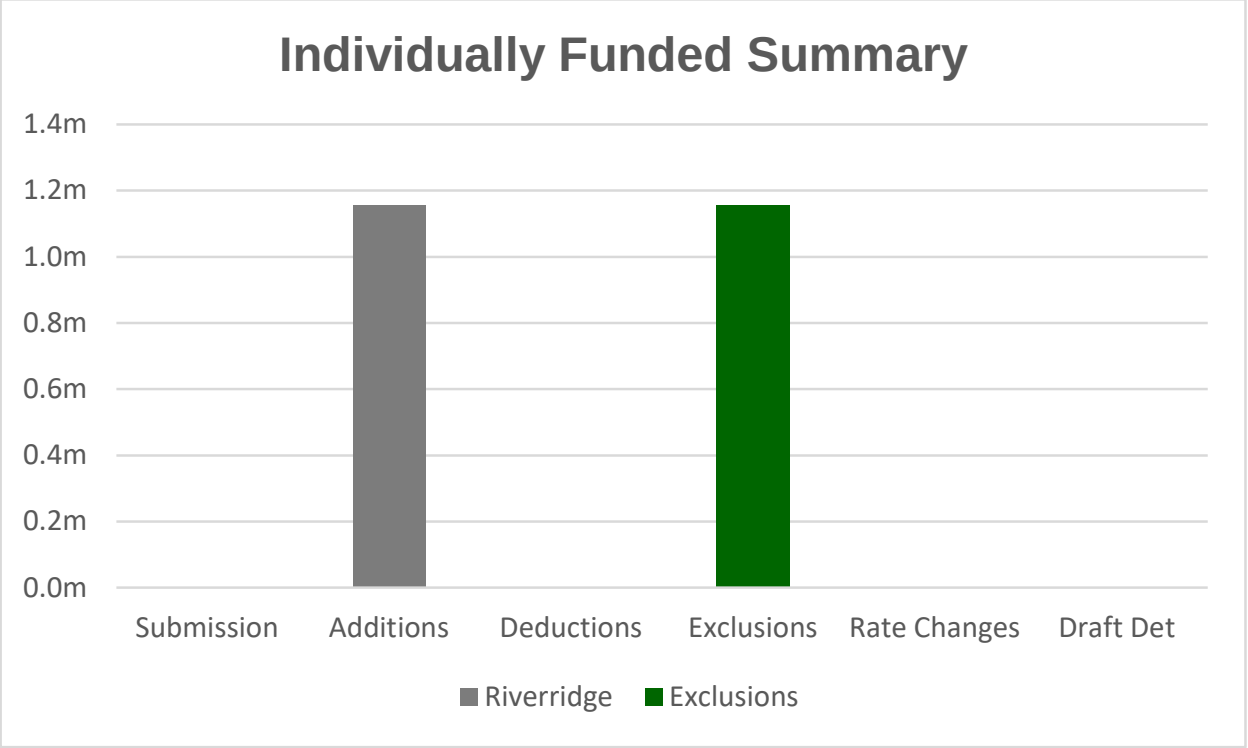


Figure 5.3: Individually funded projects summary

5.40 The table below summarises the business plan proposals for the cost of the project and our draft determination for individually funded mains.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.157	0.000	0.000	0.000	0.000	0.000	1.157
Business plan mains laid (m)	8,214	0	0	0	0	0	8,214
DD investment (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DD mains laid (m)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.8: Individually funded mains summary

5.41 The RiverRidge project involves laying c8km of 180mm and 250mm main to the facility at Ringsend, Coleraine.

5.42 We assessed the cost of the project by applying our GD23 basket of works unit rates for 180mm and 250mm mains. This resulted in a project cost of £0.992m.

5.43 We have however not approved the project in our determination pending final confirmation that the project will proceed.

5.44 There is little to be lost for consumers by waiting. The economic project mechanism set out in section 3.26 allows GDN's to bring forward projects such as this for delivery in the future if they are proven to be necessary and economically viable.

FE – District governors and pressure reduction stations

5.45 The figure below summarises our decisions in reaching our draft determination for pressure reduction. Further detail is provided in subsequent sections.

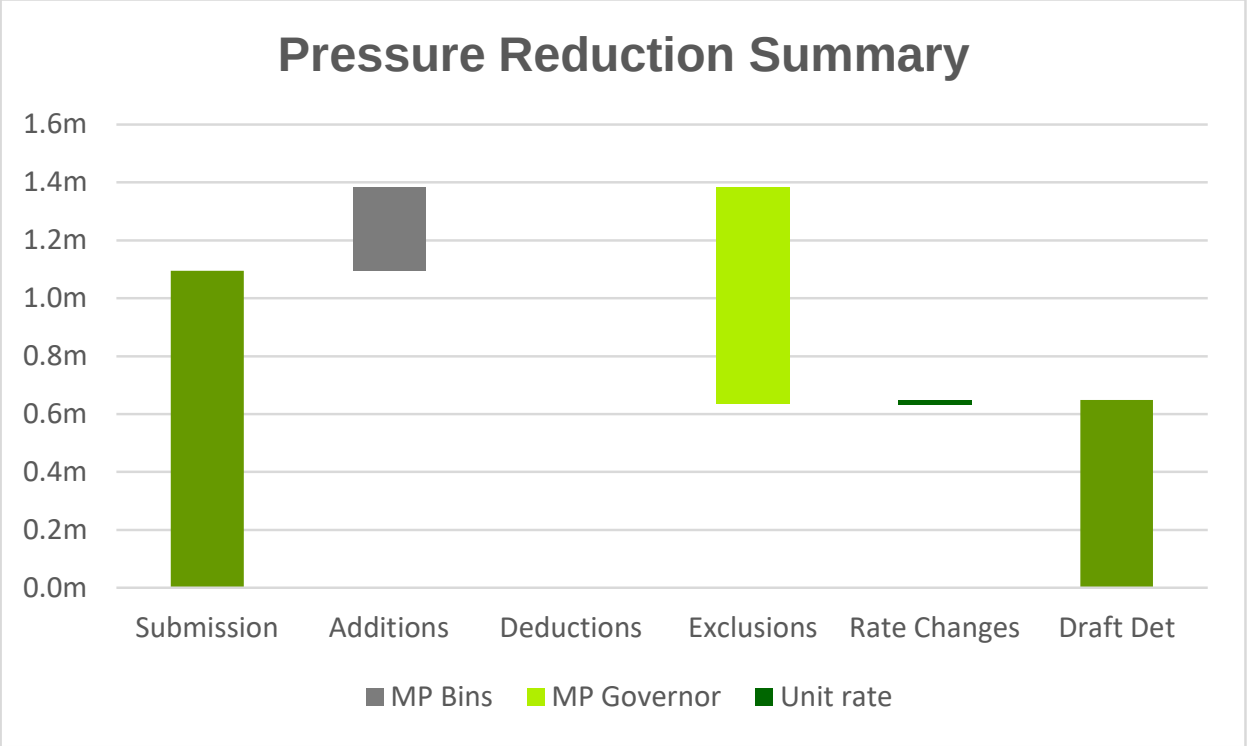


Figure 5.4: Pressure reduction summary

5.46 The table below summarises the business plan proposals and our draft determination for pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.161	0.141	0.142	0.145	0.252	0.254	1.095
Business plan PRS (nr)	10	8	8	8	16	15	65
DD investment (£m)	0.060	0.060	0.060	0.060	0.205	0.205	0.649
DD PRS (nr)	6	6	6	6	21	21	66

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.9: Pressure reduction summary

FE – Pressure reduction stations – Growth

5.47 We reviewed the forecast activity volumes and costs associated with PRS installations. We estimate that the average outturn activity level from 2017-20 is 6 PRSs per year. This is made up of 4 bins and 2 district governors. We assessed the activity levels for each type based on the cost of the PRS. In GD23 FE propose growth of 4 district governors per year and 0 bins.

5.48 Including both growth and growth replacement (discussed in the next section) we propose to maintain the 2017-20 run rate i.e. a total of 6 PRS per year. Given that infill will be completed in 2023, growth should be reducing, therefore this decision includes a reasonable margin in FE's favour. We have included 1 district governor and 3 bins per year for growth. We used the FE business plan average unit rate for district governors in our assessment as it is similar to the 2017-20 outturn rate, and used the 2017-20 outturn rate for bins as FE did not include any rates for bins in its submission.

5.49 The table below summarises the business plan proposals and our draft determination for pressure reduction growth.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan growth (£m)	0.086	0.064	0.064	0.066	0.066	0.067	0.414
Business plan (nr)	6	4	4	4	4	4	26
Draft determination growth (£m)	0.036	0.036	0.036	0.036	0.036	0.036	0.217
Draft determination (nr)	4	4	4	4	4	4	24

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.10: Pressure reduction growth

5.50 The majority of the variation is attributed to allowing for bins in place of some district governors.

FE – Pressure reduction stations – Replacement

5.51 We reviewed the forecast activity volumes and costs associated with the replacement of PRS installations. FE's response to FE-032 included a list of 6 PRSs which are getting replaced for resilience reasons and a further 2 which included an element of resilience. Our assumption is that if resilience is necessary in GD23 then it was also necessary in GD17, and will be present in the delivery outturn figures. Following our allocation of 4 PRSs for growth as mentioned in the section above, we have 2 PRS remaining from our assessed 2017-20 outturn figure of 6, which can be allocated to

replacement growth PRS. For the determination we have allowed 1 each for district and bin PRSs.

5.52 The table below summarises the business plan proposals and our draft determination for replacement growth pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
BP replacement growth (£m)	0.074	0.077	0.078	0.079	0.080	0.080	0.468
Business plan (nr)	4	4	4	4	4	4	24
DD replacement growth (£m)	0.023	0.023	0.023	0.023	0.023	0.023	0.140
Draft determination (nr)	2	2	2	2	2	2	12

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.11: Pressure reduction replacement growth

5.53 FE proposed replacing approximately 7% of its governor's in GD23 for end-of-life reasons starting in 2027 on a 20 year replacement schedule. We have accepted this percentage but have taken 7% for district and bin installations based on the number of each type of installation at the start of GD23.

5.54 The table below summarises the business plan proposals and our draft determination for replacement end-of-life pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
BP replacement end-of-life (£m)	0.000	0.000	0.000	0.000	0.106	0.107	0.213
Business plan end-of-life (nr)	0	0	0	0	8	7	15
DD replacement end-of-life (£m)	0.000	0.000	0.000	0.000	0.146	0.146	0.292
Draft determination end-of-life (nr)	0	0	0	0	15	15	30

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.12: Pressure reduction replacement end-of-life

FE – Domestic service connections

5.55 The figure below summarises our decisions in reaching our draft determination for domestic services. Further detail is provided in subsequent sections.

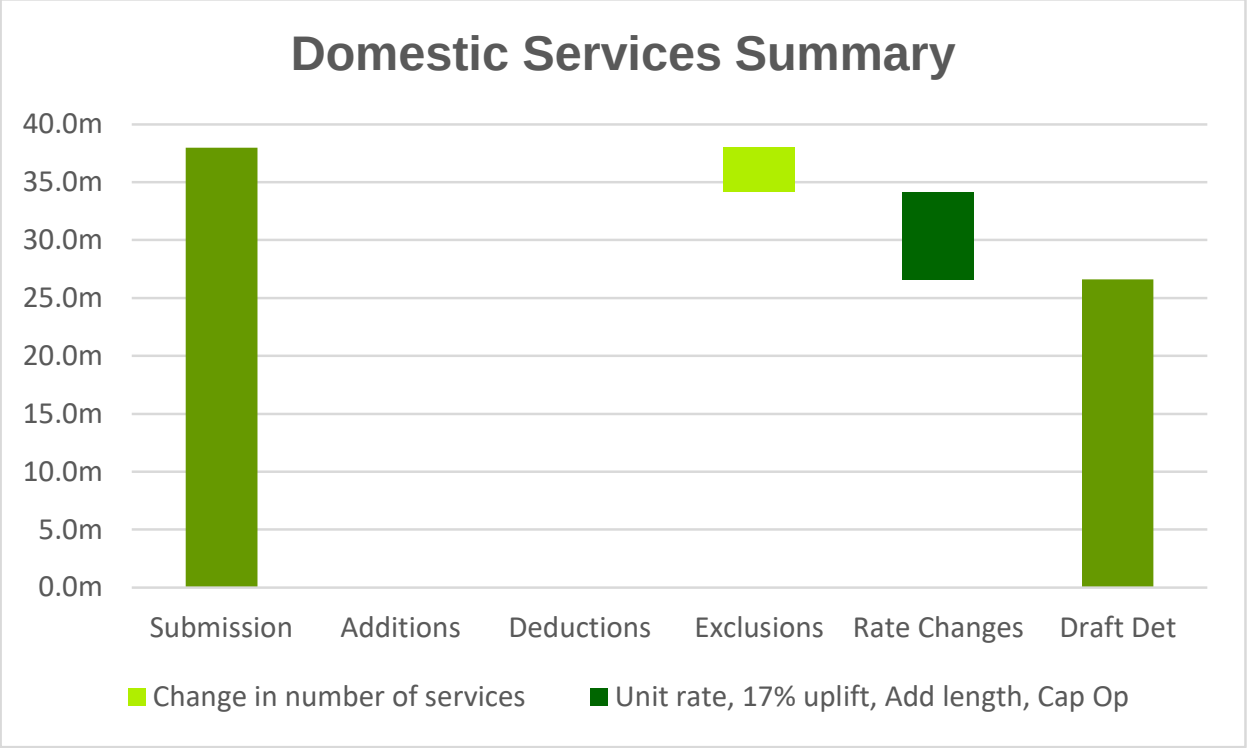


Figure 5.5: Domestic services summary

5.56 The table below summarises the business plan proposals and our draft determination for domestic services.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	6.527	6.539	6.387	6.328	6.172	6.040	37.994
BP domestic services (nr)	6,352	6,185	6,024	5,871	5,724	5,584	35,740
DD investment (£m)	5.064	4.812	4.559	4.307	4.054	3.802	26.598
DD domestic services (nr)	5,947	5,683	5,419	5,155	4,891	4,627	31,722

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.13: Domestic services summary

5.57 FE plan to connect 35,740 domestic customers over the GD23 price control period. This comprises of 9,000 of new build properties, 6,000 NIHE properties, and 20,740 owner occupier properties.

5.58 We have concluded that the company's projections of NIHE connections are reasonable. We have reduced the target number of new build and existing owner occupier connections in GD23 to 7,500 and 18,222 respectively, taking a more conservative approach. Further details can be found in Annex C – Connections and Volumes.

5.59 The profile of connections and investment in the determination is shown in Table 5.14.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	6.527	6.539	6.387	6.328	6.172	6.040	37.994
BP new build services	1,500	1,500	1,500	1,500	1,500	1,500	9,000
BP owner occupied services	3,852	3,685	3,524	3,371	3,224	3,084	20,740
BP NIHE services	1,000	1,000	1,000	1,000	1,000	1,000	6,000
DD investment (£m)	5.064	4.812	4.559	4.307	4.054	3.802	26.598
DD new build services	1,250	1,250	1,250	1,250	1,250	1,250	7,500
DD owner occupied services	3,697	3,433	3,169	2,905	2,641	2,377	18,222
DD NIHE services	1,000	1,000	1,000	1,000	1,000	1,000	6,000

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.14: Domestic services investment by tenure

5.60 The existing property service unit rate in the business plan is c39% higher than the 2017-20 outturn costs. This is further discussed in section 3.53.

5.61 We have applied the basket of works unit rates to estimate an appropriate allowance for the determination as they are the best indicator of actual cost.

FE – Domestic meters

5.62 The figure below summarises our decisions in reaching our draft determination for domestic meters. Further detail is provided in subsequent sections.

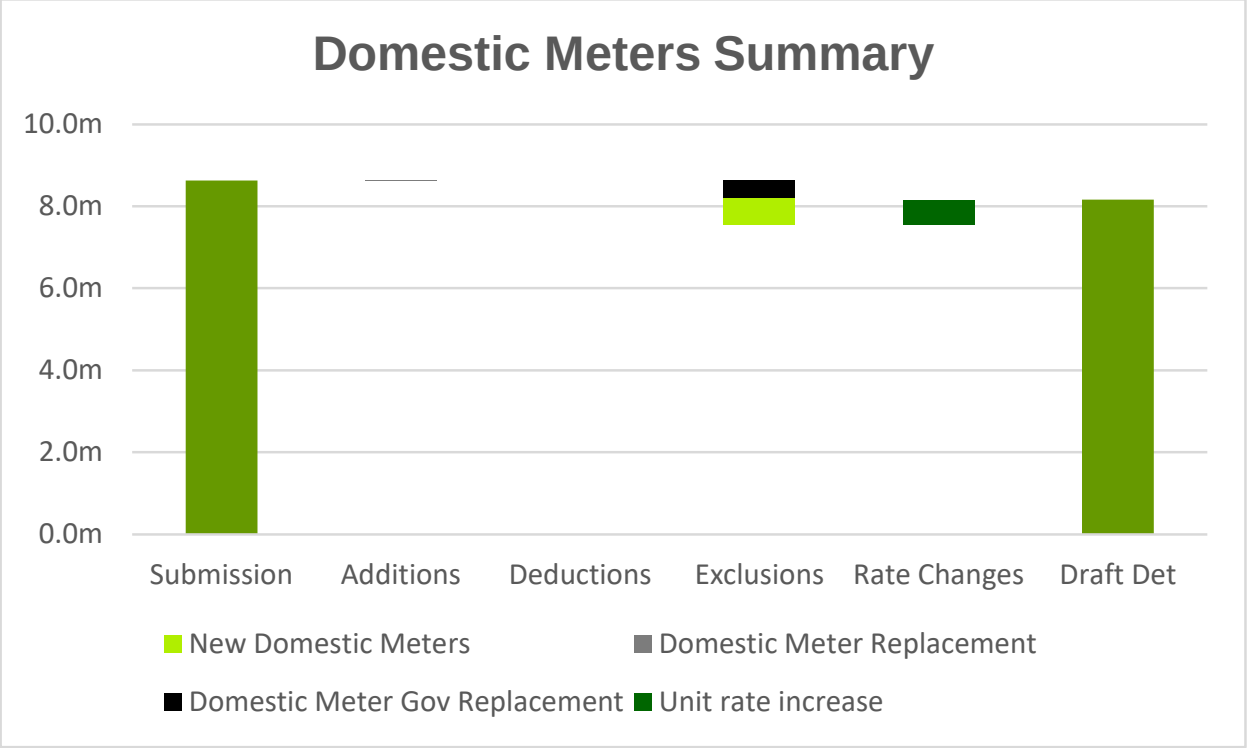


Figure 5.6: Domestic meters summary

5.63 The table below summarises the business plan proposals and our draft determination for domestic meters.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.274	1.292	1.281	1.432	1.584	1.764	8.627
BP domestic meters new (nr)	6,352	6,185	6,024	5,871	5,724	5,584	35,740
BP dom meters replacement (nr)	670	729	787	1,742	2,873	4,053	10,854
DD investment (£m)	1.357	1.316	1.275	1.330	1.401	1.487	8.166
DD domestic meters new (nr)	5,947	5,683	5,419	5,155	4,891	4,627	31,722
DD dom meters replacement (nr)	696	754	808	1,309	1,896	2,506	7,970

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.15: Domestic meters summary

FE – Domestic meters – Growth

5.64 FE's business plan included a domestic meter at each new connection.

5.65 We have reduced the number of domestic meters in the determination to reflect our decision to decrease the target number of new build and owner occupier connections (see paragraph 5.58).

5.66 The profile of connections and investment in the draft determination is shown in Table 5.16.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.176	1.187	1.167	1.162	1.141	1.124	6.957
BP dom meters new credit (nr)	2,116	2,049	1,985	1,923	1,864	1,809	11,746
BP dom meters new prepay (nr)	4,236	4,136	4,039	3,948	3,860	3,775	23,994
DD investment (£m)	1.216	1.164	1.112	1.060	1.008	0.956	6.516
DD dom meters new credit (nr)	1,822	1,713	1,604	1,495	1,386	1,276	9,296
DD dom meters new prepay (nr)	4,125	3,970	3,815	3,660	3,505	3,351	22,426

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.16: Domestic meters growth

5.67 We have applied the basket of works unit rates for U6 credit and prepayment meters and U16 credit meters to estimate an appropriate allowance for the determination.

FE – Domestic meter – replacement

5.68 FE propose replacing domestic meters after twenty years in line with the principle established in GD17. In addition, FE proposes to replace the regulator and 15% of the meter cabinets.

5.69 Our basket of works unit rate for replacing the meter includes the regulator and associated ancillaries. PNGL propose starting the replacement of large I&C cabinets after 30 years and have no proposals to replace domestic meter boxes to date. As domestic meter boxes are generally made from plastic we expect them to have a very long life expectancy. We have excluded the FE costs for meter regulator and meter installation replacement for these reasons.

5.70 FE has included an allowance for replacing meters for other reasons. This could be due to faults with meters among various other reasons. We have continued to include an allowance for this work in the determination.

5.71 The table below summarises the business plan proposals and our draft determination for domestic meter replacements.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.097	0.106	0.114	0.270	0.443	0.640	1.671
BP domestic replacement EoL (nr)	0	0	0	449	987	1,550	2,986
BP dom replacement other (nr)	670	729	787	844	899	953	4,882
BP dom repl reg & instal EoL (nr)	0	0	0	449	987	1,550	2,986
DD investment (£m)	0.141	0.152	0.163	0.270	0.392	0.530	1.649
DD domestic replacement EoL (nr)	0	0	0	449	987	1,550	2,986
DD dom replacement other (nr)	696	754	808	860	909	956	4,984
DD dom repl reg & instal EoL (nr)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.17: Domestic meter replacements

5.72 We have applied the basket of works unit rates for meter replacements to estimate an appropriate allowance for the determination.

5.73 We have accepted the FE profile for end-of-life replacements.

5.74 We have adjusted the FE profile for other replacements to reflect the average from 2017 to 2020. This produces a slight increase in the number of replacements for other reasons.

FE – Industrial and commercial service connections

5.75 The figure below summarises our decisions in reaching our draft determination for industrial and commercial services. Further detail is provided in subsequent sections.

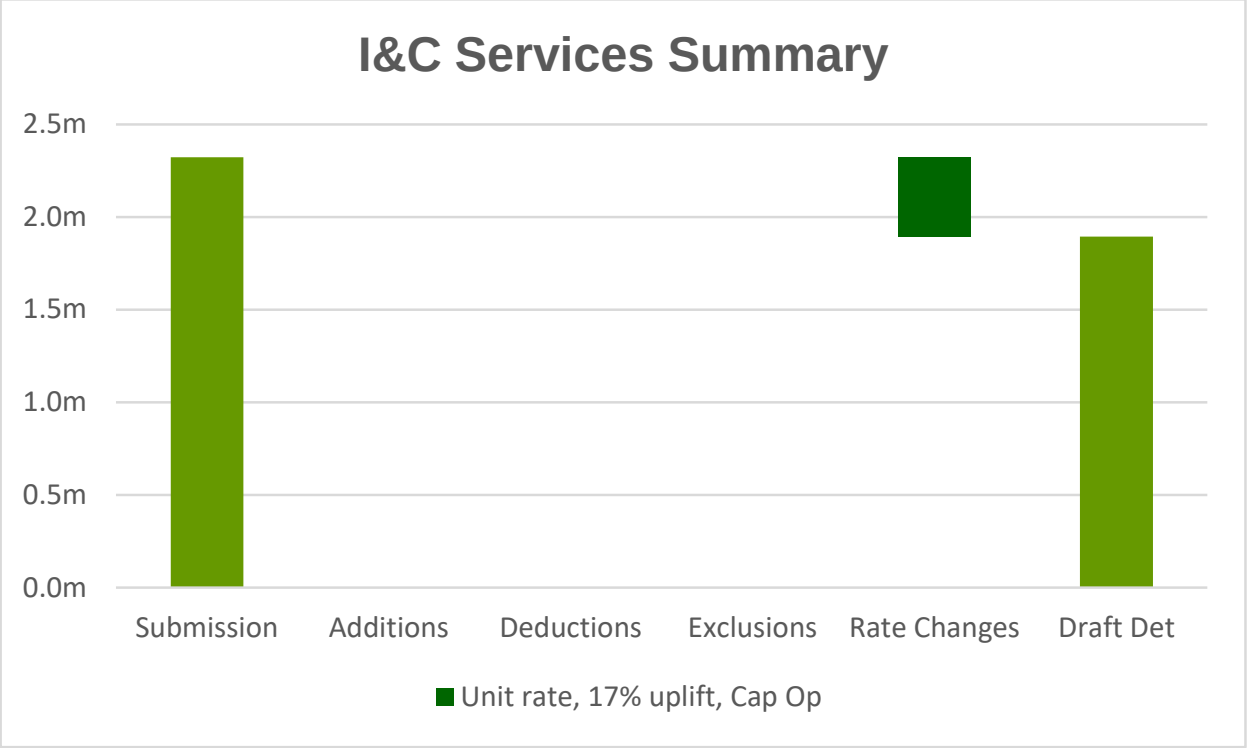


Figure 5.7: Industrial and commercial services summary

5.76 The table below summarises the business plan proposals and our draft determination for domestic services.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.389	0.387	0.387	0.391	0.385	0.383	2.321
BP I&C services (nr)	148	150	147	145	142	140	872
DD investment (£m)	0.332	0.315	0.318	0.315	0.309	0.305	1.895
DD I&C services (nr)	148	150	147	145	142	140	872

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.18: Industrial and commercial services summary

5.77 FE plan to connect 872 I&C connections over the GD23 period. We have accepted the numbers of I&C connections proposed by FE.

5.78 We have applied the basket of works unit rates, as they are the best indicator of actual cost, to estimate an appropriate allowance for the determination.

FE – Industrial and commercial meters

5.79 The figure below summarises our decisions in reaching our draft determination for industrial and commercial meters. Further detail is provided in subsequent sections.

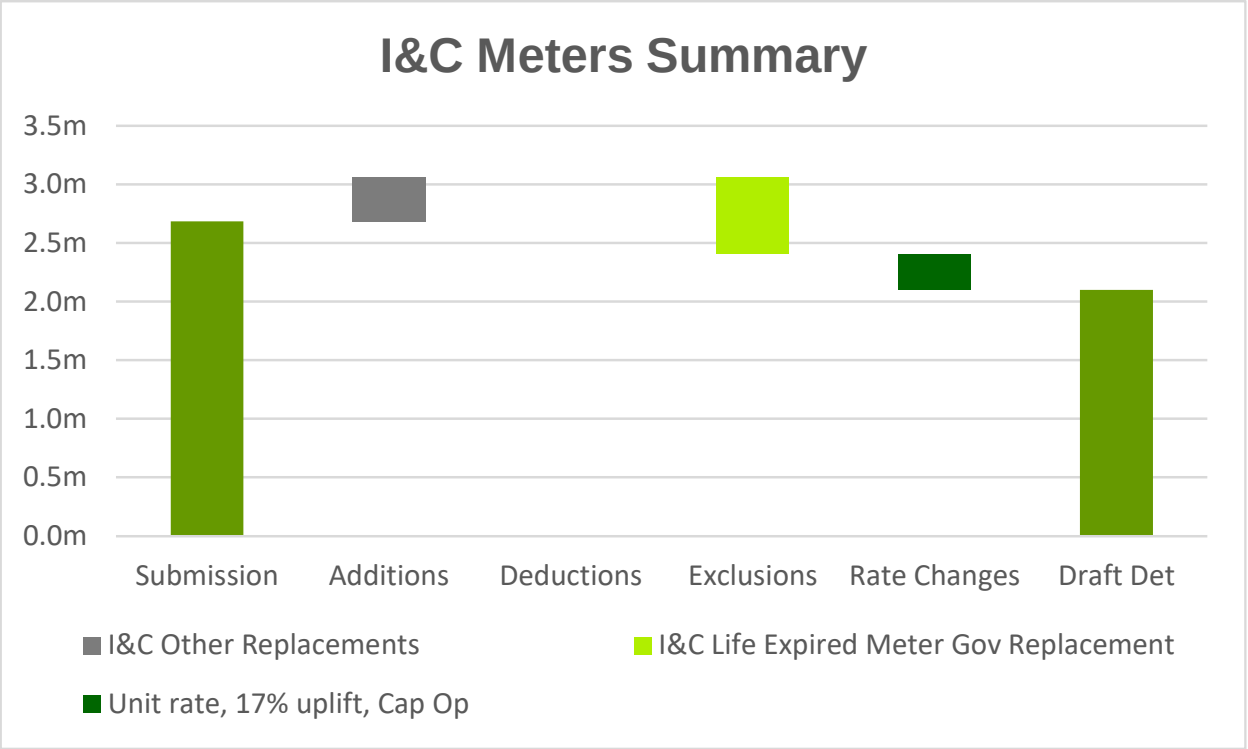


Figure 5.8: Industrial and commercial meters summary

5.80 The table below summarises the business plan proposals and our draft determination for domestic meters.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.326	0.219	0.266	0.401	0.590	0.886	2.688
BP I&C meters new (nr)	148	150	147	145	142	140	872
BP I&C meters replacement (nr)	6	5	4	102	330	554	1,001
DD investment (£m)	0.334	0.244	0.269	0.315	0.414	0.492	2.068
DD I&C meters new (nr)	148	150	147	145	142	140	872
DD I&C meters replacement (nr)	36	38	39	99	246	365	823

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.19: Industrial and commercial meters summary

FE – Industrial and commercial meters – Growth

5.81 FE's business plan included an industrial and commercial meter at each new connection. We have accepted the numbers of industrial and commercial connections proposed by FE. The profile of connections and investment in the draft determination is shown in Table 5.20.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.316	0.210	0.259	0.263	0.262	0.261	1.572
BP I&C meters new (nr)	148	150	147	145	142	140	872
DD investment (£m)	0.308	0.216	0.240	0.239	0.236	0.233	1.473
DD I&C meters new (nr)	148	150	147	145	142	140	872

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.20: Industrial and commercial meters growth

5.82 Our allowances have been calculated by applying the appropriate basket of works unit rate to the number of I&C meters of each size proposed by FE in the business plan.

FE – Industrial and commercial meters – Replacement

5.83 FE propose to replace industrial and commercial meters after twenty years in line with the principle established in GD17. In addition, FE proposes to replace the regulator and some meter cabinets for smaller (up to U40) industrial and commercial installations.

5.84 Our basket of works unit rate for replacing the meter includes the regulator and associated ancillaries. PNGL proposes to start replacing large I&C (U65 and above) cabinets after 30 years and have not made any proposals to replace smaller industrial and commercial meter boxes to date. We have excluded the FE costs for meter regulator and meter installation replacement for these reasons.

5.85 FE has included an allowance for replacing meters for other reasons. This could be due to faults with meters among various other reasons. We have continued to include an allowance for this work in the determination.

5.86 The table below summarises the business plan proposals and our draft determination for industrial and commercial meter replacements.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.010	0.008	0.006	0.138	0.328	0.625	1.116
BP I&C replacement EoL (nr)	0	0	0	58	204	321	583
BP I&C replacement other (nr)	6	5	4	4	6	5	30
BP I&C repl reg & instal EoL (nr)	0	0	0	40	120	228	388
DD investment (£m)	0.026	0.027	0.028	0.076	0.177	0.260	0.595
DD I&C replacement EoL (nr)	0	0	0	58	204	321	583
DD I&C replacement other (nr)	36	38	39	41	42	44	240
DD I&C repl reg & instal EoL (nr)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.21: Industrial and commercial meters replacement

5.87 We have applied the basket of works unit rates for meter replacements to estimate an appropriate allowance for the determination.

5.88 We have accepted the FE profile for end-of-life replacements.

5.89 We have adjusted the FE profile for other replacements to reflect the average from 2017 to 2020. This results in a large increase in the number of replacements for other reasons as FE did not propose any U6-U40 meters. We assume this is because FE proposed to replace the meter installation for these sizes of meters and therefore other replacements would not be required.

FE – Other capex

5.90 The figure below summarises our decisions in reaching our draft determination for other capex. Further detail is provided in subsequent sections.

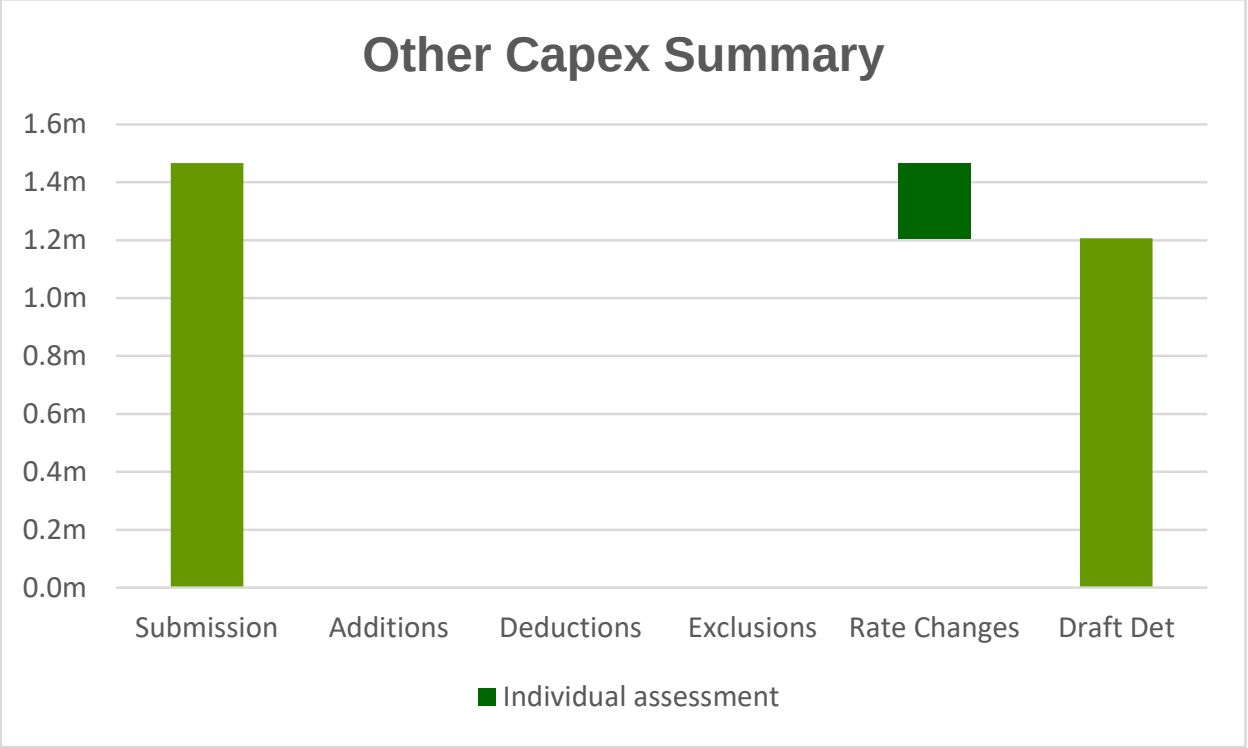


Figure 5.9: Other capex summary

5.91 The table below summarises the business plan proposals and our draft determination for other capex.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.475	0.347	0.222	0.119	0.093	0.210	1.466
DD investment (£m)	0.475	0.215	0.222	0.119	0.093	0.084	1.207

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.22: Other capex summary

5.92 We have accepted FE's submission for other capex, except for the following items.

5.93 We have removed the capex relating to the installation of solar panels in 2024 as we believe this is an area of investment which FE can consider out with its regulated business.

5.94 We have changed the refresh of staff IT equipment to a 5 year cycle in place of the 4 year cycle proposed by FE. This moves the refresh to 2029 which is outside of the price control period.

FE – Traffic management act

5.95 As in previous price controls, we have allowed a ring fenced allowance for TMA equivalent to 10% of the allowances for main laying and service laying activities.

FE – Customer contributions

5.96 We have made an adjustment to account for customer contributions relating to capex expenditure. FE did not include any customer contributions in the business plan submission, so we have used the four year average from 2017-20 to make the adjustment. This equates to a figure of 1.9% for FE.

FE – Summary of findings

5.97 In Table 5.23 below we have set out a summary of FE's capex submission and our total capex allowance pre and post frontier shift for the draft determination. This includes a final adjustment for customer contributions.

	2023	2024	2025	2026	2027	2028	GD23
FE business plan submission (£m)							
7 Bar Mains	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LP, 2Bar or 4Bar Mains	8.050	3.109	2.526	1.005	0.789	0.522	16.001
Individually Funded	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pressure Reduction	0.161	0.141	0.142	0.145	0.252	0.254	1.095
Domestic Services	6.527	6.539	6.387	6.328	6.172	6.040	37.994
Domestic Meters	1.274	1.292	1.281	1.432	1.584	1.764	8.627
I&C Services	0.389	0.387	0.387	0.391	0.385	0.383	2.321
I&C Meters	0.326	0.219	0.266	0.401	0.590	0.886	2.688
Other Capex	0.475	0.347	0.222	0.119	0.093	0.210	1.466
TMA	1.497	1.004	0.930	0.772	0.735	0.694	5.632
Totals	18.698	13.038	12.141	10.593	10.599	10.753	75.823
UR draft determination pre FS (£m)							
7 Bar Mains	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LP, 2Bar or 4Bar Mains	3.685	0.539	0.539	0.539	0.555	0.539	6.396
Individually Funded	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pressure Reduction	0.060	0.060	0.060	0.060	0.205	0.205	0.649
Domestic Services	5.064	4.812	4.559	4.307	4.054	3.802	26.598
Domestic Meters	1.357	1.316	1.275	1.330	1.401	1.487	8.166
I&C Services	0.332	0.315	0.318	0.315	0.309	0.305	1.895
I&C Meters	0.334	0.244	0.269	0.315	0.414	0.492	2.068
Other Capex	0.475	0.215	0.222	0.119	0.093	0.084	1.207
TMA	0.908	0.567	0.542	0.516	0.492	0.465	3.489
Totals	12.215	8.067	7.785	7.499	7.523	7.378	50.467
UR draft determination post FS (£m)							
7 Bar Mains	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LP, 2Bar or 4Bar Mains	3.648	0.529	0.527	0.528	0.545	0.529	6.306
Individually Funded	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pressure Reduction	0.059	0.058	0.058	0.058	0.202	0.202	0.637
Domestic Services	5.014	4.720	4.459	4.221	3.977	3.733	26.124
Domestic Meters	1.343	1.291	1.247	1.303	1.374	1.460	8.019
I&C Services	0.329	0.309	0.311	0.308	0.304	0.299	1.861
I&C Meters	0.331	0.239	0.263	0.308	0.406	0.484	2.031
Other Capex	0.470	0.211	0.218	0.116	0.091	0.082	1.188
TMA	0.899	0.556	0.530	0.506	0.483	0.456	3.429
Totals	12.093	7.914	7.613	7.349	7.380	7.245	49.594
Contributions @ -1.91%	-0.232	-0.152	-0.146	-0.141	-0.141	-0.139	-0.950
Totals (Post FS, Net of Contributions)	11.861	7.762	7.468	7.209	7.238	7.107	48.645

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 5.23: FE draft determination capex allowance

FE – Capital expenditure assumptions post GD23

5.98 We made the following assumptions to include a reasonable allowance of capital expenditure post GD23 for the purpose of modelling GD23 tariffs:

- FE did not identify any 7 bar mains post GD23 and so no allowance has been made in our long term projections.
- We have included the network reinforcement projects proposed by FE which we excluded in our draft determination in year 2029 when the majority of them may be required.
- Infill will be completed in the GD23 period so none is included post GD23.
- We have included an allowance for mains to serve new development based on an average of 1,250 new build properties per annum and a length of 9.5 metres of gas main per property.
- FE did not identify any individually funded projects post GD23 and no allowance has been made in our long term projections.
- We continued both growth and replacement of pressure reducing stations in line with our GD23 determination post GD23.
- We have included the costs of meters and services by extending the connection profiles for both domestic and industrial and commercial properties.
- We have allowed for the replacement of domestic meters and I&C meters based on a 20 year life.
- We have continued the level of other capex based on the 2017-20 average.
- We have continued an allowance for TMA costs at 10% of mains and services.
- We have not applied real price effects or frontier shift to estimated expenditure post GD23.

6. PNGL – UR Proposals

PNGL – Overview

6.1 PNGL's business plan included capital investment of £114.3m for the GD23 price control period in September 2020 prices. The draft determination allows capital investment of £79.8m following the application of the frontier shift net of customer contributions.

6.2 All figures in this chapter are gross figures, i.e. before the application of frontier shift or adjustments for customer contributions, unless otherwise stated. Prices are September 2020 unless otherwise stated.

6.3 The figure below summarises our decisions in reaching our draft determination for GD23.

6.4 In the figure, and elsewhere in this chapter, additions relate to expenditure for either a business plan omission or a transfer of expenditure from another category. Deductions relate to a transfer of expenditure to another category, and exclusions relate to expenditure that has not been approved either in principle or due to an adjustment of units.

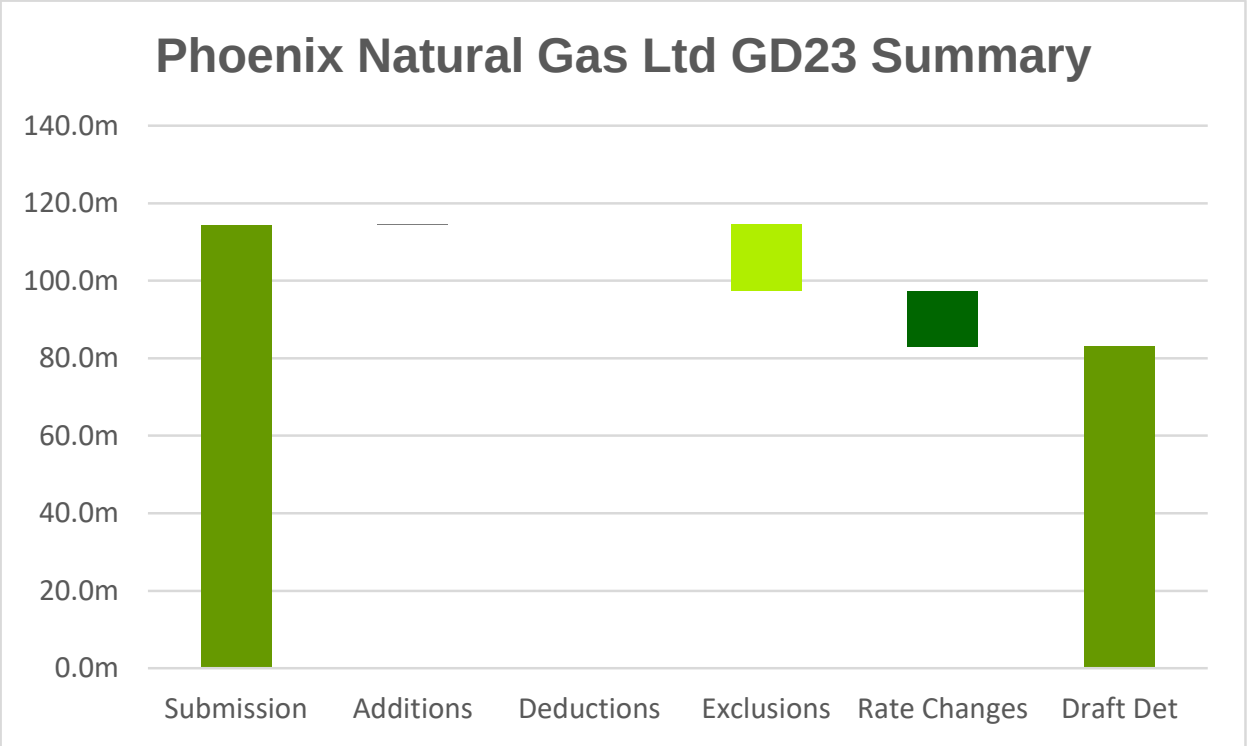


Figure 6.1: GD23 draft determination summary

6.5 The table below summarises the business plan proposals for the GD23 price control period and our draft determination for GD23.

Investment category	Sub	Adj sub	Excl	Rates change	Rates change	DD
7 Bar Mains	13.7	13.7	-2.7	-4.6	-42%	6.4
LP, 2Bar or 4Bar Mains	12.6	12.6	-5.7	-1.6	-23%	5.3
Individually Funded	5.9	5.9	0.0	0.0	0%	5.9
Pressure Reduction	2.9	2.9	-1.2	0.0	0%	1.7
Domestic Services	38.2	38.2	-3.7	-6.3	-18%	28.1
Domestic Meters	26.2	26.2	-1.3	-0.8	-3%	24.1
I&C Services	1.7	1.7	0.0	0.0	-1%	1.7
I&C Meters	4.4	4.5	-0.6	-0.2	-4%	3.8
Other Capex	2.1	2.1	0.0	-0.3	-15%	1.8
TMA	6.6	6.6	-1.9	0.0	0%	4.7
Total	114.3	114.5	-17.1	-13.8	-14%	83.5
Total (post FS, net of contributions)						79.8

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.1: GD23 draft determination summary

6.6 Detailed information on the assessment of the business plan is provided in the subsequent sections.

PNGL – Detailed assessment

PNGL – 7 bar mains

6.7 PNGL proposes to complete four mains reinforcement projects, one resilience project and two PRS projects, including minor quantities of mains, during the GD23 price control period. The PRSs are discussed further in paragraph 6.43.

6.8 The figure below summarises our decisions in reaching our draft determination for 7 bar mains. Further detail is provided in subsequent sections.

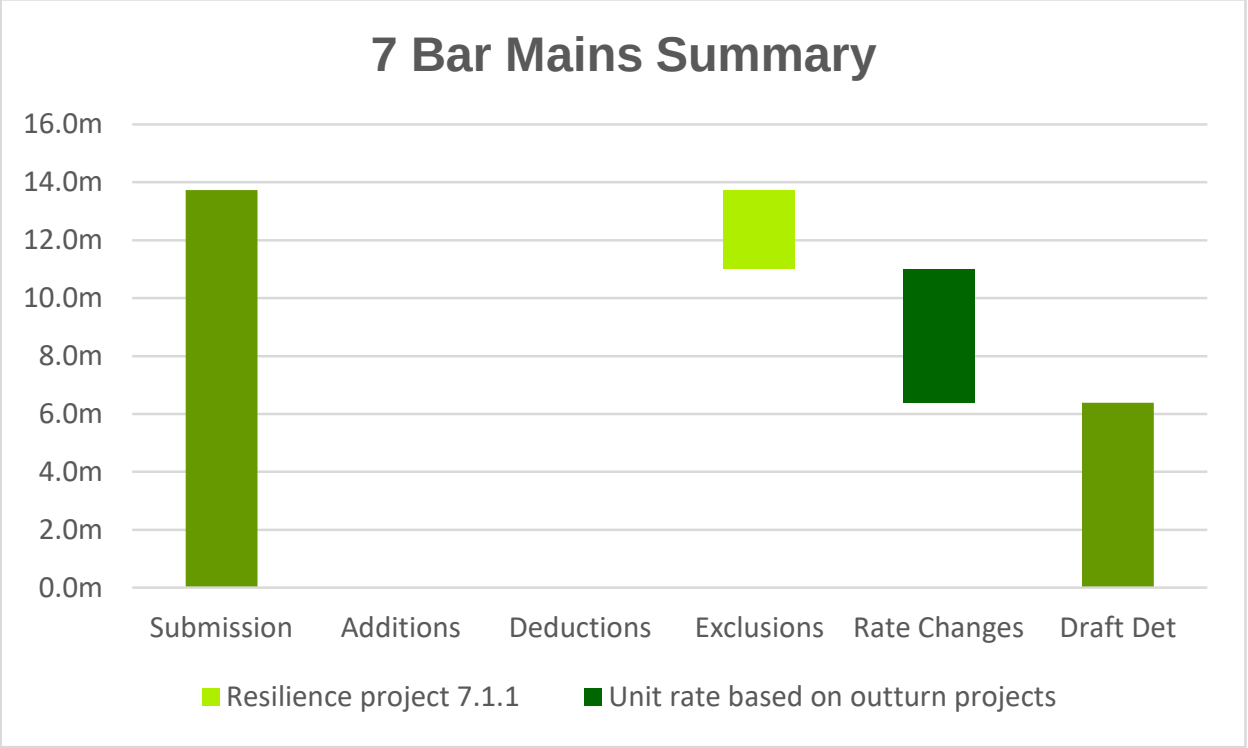


Figure 6.2: 7Bar mains summary

6.9 The table below summarises the business plan proposals and our draft determination for LP, 2Bar or 4Bar mains.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.469	2.939	3.638	4.325	1.361	0.000	13.731
Business plan mains laid (m)	3,644	5,180	6,404	9,121	3,457	0	27,806
DD investment (£m)	1.114	1.585	1.960	1.733	0.000	0.000	6.392
DD mains laid (m)	3,626	5,162	6,386	5,645	0	0	20,818

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.2: 7Bar mains summary

6.10 We have excluded the resilience project 7.1.1 from our determination as we believe the required outcomes are delivered by other projects. The reinforcement project 7.0.1 essentially provides this function by providing a second supply to Bangor and reinforcement project 7.0.4 partially backs up the supply to Newtownards.

6.11 We asked PNGL to demonstrate the need for its reinforcement projects. PNGL completed an analysis which showed that weather event peak flow and normal peak flow were either already causing pressure concerns or would be in the near future based on the assumptions applied.

6.12 We have included the funding in the draft determination, but we will continue to consider if the load growth assumptions made by PNGL continue to remain valid.

6.13 The unit rates submitted by PNGL were outside our range of experience. We therefore developed our unit rates from the GD17 Ballysallagh to Craigantlet reinforcement project and the East Down bulk mains.

6.14 We developed unit rates for both of these projects from the Gas to the West project unit rates, which PNGL has been able to outperform. We have used the same methodology for the GD23 projects which require unit rates for 315mm and 450mm pipe.

6.15 Based on the outturn costs for Ballysallagh to Craigantlet, PNGL out performed our calculated rate by c10%.

6.16 The bulk mains in East Down, which contained a high proportion of 7bar mains, was outperformed by c16%. In this case PNGL negotiated new pipe rates from its contractor which were c25% less than the all in unit rate provided by us. This in large part explains the c16% outperformance.

6.17 Based on this, it is clear that opportunities to outperform are available to the GDN's. Examples might be a change of route, a change of assumed surface category, or a change of unit rate. It is not always clear to us what the specific opportunities are at the time of making a determination, but to date they have materialised.

6.18 We have reduced our calculated unit rate by 10% to better reflect past experience. This was the lesser of the percentages available to us.

6.19 In contrast, we have increased the rate by 6%. This is to reflect the difference in surface category, from that assumed in our calculations and past experience, to the surface category assumed in the proposed GD23 projects. Principally this was taken from the renegotiated East Down unit rates for category 2 and category 4 mains. PNGL's DC04 contract shows a difference from category 4 to category 1 mains of 1% and 10% for 450mm diameter and 315mm diameter mains respectively. So a 6% adjustment seems reasonable.

6.20 We have applied these unit rates to the mix of mains sizes PNGL has included in its business plan submission.

6.21 Each project will be a nominated output, which is defined as:

- An allowance included for the delivery of a specific project proposed by the GDN after undertaking a detailed technical assessment to identify a need and the optimum way of meeting that need. If the GDN subsequently decides that the work is not necessary or can be deferred to a later date, we will either remove the investment from the price control or re-profile the allowance to reflect actual delivery. If the company decides that an alternative solution will deliver the same output, we will review the proposal and determine whether the original allowance should be maintained or the allowance adjusted to reflect a change of output

PNGL – Low and medium pressure mains

6.22 The figure below summarises our decisions in reaching our draft determination for low and medium pressure mains. Further detail is provided in subsequent sections.

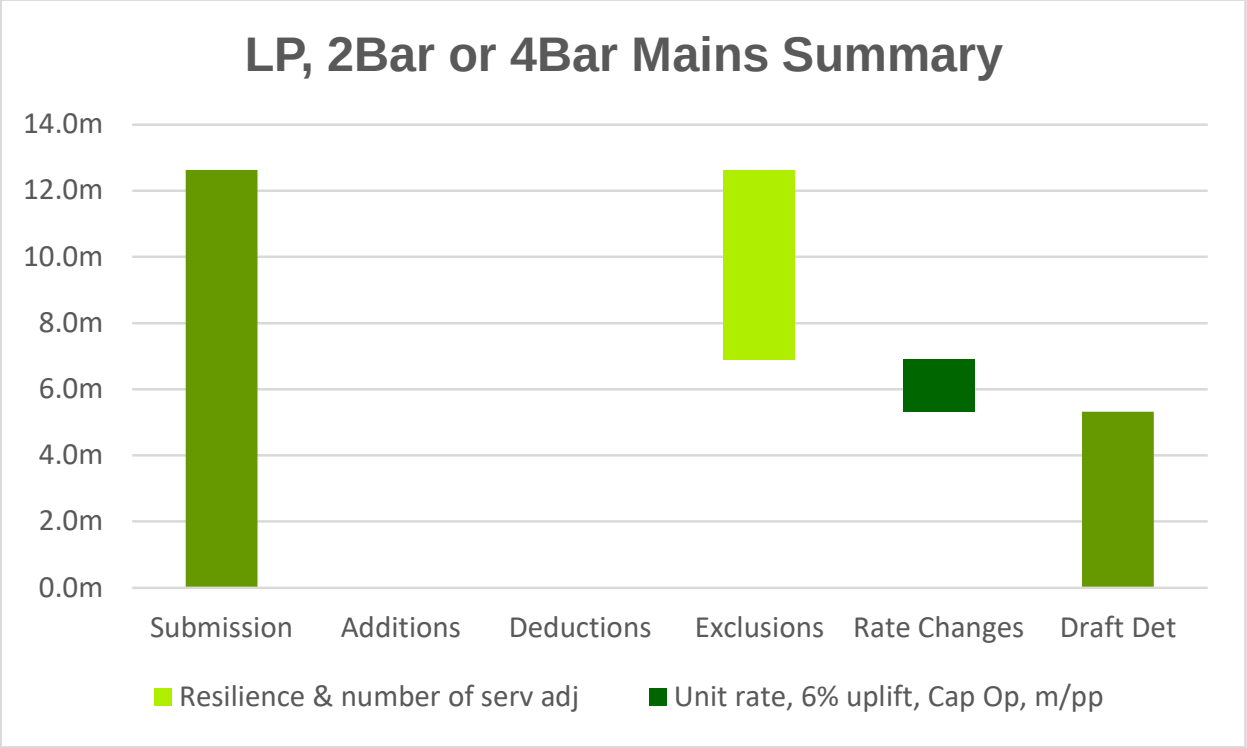


Figure 6.3: LP, 2Bar or 4Bar mains summary

6.23 The table below summarises the business plan proposals and our draft determination for LP, 2Bar or 4Bar mains.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	2.139	2.160	2.026	2.113	2.018	2.176	12.631
Business plan mains laid (m)	29,603	29,381	30,096	30,729	32,609	31,273	183,691
DD investment (£m)	0.887	0.887	0.887	0.887	0.887	0.887	5.319
DD mains laid (m)	19,000	19,000	19,000	19,000	19,000	19,000	114,000

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.3: LP, 2Bar or 4Bar mains summary

PNGL – Resilience mains – Security of supply

6.24 PNGL included a paper on security of supply issues as part of the business plan submission. The PNGL network is generally interlinked, especially within the Greater Belfast area. PNGL proposed to add some additional resilience to its network in GD23, mainly by interconnecting the infill mains at 4bar and low pressure. There is also one project at 7bar pressure which was discussed in the section above.

6.25 The PNGL proposals and our determination is shown in the table below.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.798	0.766	0.579	0.613	0.465	0.624	3.844
Business plan mains laid (m)	5,608	4,436	4,201	3,884	4,814	3,478	26,421
DD investment (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DD mains laid (m)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.4: Resilience mains summary

6.26 In section 4.2 we described our general approach on the resilience of the Northern Ireland gas network within the draft determination. Our position is that GDN's should have accounted for resilience when designing the network and should provide any further resilience they consider necessary through the already defined price control mechanisms.

6.27 We have therefore not provided any additional allowance for resilience mains under security of supply and these projects have been excluded.

PNGL – Reinforcement mains – Security of supply

6.28 PNGL does not plan to lay any LP, 2Bar or 4Bar reinforcement mains during the GD23 price control period.

PNGL – Infill mains – Growth

6.29 PNGL submitted an allowance for passing a nominal 150 properties each year in GD23 under the same terms as the Belfast Infill project. As discussed in section 3.4 the general economic level of infill established in GD17 still applies. The table below summarises the submission and our determination.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.128	0.128	0.128	0.128	0.128	0.128	0.768
Business plan mains laid (m)	2145	2145	2,145	2,145	2,145	2,145	12,870
Business plan properties passed	150	150	150	150	150	150	900
DD investment (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DD mains laid (m)	0	0	0	0	0	0	0
DD properties passed	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.5: Infill mains summary

6.30 We have not included any infill in our determination. The uncertainty mechanism still applies and this will adjust for the actual number of properties passed. As discussed in section 4.19 and Table 4.1 any properties passed will receive an allowance of £76.36/m at 5.16m/pp in September 2020 prices.

PNGL – New build mains – Growth

6.31 The provision of gas mains to serve new development proposed by PNGL and our determination is summarised in Table 6.6.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.213	1.266	1.319	1.372	1.424	1.424	8.019
Business plan mains laid (m)	21,850	22,800	23,750	24,700	25,650	25,650	144,400
Business plan properties passed	2,300	2,400	2,500	2,600	2,700	2,700	15,200
DD investment (£m)	0.887	0.887	0.887	0.887	0.887	0.887	5.319
DD mains laid (m)	19,000	19,000	19,000	19,000	19,000	19,000	114,000
DD properties passed	2,000	2,000	2,000	2,000	2,000	2,000	12,000

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices
Note 2. The profiling of the allowance is different in the Pi model, the total allowance is the same.

Table 6.6: New build mains summary

6.32 In its business plan, PNGL proposed that we retain the 9.5m/pp for new build properties that was determined in GD17. FE also proposed this and the proposal has been accepted.

6.33 PNGL propose passing 2,300 properties in 2023 increasing to 2,700 in 2028. We have reduced the number to 2,000 properties each year. This will continue to be adjusted for actual numbers by the uncertainty mechanism.

6.34 The determination allowance is based on the GD23 basket of works unit rate and the mix of mains sizes included by PNGL in its business plan submission. In PNGL's case this results in an allowance of £46.66/m which is a decrease from the submission value of £55.53/m.

6.35 The profiling of this allowance is different in the Pi model included as part of the draft determination and this will be corrected for the final determination. The effect of the re-profiling ranges from -81k in to 2023 to +58k in 2028.

PNGL – Individually funded

6.36 PNGL included three individually funded projects during the GD23 price control period. These request the continuation of our previous decisions on Greater Belfast infill, Whitehead infill, and East Down infill.

6.37 PNGL propose to continue the allowances established in our previous decisions, adjusted for inflation to the GD23 price base.

6.38 The figure below summarises our decisions in reaching our draft determination for individually funded projects. Further detail is provided in subsequent sections.

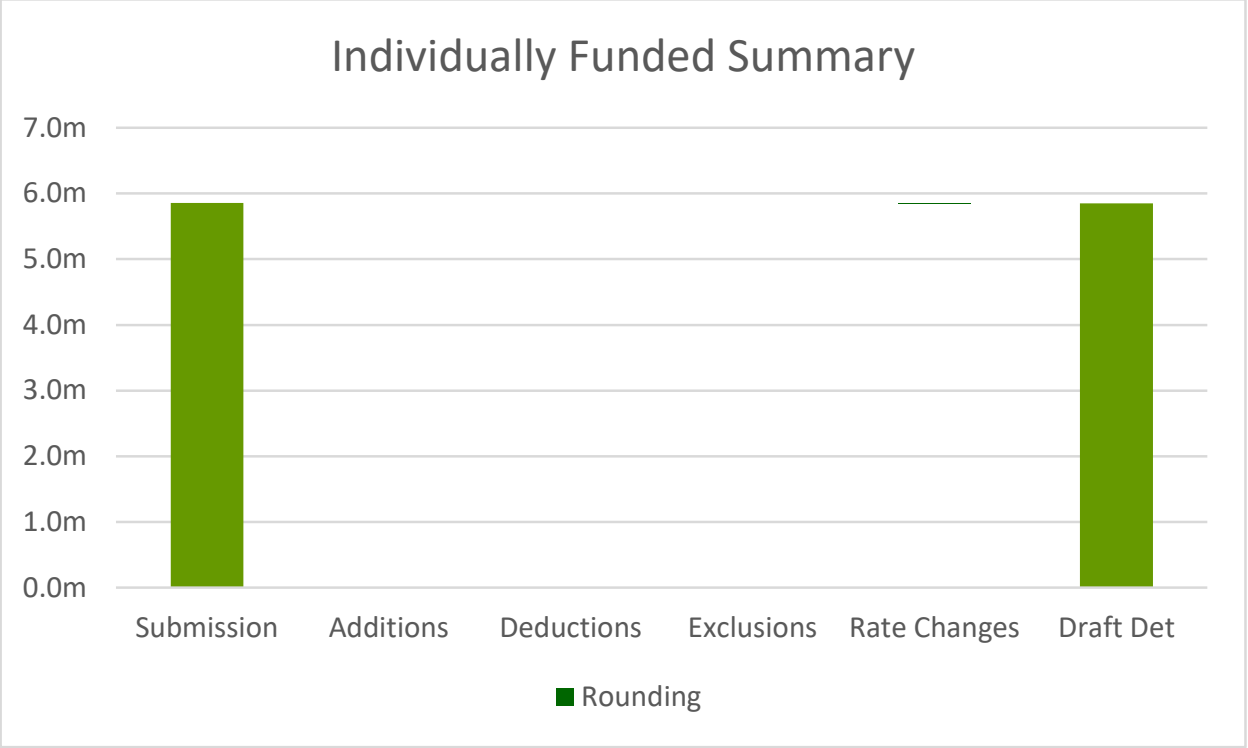


Figure 6.4: Individually funded projects summary

6.39 The table below summarises the business plan proposals for the cost of the project and our draft determination for individually funded mains.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	2.692	0.633	0.633	0.633	0.632	0.632	5.855
Business plan mains laid (m)	43,903	9,383	9,383	9,383	9,368	9,368	90,788
Business plan properties passed	3,129	715	715	715	714	714	6,702
DD investment (£m)	2.691	0.633	0.633	0.633	0.632	0.632	5.853
DD mains laid (m)	43,903	9,383	9,383	9,383	9,368	9,368	90,788
DD properties passed	3,129	715	715	715	714	714	6,702

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.7: Individually funded mains summary

6.40 We have accepted PNGL's proposal to roll forward our previous decisions. We have calculated a slightly different rate for the Greater Belfast infill project as shown in Table 4.3. PNGL requested £59.66/m, but when we adjusted our GD17 figure for inflation we got a value of £59.64/m and this is the rate that we have applied. Our rates for both Whitehead and East down agreed with PNGL's.

PNGL – District governors and pressure reduction stations

6.41 The figure below summarises our decisions in reaching our draft determination for pressure reduction. Further detail is provided in subsequent sections.

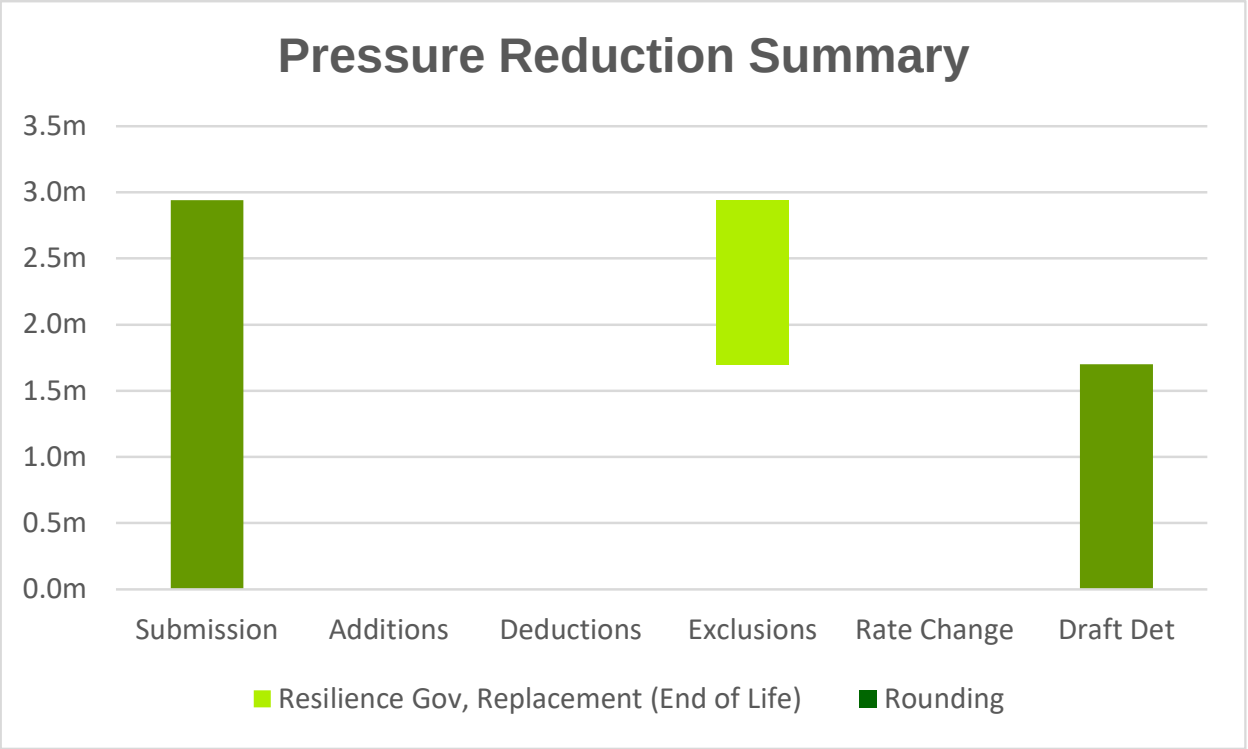


Figure 6.5: Pressure reduction summary

6.42 The table below summarises the business plan proposals and our draft determination for pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.263	0.238	0.384	0.430	0.775	0.850	2.941
Business plan PRS (nr)	69	53	70	55	64	52	363
DD investment (£m)	0.248	0.462	0.248	0.248	0.248	0.248	1.701
DD PRS (nr)	37	39	37	37	37	37	227

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.8: Pressure reduction summary

PNGL – Pressure reduction stations – Growth

6.43 PNGL included eight PRS's for growth in GD23. This consisted of two PRS's for reinforcement and six for resilience.

6.44 The table below summarises the business plan proposals and our draft determination for growth pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan growth (£m)	0.088	0.107	0.210	0.052	0.071	0.118	0.646
Business plan (nr)	1	2	2	1	1	1	8
Draft determination growth (£m)	0.000	0.214	0.000	0.000	0.000	0.000	0.214
Draft determination (nr)	0	2	0	0	0	0	2

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.9: Pressure reduction growth

6.45 We have included the reinforcement PRS's requested by PNGL at the proposed cost. This includes an allowance for the associated mains, at 56m for project 7.0.5 and 18m for project 7.0.6.

6.46 We have excluded the resilience PRS's for the same reasons as we excluded the resilience mains.

PNGL – Pressure reduction stations – Replacement

6.47 We reviewed the forecast activity volumes and costs associated with the replacement of PRS installations. PNGL did not include for the replacement of any PRS's as a consequence of growth.

6.48 The table below summarises the business plan proposals and our draft determination for replacement growth pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
BP replacement growth (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Business plan (nr)	0	0	0	0	0	0	0
DD replacement growth (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Draft determination (nr)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.10: Pressure reduction replacement growth

6.49 PNGL proposed replacing approximately 5% of its governor's in GD23 for end-of-life reasons, which equates to an average 20 year replacement schedule. Replacement rates for 2017-22 are running at 3%, which may suggest that PNGL are able to extend the life of PRSs. In our determination we have used the current run rate of 3% for both district and bin installations. We have used PNGL's business plan unit rates for estimating the allowance for end-of-life replacement of PRS's.

6.50 The table below summarises the business plan proposals and our draft determination for replacement end-of-life pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
BP replacement end-of-life (£m)	0.175	0.131	0.175	0.379	0.704	0.732	2.295
Business plan end-of-life (nr)	68	51	68	54	63	51	355
DD replacement end-of-life (£m)	0.248	0.248	0.248	0.248	0.248	0.248	1.487
Draft determination end-of-life (nr)	37	37	37	37	37	37	225

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.11: Pressure reduction replacement end-of-life

PNGL – Domestic service connections

6.51 The figure below summarises our decisions in reaching our draft determination for domestic services. Further detail is provided in subsequent sections.

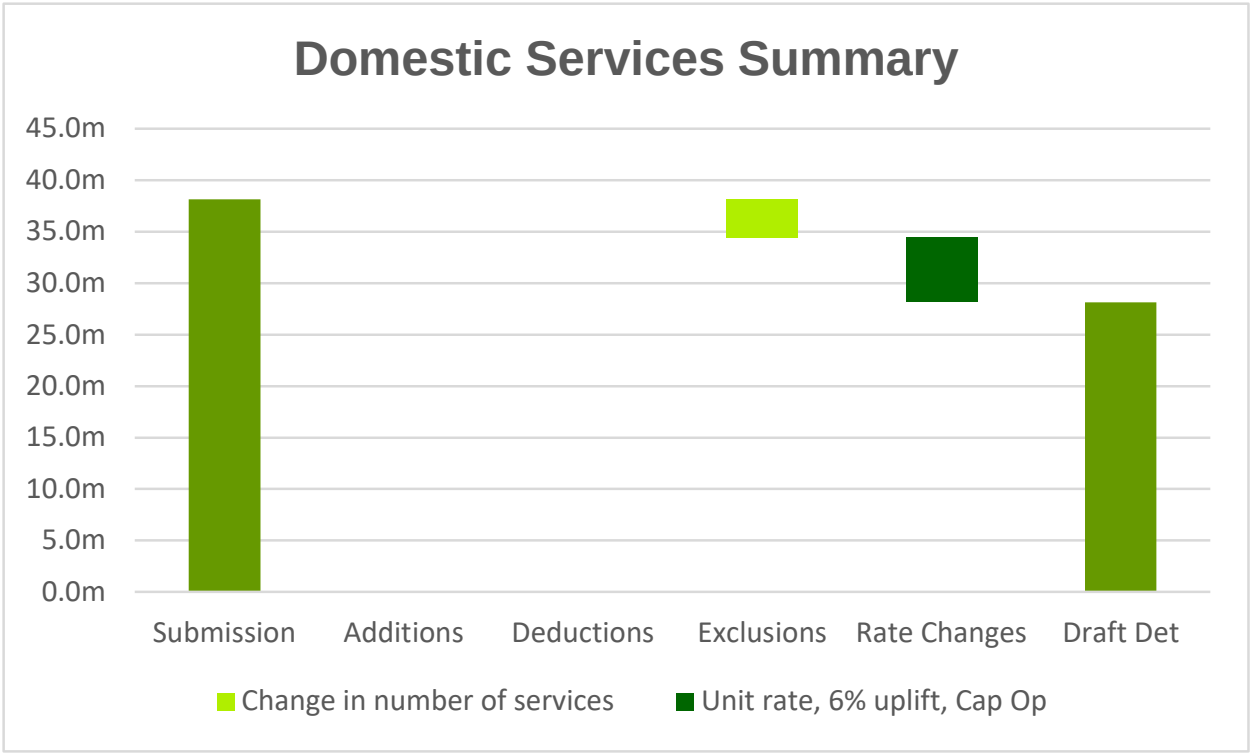


Figure 6.6: Domestic services summary

6.52 The table below summarises the business plan proposals and our draft determination for domestic services.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	6.993	6.666	6.261	6.151	6.100	5.984	38.154
BP domestic services (nr)	7,172	6,909	6,577	6,512	6,502	6,396	40,068
DD investment (£m)	5.467	5.166	4.865	4.516	4.214	3.914	28.142
DD domestic services (nr)	6,737	6,423	6,110	5,747	5,433	5,120	35,570

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.12: Domestic services summary

6.53 PNGL plan to connect 40,068 domestic customers over the GD23 price control period. This comprises of 15,200 of new build properties, 1,950 NIHE properties, and 22,918 owner occupier properties.

6.54 We have concluded that the company's projections for NIHE connections are reasonable. We have reduced the target number of new build and existing owner occupier connections in GD23 to 12,000 and 21,620 respectively, taking a more conservative approach. Further details can be found in Annex C – Connections and Volumes.

6.55 The profile of connections and investment in the determination is shown below in Table 6.13.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	6.993	6.666	6.261	6.151	6.100	5.984	38.154
BP new build services	2,300	2,400	2,500	2,600	2,700	2,700	15,200
BP owner occupied services	4,522	4,159	3,727	3,612	3,502	3,396	22,918
BP NIHE services	350	350	350	300	300	300	1,950
DD investment (£m)	5.467	5.166	4.865	4.516	4.214	3.914	28.142
DD new build services	2,000	2,000	2,000	2,000	2,000	2,000	12,000
DD owner occupied services	4,387	4,073	3,760	3,447	3,133	2,820	21,620
DD NIHE services	350	350	350	300	300	300	1,950

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.13: Domestic services investment by tenure

6.56 The existing property service unit rate in the business plan is c22% higher than 2017-20 outturn costs. This is further discussed in section 3.53. The new build service rate has increased by c49%.

6.57 We have applied the basket of works unit rates to estimate an appropriate allowance for the determination as they are the best indicator of actual cost.

PNGL – Domestic meters

6.58 The figure below summarises our decisions in reaching our draft determination for domestic meters. Further detail is provided in subsequent sections.

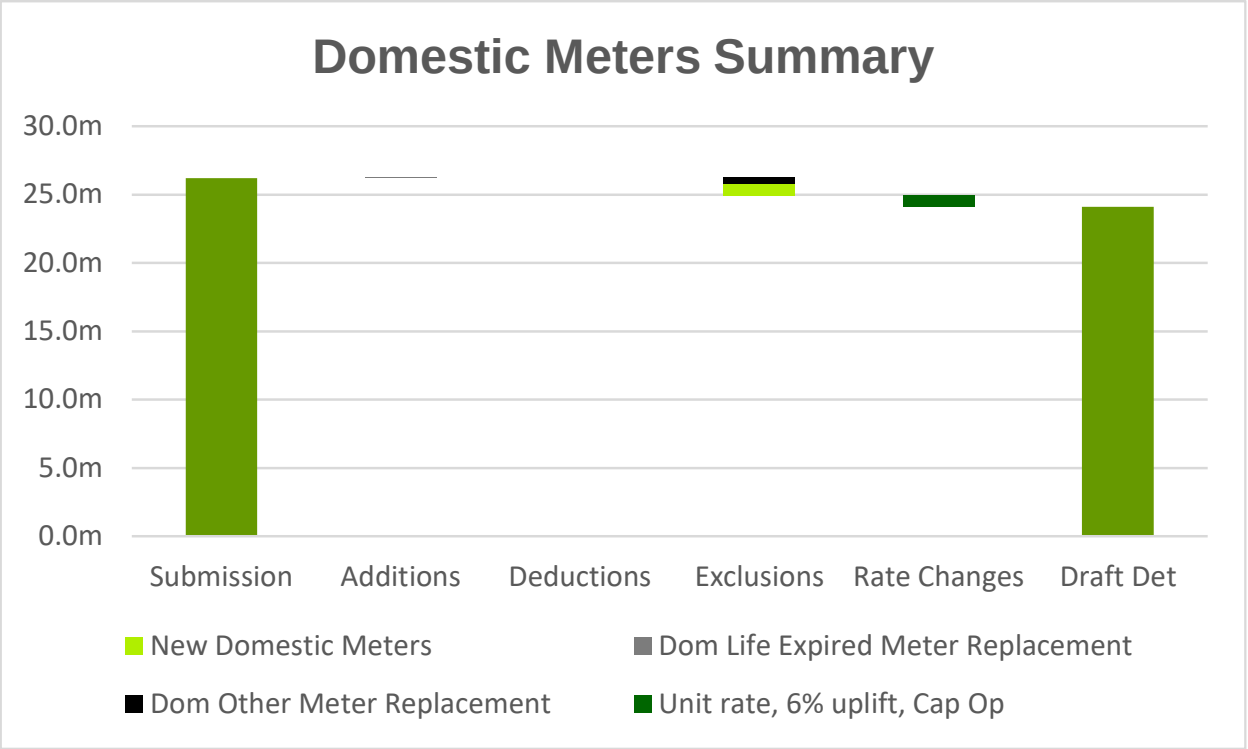


Figure 6.7: Domestic meters summary

6.59 The table below summarises the business plan proposals and our draft determination for domestic meters.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	4.221	4.438	4.828	4.671	4.103	3.949	26.209
BP domestic meters new (nr)	7,172	6,909	6,577	6,512	6,502	6,396	40,068
BP dom meters replacement (nr)	13,869	14,544	16,226	15,114	12,813	12,309	84,873
DD investment (£m)	3.961	4.146	4.507	4.297	3.701	3.505	24.117
DD domestic meters new (nr)	6,737	6,423	6,110	5,747	5,433	5,120	35,570
DD dom meters replacement (nr)	13,622	14,269	15,929	14,787	12,456	11,914	82,977

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.14: Domestic meters summary

PNGL – Domestic meters – Growth

6.60 PNGL's business plan included a domestic meter at each new connection.

6.61 We have decreased the number of domestic meters in the determination to reflect our decision to decrease the target number of new build and owner occupier connections (see paragraph 6.54).

6.62 The profile of connections and investment in the draft determination is shown in Table 6.15.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.308	1.258	1.194	1.181	1.178	1.158	7.277
BP dom meters new credit (nr)	3,199	3,098	2,967	2,948	2,952	2,908	18,071
BP dom meters new prepay (nr)	3,973	3,812	3,610	3,564	3,550	3,488	21,997
DD investment (£m)	1.299	1.239	1.178	1.107	1.046	0.986	6.855
DD dom meters new credit (nr)	3,112	2,966	2,820	2,665	2,519	2,373	16,454
DD dom meters new prepay (nr)	3,625	3,457	3,290	3,082	2,914	2,747	19,116

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.15: Domestic meters growth

6.63 We have applied the basket of works unit rates for U6 credit and prepayment meters and U16 credit meters to estimate an appropriate allowance for the determination.

PNGL – Domestic meter – replacement

6.64 PNGL propose replacing domestic meters after twenty years in line with the principle established in GD17.

6.65 PNGL has included an allowance for replacing meters for other reasons. These could be due to faults with meters among various other reasons. We have continued to include an allowance for this work in the determination. PNGL have not included any proposals to replace meter installations.

6.66 The table below summarises the business plan proposals and our draft determination for domestic meter replacements.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	2.913	3.180	3.633	3.490	2.925	2.791	18.933
BP domestic replacement EoL (nr)	9,411	9,950	11,502	10,264	7,838	7,209	56,174
BP dom replacement other (nr)	4,458	4,594	4,724	4,850	4,975	5,100	28,699
BP dom repl reg & instal EoL (nr)	0	0	0	0	0	0	0
DD investment (£m)	2.661	2.907	3.329	3.190	2.655	2.519	17.261
DD domestic replacement EoL (nr)	9,432	9,968	11,521	10,279	7,854	7,222	56,275
DD dom replacement other (nr)	4,190	4,302	4,408	4,508	4,602	4,691	26,701
DD dom repl reg & instal EoL (nr)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.16: Domestic meter replacements

6.67 We have applied the basket of works unit rates for meter replacements to estimate an appropriate allowance for the determination.

6.68 We have accepted the PNGL profile for end-of-life replacements. PNGL allocates all U16 meters as I&C. We have made an adjustment to allocate a small amount of U16 meters as domestic. This accounts for the difference in our number of replacement meters for end-of life reasons.

6.69 We have adjusted the PNGL profile for other replacements to reflect the actual average from 2017 to 2020. This results in a slight decrease in the number of replacements for other reasons.

PNGL – Industrial and commercial service connections

6.70 The figure below summarises our decisions in reaching our draft determination for industrial and commercial services. Further detail is provided in subsequent sections.

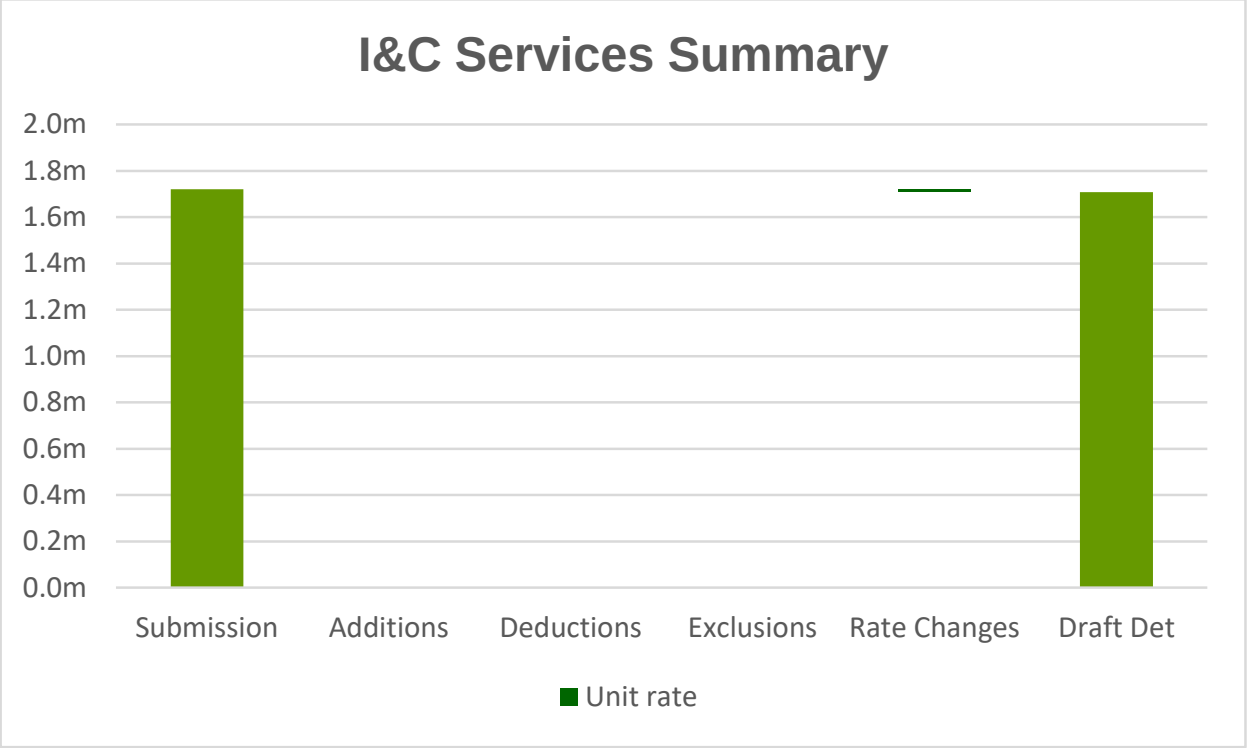


Figure 6.8: Industrial and commercial services summary

6.71 The table below summarises the business plan proposals and our draft determination for Industrial and commercial services.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.307	0.319	0.311	0.254	0.268	0.262	1.721
BP I&C services (nr)	150	150	150	125	125	125	825
DD investment (£m)	150	150	150	125	125	125	825
DD I&C services (nr)	0.303	0.319	0.308	0.251	0.269	0.259	1.708

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.17: Industrial and commercial services summary

6.72 PNGL plan to connect 825 I&C customers over the GD23 period. We have accepted the numbers of I&C connections proposed by PNGL.

6.73 We have applied the basket of works unit rates, as they are the best indicator of actual cost, to estimate an appropriate allowance for the determination.

PNGL – Industrial and commercial meters

6.74 The figure below summarises our decisions in reaching our draft determination for industrial and commercial meters. Further detail is provided in subsequent sections.

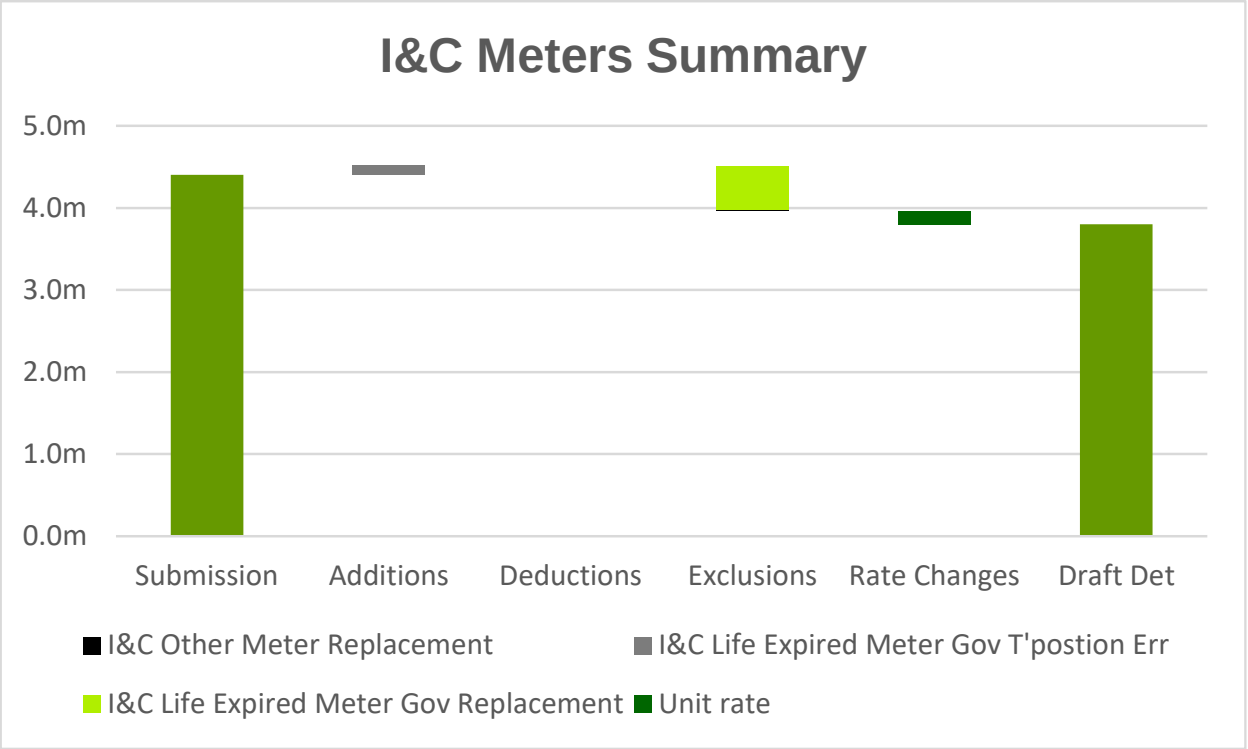


Figure 6.9: Industrial and commercial meters summary

6.75 The table below summarises the business plan proposals and our draft determination for Industrial and commercial meters.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.809	0.864	0.728	0.556	0.750	0.698	4.407
BP I&C meters new (nr)	150	150	150	125	125	125	825
BP I&C meters replacement (nr)	950	815	730	530	522	492	4,040
DD investment (£m)	0.680	0.679	0.628	0.487	0.703	0.626	3.803
DD I&C meters new (nr)	150	150	150	125	125	125	825
DD I&C meters replacement (nr)	886	728	690	506	511	485	3,805

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.18: Industrial and commercial meters summary

PNGL – Industrial and commercial meters – Growth

6.76 PNGL's business plan included an industrial and commercial meter at each new connection. We have accepted the numbers of industrial and commercial connections proposed by PNGL. The profile of connections and investment in the draft determination is shown in Table 6.19.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.306	0.346	0.322	0.247	0.296	0.272	1.790
BP I&C meters new (nr)	150	150	150	125	125	125	825
DD investment (£m)	0.191	0.243	0.206	0.150	0.214	0.174	1.178
DD I&C meters new (nr)	150	150	150	125	125	125	825

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.19: Industrial and commercial meters growth

6.77 Our allowances have been calculated by applying the appropriate basket of works unit rate to the number of I&C meters of each size proposed by PNGL in the business plan.

PNGL – Industrial and commercial meters – Replacement

6.78 PNGL propose to continue the replacement of industrial and commercial meters after twenty years in line with the principle established in GD17.

6.79 PNGL includes an allowance for replacing meters for other reasons. These could be due to faults with meters among various other reasons. We have continued to include an allowance for this work in the determination.

6.80 PNGL have introduced a new work stream to replace large (u65 and above) meter cabinets and rigs after 30 years.

6.81 In addition to this, PNGL are proposing to install retrofit kits when replacing the LP regulators as the result of regulator obsolescence (i.e. a retrofit kit is needed to allow for the installation of the new style regulators).

6.82 The table below summarises the business plan proposals and our draft determination for industrial and commercial meter replacements.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.503	0.518	0.405	0.309	0.454	0.427	2.617
BP I&C replacement EoL (nr)	775	615	576	390	379	332	3,067
BP I&C replacement other (nr)	114	116	118	120	122	124	715
BP I&C repl reg & instal EoL (nr)	61	84	36	20	21	36	258
DD investment (£m)	0.489	0.436	0.422	0.338	0.489	0.451	2.625
DD I&C replacement EoL (nr)	775	615	576	390	379	332	3,067
DD I&C replacement other (nr)	111	113	114	115	116	117	685
DD I&C repl reg & instal EoL (nr)	0	0	0	1	16	36	53

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.20: Industrial and commercial meters replacement

6.83 We have applied the basket of works unit rates for meter replacements to estimate an appropriate allowance for the determination.

6.84 We have accepted the PNGL profile for end-of-life replacements.

6.85 We have adjusted the PNGL profile for other replacements to reflect the outturn average from 2017 to 2020. This results in a small decrease in the number of replacements for other reasons.

6.86 PNGL's response to PNGL-078 confirmed that the number of cabinet and rig replacements was 53. This was close to our initial estimate so we have accepted the PNGL profile on this basis. As this is a new work stream there are no existing unit rates available. PNGL asked its contractor to provide a rate for U65 to U1000 meters and PNGL made its own estimate for larger sizes.

6.87 We tested PNGL's business plan cost against its own outturn costs for the period 2017-20 in our basket of works analysis and found that there was a 12.7% uplift overall. As we don't have access to any additional information to validate the unit rates supplied by PNGL we have applied a 12.7% reduction in line with our overall findings. We would welcome any additional information PNGL can supply in its response to the draft determination to validate the unit rates.

6.88 With respect to the installation of retrofit kits for low pressure regulators, in the GD17 final determination (paragraph 7.151) we provided an allowance to replace meters and closely associated components. It is unclear why this work is not covered under the GD17 allowances and why PNGL need to revisit these meters. We also note that PNGL have replaced many more meters than the GD17 determination forecast (i.e. the 4 year forecast was

243 meters against an actual of 373, and the 6 year GD17 forecast was 352 against a current forecast of 605).

6.89 We will ask PNGL to clarify its position on this work stream in its response to the draft determination. We will ask it to explain the need for the work, what work is involved, why it was not previously covered in GD17 and the reason for the increase in the number of meters which have reached a 20 year life. At this stage we have not included any allowance for this work in the draft determination.

PNGL – Other capex

6.90 The figure below summarises our decisions in reaching our draft determination for other capex. Further detail is provided in subsequent sections.

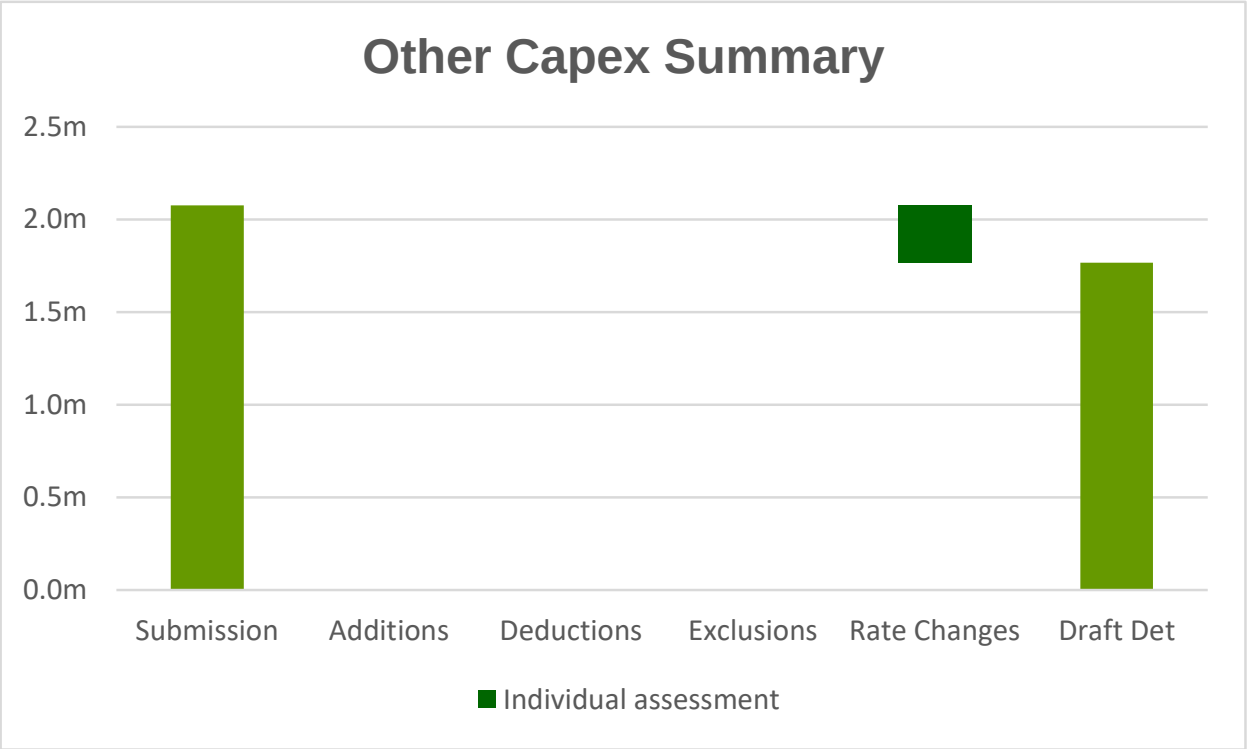


Figure 6.10: Other capex summary

6.91 The table below summarises the business plan proposals and our draft determination for other capex.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.481	0.342	0.247	0.282	0.267	0.456	2.077
DD investment (£m)	0.420	0.308	0.213	0.248	0.183	0.395	1.766

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.21: Other capex summary

6.92 We reduced the cost of replacement of desktop hardware from circa £177k to 150k in 2023 and 2028, and reduced the total of other IT costs to £150k each year. We moved the costs in 2027 associated with UPS to a 10 year cycle following advice from the company. Other costs have been accepted as submitted.

PNGL – Traffic management act

6.93 As in previous price controls, we have allowed a ring fenced allowance for TMA equivalent to 10% of the allowances for main laying and service laying activities.

PNGL – Customer contributions

6.94 We have made an adjustment to account for customer contributions relating to capex expenditure. PNGL included an estimate of c1% for customer contributions in its business plan submission. We have used the four year average from 2017-20 to make the adjustment. This equates to a figure of c2.8% for PNGL.

PNGL – Summary of findings

6.95 In Table 6.22 below we have set out a summary of the PNGL's capex submission and our total capex allowance pre and post frontier shift for the draft determination. This includes a final adjustment for customer contributions.

September 2020	2023	2024	2025	2026	2027	2028	GD23
PNGL business plan submission (£m)							
7 Bar Mains	1.469	2.939	3.638	4.325	1.361	0.000	13.731
LP, 2Bar or 4Bar Mains	2.139	2.160	2.026	2.113	2.018	2.176	12.631
Individually Funded	2.692	0.633	0.633	0.633	0.632	0.632	5.855
Pressure Reduction	0.263	0.238	0.384	0.430	0.775	0.850	2.941
Domestic Services	6.993	6.666	6.261	6.151	6.100	5.984	38.154
Domestic Meters	4.221	4.438	4.828	4.671	4.103	3.949	26.209
I&C Services	0.307	0.319	0.311	0.254	0.268	0.262	1.721
I&C Meters	0.809	0.864	0.728	0.556	0.750	0.698	4.407
Other Capex	0.481	0.342	0.247	0.282	0.267	0.456	2.077
TMA	1.091	1.208	1.224	1.284	0.975	0.842	6.624
Totals	20.465	19.806	20.279	20.699	17.250	15.849	114.349
UR draft determination pre FS (£m)							
7 Bar Mains	1.114	1.585	1.960	1.733	0.000	0.000	6.392
LP, 2Bar or 4Bar Mains	0.887	0.887	0.887	0.887	0.887	0.887	5.319
Individually Funded	2.691	0.633	0.633	0.633	0.632	0.632	5.853
Pressure Reduction	0.248	0.462	0.248	0.248	0.248	0.248	1.701
Domestic Services	5.467	5.166	4.865	4.516	4.214	3.914	28.142
Domestic Meters	3.961	4.146	4.507	4.297	3.701	3.505	24.117
I&C Services	0.303	0.319	0.308	0.251	0.269	0.259	1.708
I&C Meters	0.680	0.679	0.628	0.487	0.703	0.626	3.803
Other Capex	0.420	0.308	0.213	0.248	0.183	0.395	1.766
TMA	1.046	0.859	0.865	0.802	0.600	0.569	4.741
Totals	16.816	15.042	15.113	14.101	11.436	11.035	83.543
UR draft determination post FS (£m)							
7 Bar Mains	1.102	1.555	1.917	1.699	0.000	0.000	6.273
LP, 2Bar or 4Bar Mains	0.878	0.870	0.867	0.869	0.870	0.871	5.224
Individually Funded	2.664	0.621	0.619	0.620	0.620	0.620	5.764
Pressure Reduction	0.245	0.453	0.242	0.243	0.243	0.243	1.670
Domestic Services	5.413	5.067	4.758	4.426	4.134	3.843	27.642
Domestic Meters	3.921	4.067	4.408	4.211	3.631	3.442	23.680
I&C Services	0.300	0.313	0.301	0.246	0.264	0.255	1.677
I&C Meters	0.673	0.666	0.614	0.477	0.689	0.614	3.735
Other Capex	0.416	0.302	0.208	0.243	0.180	0.388	1.736
TMA	1.036	0.843	0.846	0.786	0.589	0.559	4.658
Totals	16.648	14.756	14.781	13.819	11.219	10.836	10.003
Contributions @ -2.78%	-0.464	-0.411	-0.412	-0.385	-0.312	-0.302	-2.285
Totals (Post FS, Net of Contributions)	16.184	14.345	14.369	13.434	10.907	10.534	79.773

Note 1. Figures may not sum due to rounding. Gross figures, September 2020 prices

Table 6.22: PNGL draft determination capex allowance

PNGL – Capital expenditure assumptions post GD23

6.96 We made the following assumptions to include a reasonable allowance of capital expenditure post GD23 for the purpose of modelling GD23 tariffs:

- PNGL did not identify any 7 bar mains post GD23 and so no allowance has been made in our long term projections.
- Infill will be completed in the GD23 period so none is included post GD23.
- We have included an allowance for mains to serve new development based on an average of 2,000 new build properties per annum and a length of 9.5 metres of gas main per property.
- PNGL did not identify individually funded projects post GD23 and no allowance has been made in our long term projections as the GD23 projects should be complete.
- We continued both growth and replacement of pressure reducing stations in line with our GD23 determination post GD23.
- We have included the costs of meters and services by extending the connection profiles for both domestic and industrial and commercial properties.
- We have allowed for the replacement of domestic meters, I&C meters based on a 20 year life.
- We have allowed for the replacement of I&C meter installations based on a 30 year life.
- We have continued the level of other capex based on the 2017-20 average.
- We have continued an allowance for TMA costs at 10% of mains and services.
- We have not applied real price effects or frontier shift to estimated expenditure post GD23.

7. SGN – UR Proposals

SGN – Overview

7.1 SGN's business plan included capital investment of £36.2m for the GD23 price control period in average 2020 prices. The draft determination allows capital investment of £20.8m following the application of the frontier shift net of customer contributions.

7.2 All figures in this chapter are gross figures, i.e. before the application of frontier shift or adjustments for customer contributions, unless otherwise stated. Prices are average 2020 unless otherwise stated.

7.3 The figure below summarises our decisions in reaching our draft determination for GD23.

7.4 In the figure, and elsewhere in this chapter, additions relate to expenditure for either a business plan omission or a transfer of expenditure from another category. Deductions relate to a transfer of expenditure to another category, and exclusions relate to expenditure that has not been approved either in principle or due to an adjustment of units.

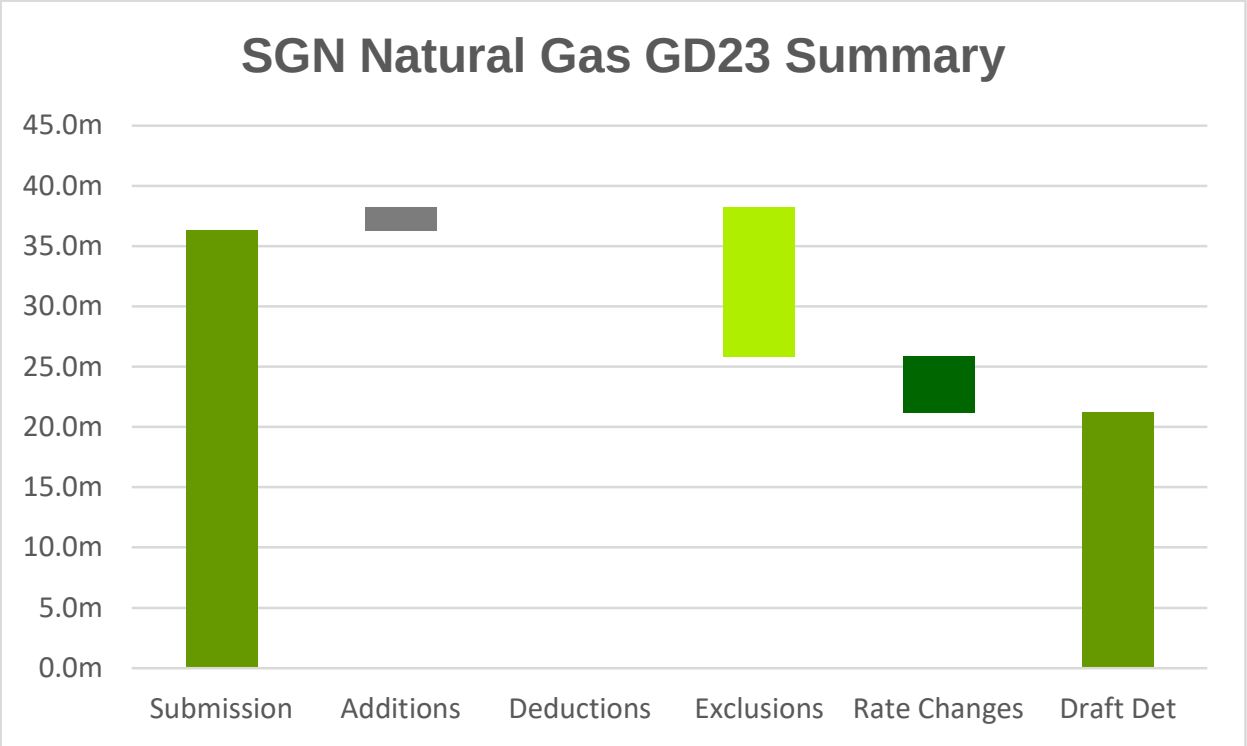


Figure 7.1: GD23 draft determination summary

7.5 The table below summarises the business plan proposals for the GD23 price control period and our draft determination for GD23.

Investment category	Sub	Adj sub	Excl	Rates change	Rates change	DD
7 Bar Mains	0.0	0.0	0.0	0.0	0%	0.0
LP, 2Bar or 4Bar Mains	19.9	20.3	-6.0	-2.0	-14%	12.3
Individually Funded	0.0	0.0	0.0	0.0	0%	0.0
Pressure Reduction	2.8	2.8	-2.8	0.0	0%	0.0
Domestic Services	7.5	7.5	-1.3	-2.5	-40%	3.8
Domestic Meters	1.0	1.0	-0.2	0.0	5%	0.9
I&C Services	2.4	2.4	-0.6	-0.5	-30%	1.3
I&C Meters	0.9	0.9	-0.2	0.3	50%	1.0
Other Capex	0.3	0.3	0.0	0.0	0%	0.3
TMA	1.5	3.0	-1.3	0.0	0%	1.7
Total	36.3	38.2	-12.4	-4.7	-18%	21.2
Total (post FS, net of contributions)						20.8

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.1: GD23 draft determination summary

7.6 Detailed information on the assessment of the business plan is provided in the subsequent sections.

SGN – Detailed assessment

SGN – 7 bar mains

7.7 SGN does not plan to lay any 7 bar mains during the GD23 price control period.

SGN – Low and medium pressure mains

7.8 The figure below summarises our decisions in reaching our draft determination for low and medium pressure mains. Further detail is provided in subsequent sections.

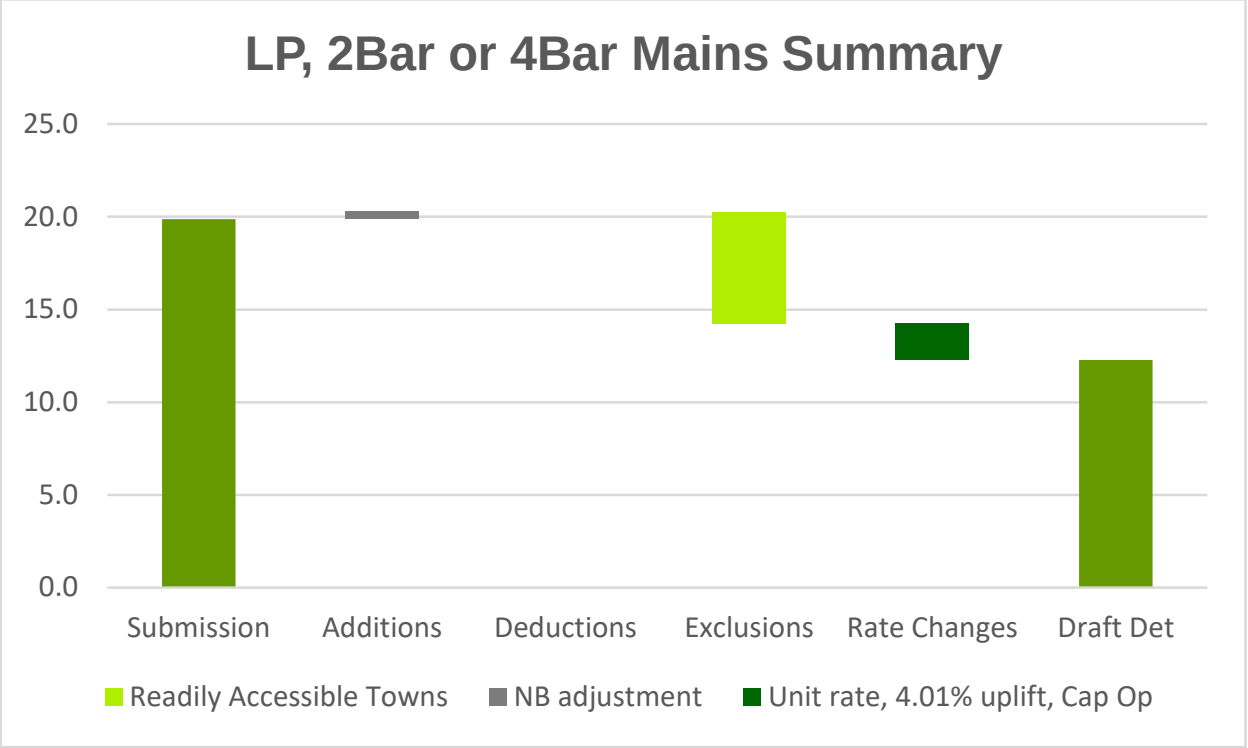


Figure 7.2: LP, 2Bar or 4Bar mains summary

7.9 The table below summarises the business plan proposals and our draft determination for LP, 2Bar or 4Bar mains.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	3.527	3.399	3.234	4.855	2.718	2.135	19.869
Business plan mains laid (m)	39,662	38,044	35,666	49,886	29,116	23,213	215,587
DD investment (£m)	2.094	1.837	2.401	2.713	1.419	1.815	12.280
DD mains laid (m)	27,693	24,374	31,612	35,435	18,612	23,622	161,347

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.2: LP, 2Bar or 4Bar mains summary

SGN – Resilience mains – Security of supply

7.10 SGN submitted a paper on security of supply as part of its business plan. The paper did not include any resilience mains in GD23. Two possible projects were signalled for GD29; a link from Omagh to Strabane and a duelling of the pipeline from outside Dungannon to Cookstown.

7.11 In section 4.2 we describe our general approach on the resilience of the Northern Ireland gas network within the draft determination. We assume that SGN is constructing the network with resilience in mind. We also understand that SGN is not stating that these projects will be required in GD29 at this

point. However if these projects were considered necessary in GD29, then they would be subject to the considerations set out in section 4.2, including why they were not addressed during the initial design and included in the economic assessment of the Gas to the West project.

SGN – Reinforcement mains – Security of supply

7.12 SGN does not plan to lay any reinforcement mains during the GD23 price control period.

SGN – Infill mains – Growth

7.13 SGN plan to complete the infill of the existing eight core towns in GD23. In addition, it has submitted proposals to infill a further nine readily accessible towns. SGN have also identified a further five towns which could be developed in the future but are not included in the submission. The table below summarises the submission and our determination.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	3.527	3.399	3.234	4.855	2.718	2.135	19.869
Business plan mains laid (m)	39,662	38,044	35,666	49,886	29,116	23,213	215,587
Business plan properties passed	2,944	2,873	3,181	4,414	1,794	1,736	16,942
DD investment (£m)	1.992	1.734	2.308	2.658	1.378	1.793	11.864
DD mains laid (m)	25,793	22,445	29,883	34,409	17,842	23,213	153,585
DD properties passed	1,908	1,723	2,797	3,511	1,025	1,736	12,700

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.3: Infill mains summary

7.14 In section 4.21 above, we described our approach for setting allowances in GD23 for infill mains. We concluded that an allowance for additional properties passed should be set at 11.5m per property passed. We have maintained the three banded rates established in GD17 for SGN, adjusted for inflation in GD23 as follows:

- A rate of £76.33/m applies for mains up to 90mm.
- A rate of £102.03/m applies for mains greater than 90mm and up to 200mm.
- A rate of £182.81/m applies for mains greater than 200mm.

7.15 This continues to allow SGN the freedom to prioritise mains and deliver the work in the most economic manner without any concern over the marginal economic viability of the work left to be completed in GD23.

7.16 We are not allowing the expansion to the readily accessible towns at this time, as described in paragraph 4.24. Therefore no allowance has been made for these mains.

SGN – New build mains – Growth

7.17 The provision of gas mains to serve new development proposed by SGN is summarised in Table 7.4.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Business plan mains laid (m)	0	0	0	0	0	0	0
Business plan properties passed	0	0	0	0	0	0	0
DD investment (£m)	0.102	0.103	0.093	0.055	0.041	0.022	0.416
DD mains laid (m)	1,900	1,929	1,729	1,026	770	409	7,762
DD properties passed	200	203	182	108	81	43	817

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.4: New build mains summary

7.18 SGN did not include any proposals for passing new build properties in its business plan submission.

7.19 In the absence of further information and considering the small number of new build properties that have been passed in GD17 to date, we have rolled over our GD17 assessment for SGN. This works out to be £53.59/m in average 2020 prices at 9.5m per property passed. This will continue to be adjusted for actual numbers by the uncertainty mechanism.

SGN – Individually funded

7.20 SGN does not plan to deliver any individually funded projects during the GD23 price control period.

SGN – District governors and pressure reduction stations

7.21 The figure below summarises our decisions in reaching our draft determination for pressure reduction. Further detail is provided in subsequent sections.

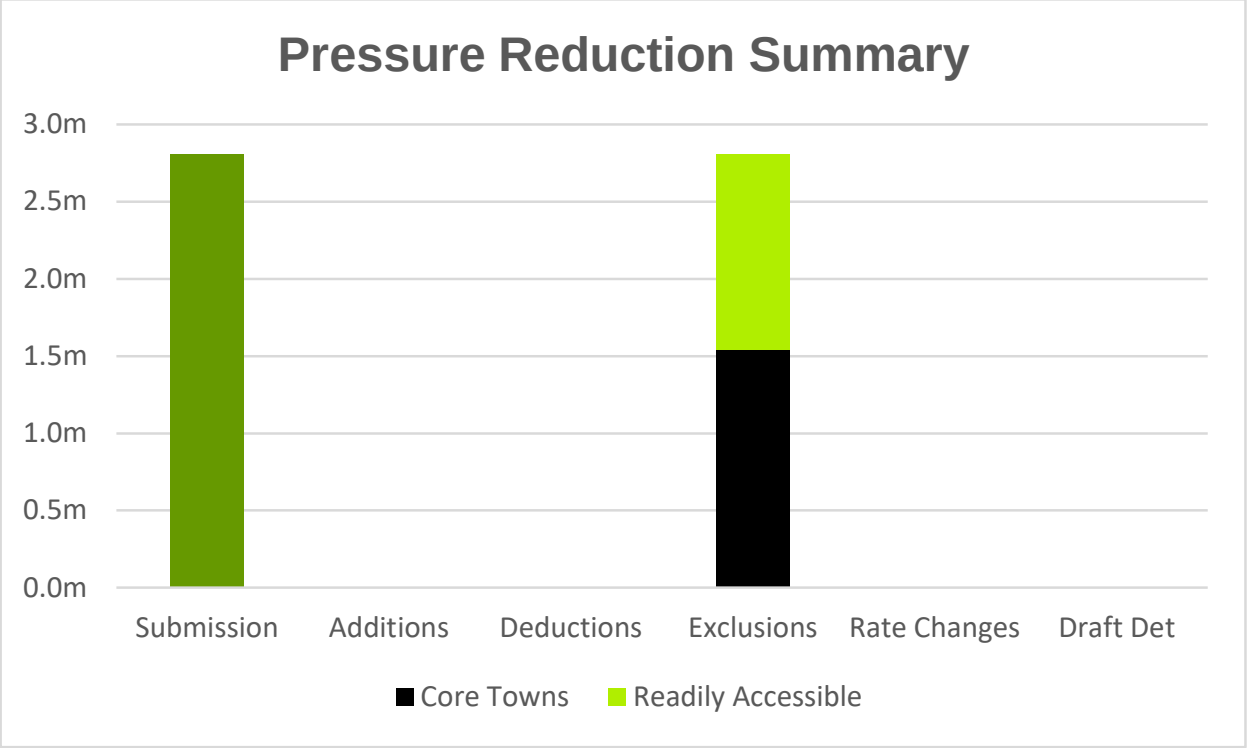


Figure 7.3: Pressure reduction summary

7.22 The table below summarises the business plan proposals and our draft determination for pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.712	0.519	0.242	0.896	0.438	0.000	2.806
Business plan PRS (nr)	7	7	2	11	11	0	38
DD investment (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
DD PRS (nr)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.5: Pressure reduction summary

SGN – Pressure reduction stations – Growth

7.23 We reviewed the forecast activity volumes and costs associated with PRS installations. The proposals for growth consist of two parts.

7.24 The first is for 13 PRSs associated with the readily accessible towns. As we have not provided any allowance for infilling these towns the PRSs are not required.

7.25 The second is for 25 PRSs within the core towns. As set out in paragraph 4.34, the funding already exists to install these PRSs if they are required.

The order in which projects are constructed is matter for the GDN's to choose and so these PRSs have not been allowed so that consumers do not pay twice.

7.26 The table below summarises the business plan proposals and our draft determination for growth pressure reduction.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan growth (£m)	0.712	0.519	0.242	0.896	0.438	0.000	2.806
Business plan (nr)	7	7	2	11	11	0	38
Draft determination growth (£m)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Draft determination (nr)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.6: Pressure reduction growth

SGN – Pressure reduction stations – Replacement

7.27 SGN does not plan to replace any pressure reducing stations during the GD23 price control period.

SGN – Domestic service connections

7.28 The figure below summarises our decisions in reaching our draft determination for domestic services. Further detail is provided in subsequent sections.

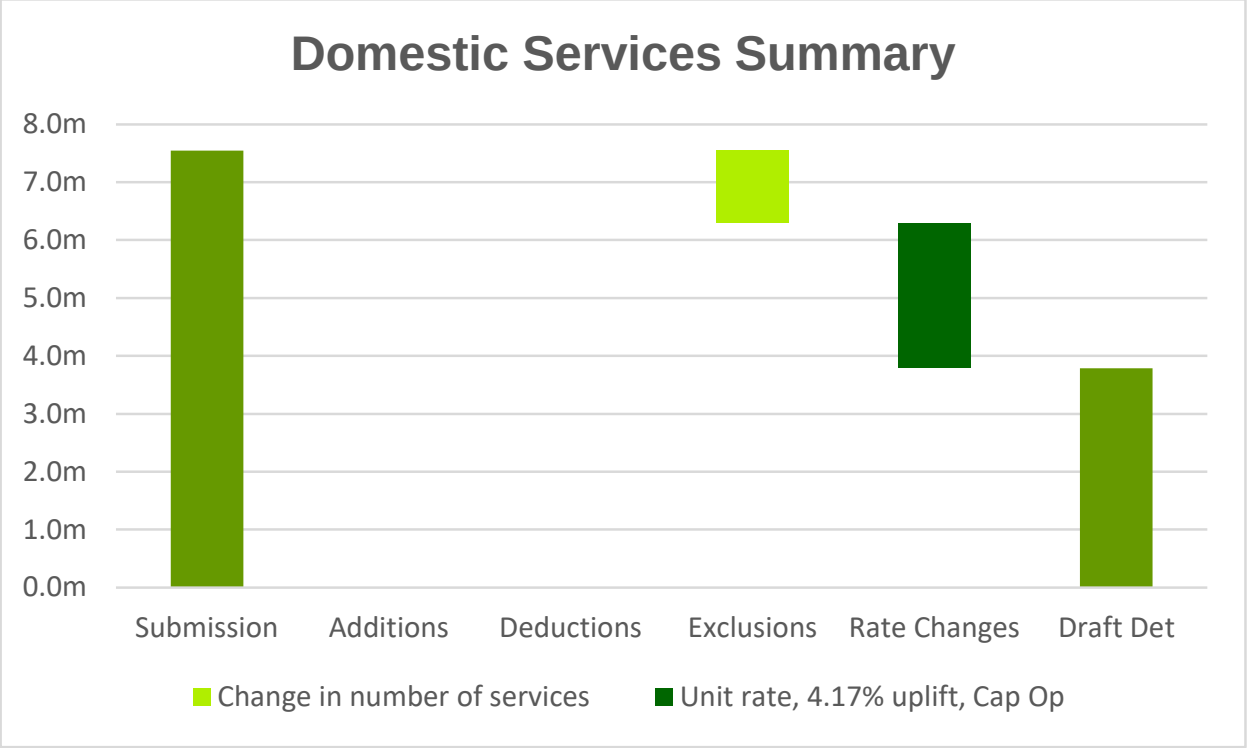


Figure 7.4: Domestic services summary

7.29 The table below summarises the business plan proposals and our draft determination for domestic services.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.281	1.199	1.270	1.295	1.184	1.315	7.544
BP domestic services (nr)	912	849	873	940	812	867	5,253
DD investment (£m)	0.855	0.806	0.662	0.602	0.499	0.360	3.784
DD domestic services (nr)	999	949	787	685	564	399	4,383

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.7: Domestic services summary

7.30 SGN plan to connect 5,253 domestic customers over the GD23 price control period. This comprises of 817 new build properties, 686 NIHE properties and 3,750 owner occupier properties.

7.31 We have concluded that the company's projections of new build connections are reasonable. We have reduced the target number of NIHE and existing owner occupier connections in GD23 to 293 and 3,273 respectively taking a more conservative approach. Further details can be found in Annex C – Connections and Volumes.

7.32 The profile of connections and investment in the determination is shown in Table 7.8.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	1.281	1.199	1.270	1.295	1.184	1.315	7.544
BP new build services	200	203	182	108	81	43	817
BP owner occupied services	623	593	599	652	643	640	3,750
BP NIHE services	89	53	92	180	88	184	686
DD investment (£m)	0.855	0.806	0.662	0.602	0.499	0.360	3.784
DD new build services	200	203	182	108	81	43	817
DD owner occupied services	735	659	583	508	432	356	3,273
DD NIHE services	64	87	22	69	51	0	293

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.8: Domestic services investment by tenure

7.33 The existing property service unit rate in the business plan is c51% higher than 2017-20 outturn costs. This is discussed further in section 3.53. The new build service rate has increased by c75%.

7.34 We have applied the basket of works unit rates to estimate an appropriate allowance for the determination as they are the best indicator of actual cost.

SGN – Domestic meters

7.35 The figure below summarises our decisions in reaching our draft determination for domestic meters. Further detail is provided in subsequent sections.

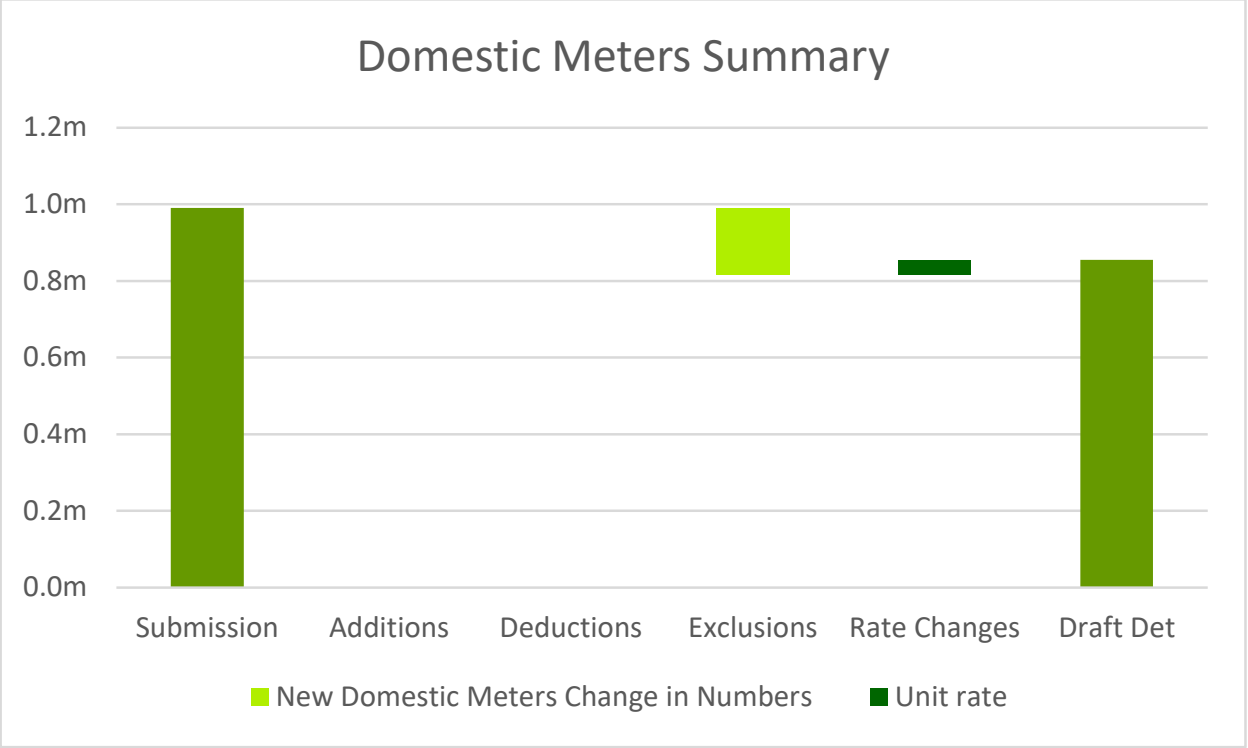


Figure 7.5: Domestic meters summary

7.36 The table below summarises the business plan proposals and our draft determination for domestic meters.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.170	0.158	0.168	0.171	0.151	0.172	0.990
BP domestic meters new (nr)	912	849	873	940	812	867	5,253
BP dom meters replacement (nr)	0	0	0	0	0	0	0
DD investment (£m)	0.195	0.187	0.154	0.134	0.110	0.076	0.855
DD domestic meters new (nr)	999	949	787	685	564	399	4,383
DD dom meters replacement (nr)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.9: Domestic meters summary

SGN – Domestic meters – Growth

7.37 SGN's business plan included a domestic meter at each new connection.

7.38 We have decreased the number of domestic meters in the determination to reflect our decision to decrease the target number of NIHE and owner occupier connections (see paragraph 7.31).

7.39 The profile of connections and investment in the draft determination is shown in Table 7.10.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.170	0.158	0.168	0.171	0.151	0.172	0.990
BP dom meters new credit (nr)	332	315	318	343	335	333	1,976
BP dom meters new prepay (nr)	580	534	555	597	477	534	3,277
DD investment (£m)	0.195	0.187	0.154	0.134	0.110	0.076	0.855
DD dom meters new credit (nr)	388	350	309	267	226	184	1,724
DD dom meters new prepay (nr)	610	599	478	418	338	215	2,659

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.10: Domestic meters growth

7.40 We have applied the basket of works unit rates for U6 credit and prepayment meters and U16 credit meters to estimate an appropriate allowance for the determination.

SGN – Domestic meter – replacement

7.41 SGN does not plan to replace any domestic meters during the GD23 price control period.

SGN – Industrial and commercial service connections

7.42 The figure below summarises our decisions in reaching our draft determination for industrial and commercial services. Further detail is provided in subsequent sections.

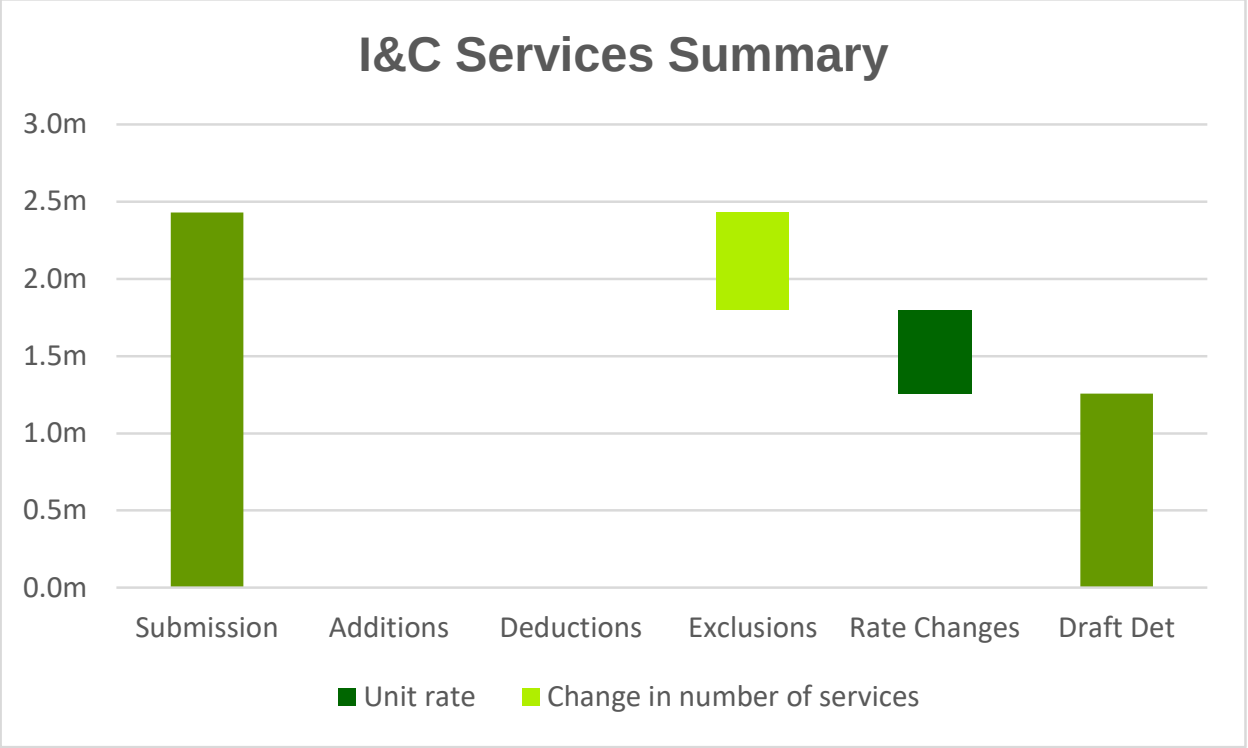


Figure 7.6: Industrial and commercial services summary

7.43 The table below summarises the business plan proposals and our draft determination for domestic services.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.192	0.269	0.365	0.557	0.539	0.507	2.430
BP I&C services (nr)	60	84	111	182	165	150	752
DD investment (£m)	0.110	0.145	0.182	0.299	0.277	0.244	1.256
DD I&C services (nr)	45	60	81	135	123	112	556

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.11: Industrial and commercial services summary

7.44 SGN plan to connect 752 I&C connections over the GD23 period. We have reduced the numbers of I&C connections proposed by SGN to reflect its experience in GD17 and to provide the opportunity to outperform. Further details can be found in Annex C – Connections and Volumes.

7.45 We have applied the basket of works unit rates, as they are the best indicator of actual cost, to estimate an appropriate allowance for the determination.

SGN – Industrial and commercial meters

7.46 The figure below summarises our decisions in reaching our draft determination for industrial and commercial meters. Further detail is provided in subsequent sections.

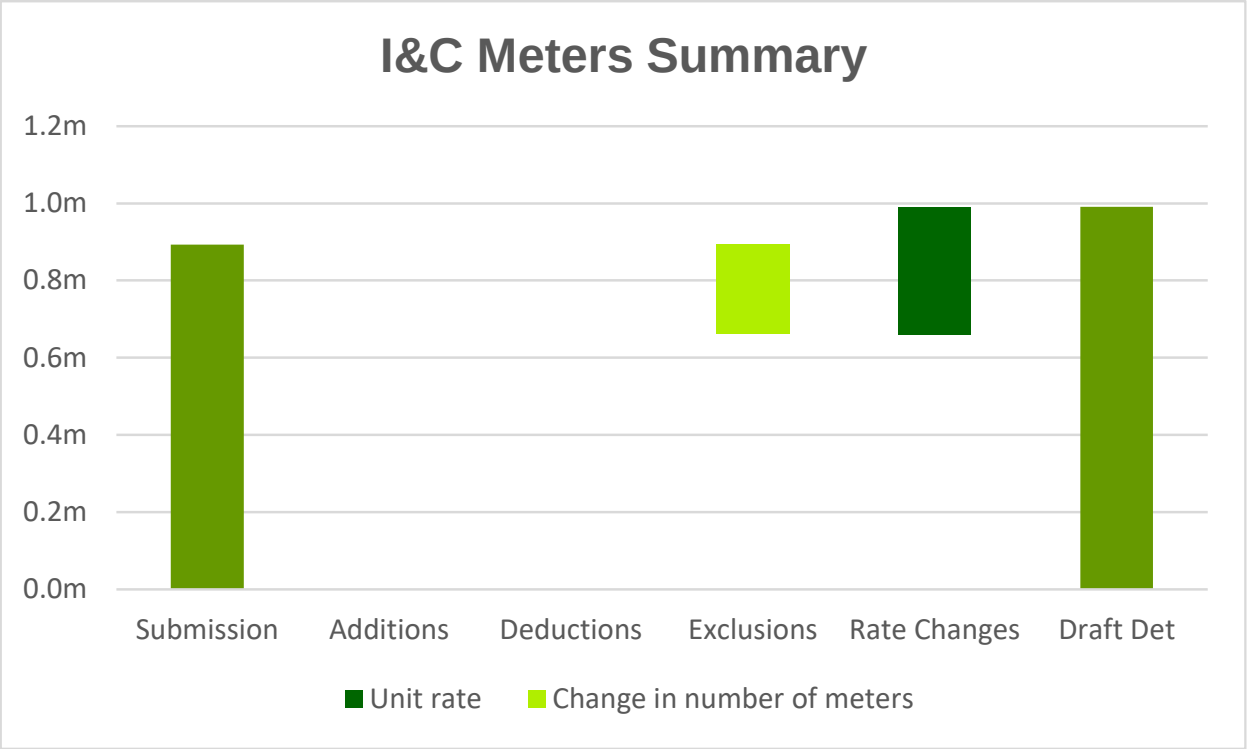


Figure 7.7: Industrial and commercial meters summary

7.47 The table below summarises the business plan proposals and our draft determination for domestic meters.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.095	0.187	0.118	0.168	0.187	0.139	0.893
BP I&C meters new (nr)	60	84	111	182	165	150	752
BP I&C meters replacement (nr)	0	0	0	0	0	0	0
DD investment (£m)	0.101	0.134	0.141	0.223	0.218	0.174	0.991
DD I&C meters new (nr)	45	60	81	135	123	112	556
DD I&C meters replacement (nr)	0	0	0	0	0	0	0

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.12: Industrial and commercial meters summary

SGN – Industrial and commercial meters – Growth

7.48 SGN's business plan included an industrial and commercial meter at each new connection. We have reduced the numbers of industrial and commercial connections proposed by SGN. The profile of connections and investment in the draft determination is shown in Table 7.13.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.316	0.210	0.259	0.263	0.262	0.261	1.572
BP I&C meters new (nr)	148	150	147	145	142	140	872
DD investment (£m)	0.308	0.216	0.240	0.239	0.236	0.233	1.473
DD I&C meters new (nr)	148	150	147	145	142	140	872

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.13: Industrial and commercial meters growth

7.49 Our allowances have been calculated by applying the appropriate basket of works unit rate to the number of I&C meters of each size proposed by SGN in the business plan.

SGN – Industrial and commercial meters – Replacement

7.50 SGN does not plan the replacement of any industrial and commercial meters during the GD23 price control period.

SGN – Other capex

7.51 The figure below summarises our decisions in reaching our draft determination for other capex. Further detail is provided in subsequent sections.

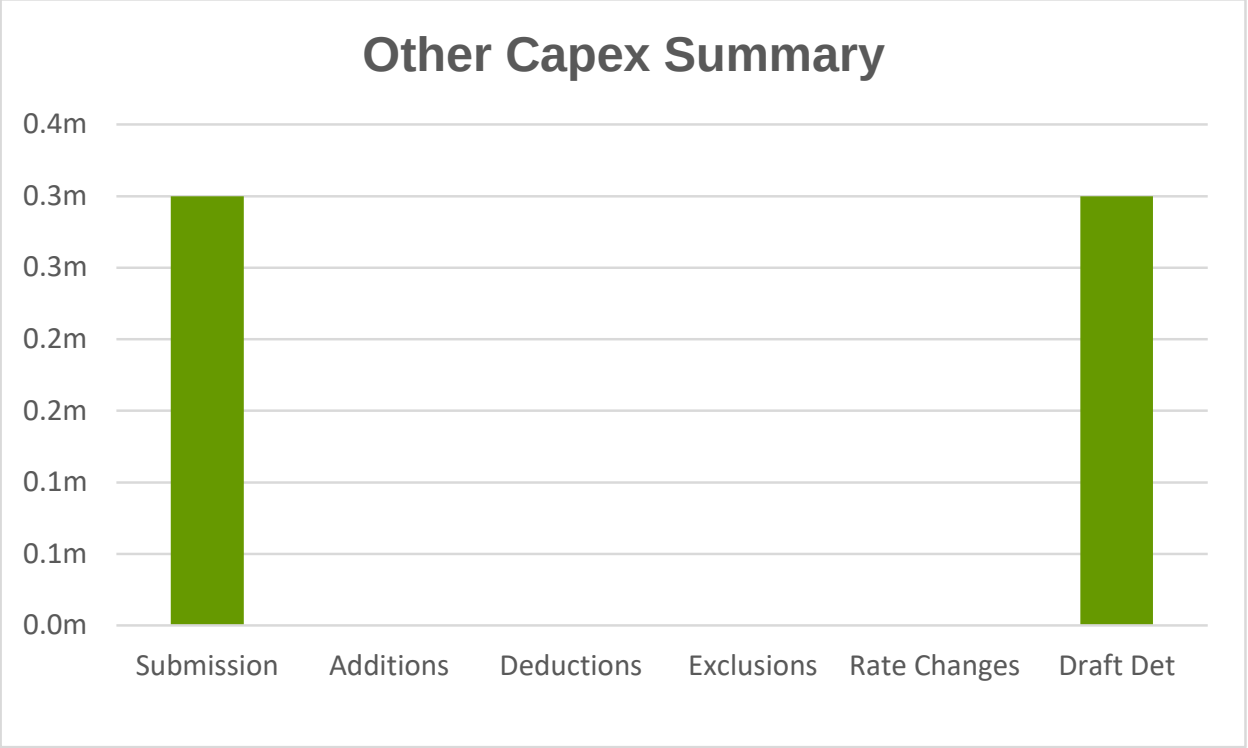


Figure 7.8: Other capex summary

7.52 The table below summarises the business plan proposals and our draft determination for other capex.

	2023	2024	2025	2026	2027	2028	GD23 Total
Business plan investment (£m)	0.050	0.050	0.050	0.050	0.050	0.050	0.300
DD investment (£m)	0.050	0.050	0.050	0.050	0.050	0.050	0.300

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.14: Other capex summary

7.53 We have accepted SGN's proposals for other capex in the GD23 period.

SGN – Traffic management act

7.54 SGN included proposals for 5% of mains and services expenditure allocated to TMA. In its commentary SGN suggested that a further 5% be allocated to innovation projects. As in previous price controls, we have allowed a ring fenced allowance for TMA equivalent to 10% of the allowances for main laying and service laying activities.

SGN – Customer contributions

7.55 We have made an adjustment to account for customer contributions relating to capex expenditure. SGN did not include any customer contributions in the

business plan submission. So we have used the four year average from 2017-20 to make the adjustment. This equates to a figure of 0.02% for SGN.

SGN – Summary of findings

7.56 In Table 7.15 below we have set out a summary of SGN's capex submission and our total capex allowance pre and post frontier shift for the draft determination. This includes a final adjustment for customer contributions.

	2023	2024	2025	2026	2027	2028	GD23
SGN NG business plan submission (£m)							
7 Bar Mains	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LP, 2Bar or 4Bar Mains	3.527	3.399	3.234	4.855	2.718	2.135	19.869
Individually Funded	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pressure Reduction	0.712	0.519	0.242	0.896	0.438	0.000	2.806
Domestic Services	1.281	1.199	1.270	1.295	1.184	1.315	7.544
Domestic Meters	0.170	0.158	0.168	0.171	0.151	0.172	0.990
I&C Services	0.192	0.269	0.365	0.557	0.539	0.507	2.430
I&C Meters	0.095	0.187	0.118	0.168	0.187	0.139	0.893
Other Capex	0.050	0.050	0.050	0.050	0.050	0.050	0.300
TMA	0.250	0.243	0.243	0.335	0.222	0.198	1.492
Totals	6.276	6.025	5.691	8.327	5.490	4.516	36.324
UR draft determination pre FS (£m)							
7 Bar Mains	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LP, 2Bar or 4Bar Mains	2.094	1.837	2.401	2.713	1.419	1.815	12.280
Individually Funded	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pressure Reduction	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Domestic Services	0.855	0.806	0.662	0.602	0.499	0.360	3.784
Domestic Meters	0.195	0.187	0.154	0.134	0.110	0.076	0.855
I&C Services	0.110	0.145	0.182	0.299	0.277	0.244	1.256
I&C Meters	0.101	0.134	0.141	0.223	0.218	0.174	0.991
Other Capex	0.050	0.050	0.050	0.050	0.050	0.050	0.300
TMA	0.306	0.279	0.325	0.361	0.220	0.242	1.732
Totals	3.711	3.438	3.915	4.382	2.793	2.960	21.199
UR draft determination post FS (£m)							
7 Bar Mains	0.000	0.000	0.000	0.000	0.000	0.000	0.000
LP, 2Bar or 4Bar Mains	2.073	1.802	2.348	2.659	1.393	1.782	12.057
Individually Funded	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pressure Reduction	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Domestic Services	0.847	0.791	0.647	0.590	0.490	0.354	3.718
Domestic Meters	0.193	0.184	0.150	0.131	0.108	0.074	0.840
I&C Services	0.108	0.142	0.178	0.293	0.272	0.239	1.233
I&C Meters	0.100	0.131	0.138	0.219	0.214	0.170	0.972
Other Capex	0.050	0.049	0.049	0.049	0.049	0.049	0.295
TMA	0.303	0.274	0.317	0.354	0.215	0.238	1.701
Totals	3.674	3.373	3.828	4.294	2.740	2.906	20.816
Contributions @ -0.02%	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.005
Totals (Post FS, Net of Contributions)	3.673	3.372	3.828	4.293	2.740	2.906	20.811

Note 1. Figures may not sum due to rounding. Gross figures, Average 2020 prices

Table 7.15: SGN draft determination capex allowance

SGN – Capital expenditure assumptions post GD23

7.57 We made the following assumptions to include a reasonable allowance of capital expenditure post GD23 for the purpose of modelling GD23 tariffs:

- SGN did not identify any 7 bar mains, apart from the two resilience projects, post GD23 and so no allowance has been made in our long term projections.
- Infill will be completed in the GD23 period so none is included post GD23.
- We have included an allowance for mains to serve new development based on a length of 9.5 metres of gas main per property.
- SGN did not identify any individually funded projects post GD23 and no allowance has been made in our long term projections.
- We continued the replacement of pressure reducing stations on a twenty year basis post GD23.
- We have included the costs of meters and services by extending the connection profiles for both domestic and industrial and commercial properties.
- We have allowed for the replacement of domestic meters, I&C meters based on a 20 year life.
- We have continued the level of other capex based on the SGN submission.
- We have continued an allowance for TMA costs at 10% of mains and services.
- We have not applied real price effects or frontier shift to estimated expenditure post GD23.