GD23 - Gas Distribution Price Control 2023-2028

Final Determination Annex C
Connections and Volumes
October 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 document provides the Utility Regulator's detailed assessment of numbers and types of gas connections as well as gas consumption for the GD23 period and beyond. A reasonable estimate of gas consumption over the longer term is used to calculate the "profile adjustment" necessary to smooth tariffs over the long term. This contributes to the final determination of revenues and tariffs in the GD23 period.

Audience

This assessment forms part of our final 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 final determination report. The estimate number of connections and estimates of gas consumption in this Annex contribute to the determination of revenues and tariffs.

Contents

Executive Summary

This document provides the Utility Regulator's detailed assessment of numbers and types of gas connections as well as gas consumption for the GD23 period and beyond. A reasonable estimate of gas consumption over the longer term is used to calculate the "profile adjustment" necessary to smooth tariffs over the long term. This contributes to the final determination of revenues and tariffs in the GD23 period.

Our assessment is based on a review and challenge of the estimates provided by the GDNs in their Business Plan submission. We have reviewed these assessments taking account of historical information on connection rates and average consumption for different categories of consumers.

For the final determination we have reduced both rates of connections and volumes of gas consumed in the short term to account of information provided by the GDNs as part of the 2023 tariff process.

We have applied a consistent energy efficiency adjustment to estimated consumption from 2029.

1. Introduction

1.1 This Annex to the GD23 final determination sets out the Utility Regulator's detailed assessment of numbers and types of gas connections and gas consumption for the GD23 period and beyond.

1.2 Chapter 2 provides general information on the range of types of properties considered in the analysis and the types of tariffs for which consumption volumes are estimated. It describes how key data such as average consumption volumes for different properties types have been determined and how future property numbers have been derived. It describes how common methodologies such as the determination of long term energy efficiency adjustments have been applied.

1.3 Subsequent chapters provide specific assessments and conclusions for each gas distribution network (GDN) company as follows:

a) Chapter 3 - firmus energy (FE)

b) Chapter 4 - Phoenix Natural Gas Limited (PNGL)

c) Chapter 5 - SGN Natural Gas (SGN)

1.4 The future consumption volumes are a key input to the "Pi models" we use to determine revenues and tariffs for the GD23 period. In accordance with the various company licences, these models require estimates of consumption for different tariff categories over the "revenue recovery period" which runs beyond GD23. This approach allows tariffs to be smoothed over the long term as the networks develop and the number of consumers increases.

1.5 In addition to underpinning our estimates of gas consumption, our estimates of connection numbers are used in the determination of a range of costs including:

a) Capital costs for meters and services.

b) Operational costs for meter maintenance and emergency response.

1.6 Connections numbers used to determine volumes of gas consumed were adjusted on the basis of additional information provided by the GDNs as part of the process for setting tariffs for 2023. The numbers used to estimate capital and opex costs were not updated to reflect these changes and the final determination is based on earlier, higher, estimates of connection numbers as these differences do not have a material impact. Capital allowances for meters and services will be corrected through the uncertainty mechanism to reflect actual connections constructed in GD23.

Changes from Draft Determination to Final Determination

1.7 Since the draft determination we have:

a) Reviewed connection numbers and average consumptions to take account of information for the year 2021.

b) Adjusted future volumes for the early years of GD23 to take account of the latest estimates for consumption in 2022 and 2023 provided by firmus energy and PNGL as part of tariff setting process for 2023. These showed a general reduction in consumption linked to increased gas prices.

c) Reduced projected connection numbers for domestic Owner Occupied properties in the early years of GD23 to take account of a reduction in connection activity reported by GDNs for 2022.

d) Taken account of updated information from SGN on future connections and consumption for larger I&C consumers.

e) Reduced the long term energy efficiency adjustment applied to estimated volumes post GD23 to account for the reductions made to volumes in GD23 to reflect reduced volumes revealed when setting tariffs for 2023.

1.8 The change in determined volumes for each GDN in the GD23 period between draft determination and final determination is summarised in Table 1.1. The reductions in volumes reflect a reduction in both connections and average consumption per consumer. The reduction in projected volumes contribute to increased tariffs.

firmus energy	2023	2024	2025	2026	2027	2028	Total
GD23 DD	73,981	76,670	79,362	81,942	84,020	85,905	481,880
GD23 FD	63,984	68,443	72,642	76,513	78,713	80,776	441,071
Change (%)	-13.5%	-10.7%	-8.5%	-6.6%	-6.3%	-6.0%	-8.5%
PNGL	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**Total**
GD23 DD	171,003	174,075	177,005	179,780	182,397	184,873	1,069,132
GD23 FD	151,624	158,666	165,889	170,053	172,652	175,204	994,089
Change (%)	-11.3%	-8.9%	-6.3%	-5.4%	-5.3%	-5.2%	-7.0%
SGN	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**Total**
GD23 DD	30,482	31,133	31,803	32,380	33,004	33,479	192,282
GD23 FD	25,214	25,790	27,113	28,328	29,077	29,743	165,266
Change (%)	-17.3%	-17.2%	-14.7%	-12.5%	-11.9%	-11.2%	-14.0%

Table 1.1: Change in estimated consumption for each GDN between draft and final determination ('000 therms).

2. Common approach and methodologies

Types of connections

2.1 Connection numbers and gas consumption is estimated for two broad categories of connections:

- Domestic properties.
- Industrial and commercial (I&C) properties.

Types of domestic property connections

2.2 Domestic properties are considered in three categories: Owner Occupied (OO) New Build (NB), Northern Ireland Housing Executive housing (NIHE). The definitions for each property types are shown in Table 2.1.

Property type	Definition
Owner Occupied (OO)	Refers to domestic premises which do not fall into the definition of domestic new build or NIHE. Note that OO domestic premises as defined here can also be private rented.
New Build (NB)	Domestic premises which have never previously been owned or occupied by any person (that is they are, or are to be, newly built premises) and in respect of which the connection to the network shall be made prior to the premises first being occupied, including any such premises which are being constructed for the Northern Ireland Housing Executive or a Housing Association in Northern Ireland.
Northern Ireland Housing Executive housing (NIHE)	Domestic Premises (excluding any New Build Domestic Premises) which are owned by (i) the Northern Ireland Housing Executive, or (ii) a housing association in Northern Ireland. The Department for Communities is the regulator of registered housing associations of which lists are available on its website. Co-Ownership (Included on the Departments list) is excluded from this category.

Table 2.1: Domestic property types

Categories of industrial and commercial connections

2.3 Industrial and commercial conveyance categories are defined by annual consumption and type of usage. The annual consumption size bands used to define tariffs are:

- less than 2,500 therms per annum;
- 2,500 to 25,000 therms inclusive;
- greater than 25,000 therms per annum to 75,000 therms per annum;
- greater than 75,000 therms per annum; and

- for SGN only, demand over 10,000,000 therms per annum.

2.4 Within these size bands, separate conveyance charges are applied to different types of consumer, including: those using gas for combined heat and power (CHP) which is typically on-site generation; and, supplies which may be interrupted in defined circumstances under high demand as well as 'firm' supplies which are not interruptible.

2.5 For the purpose of determining tariffs and revenues under the different GDN licences, tariffs are grouped by conveyance charge categories P1, P2, etc. The definition of these 'P' categories, described in Table 2.2, are not consistent across GDNs.

Size (therms)	Conveyance charge categories		
	firmus energy	PNGL	SGNNG
less than 2,500	P1: firm demand	P1: firm demand	P1: firm demand
> 2,500 to 25,000	P2: firm demand	P2: small and medium I&C firm demand	P2: firm demand
> 25,000 to 75,000	P3: firm demand	P3: large I&C firm demand	P3: firm demand
over 75,000	P4: firm demand CHP P5: firm demand (non-CHP) P6: interruptible	P3: firm demand CHP P3: firm demand (non-CHP) P4: interruptible	P4: firm demand CHP P5: firm demand (non-CHP) P6: interruptible
over 10,000,000	Not applicable	Not applicable	P7: firm demand (non-CHP)

Table 2.2: Conveyance charge categories for industrial and commercial consumers

Units

2.6 Gas consumption is stated in therms (or multiples of therms), consistent with the tariff models and the licence conditions which define the calculation of tariffs.

Adjusting for reduced consumption identified for 2022 and 2023

2.7 Our estimates of future volumes were initially based on average consumption per property type applied to projected number of connections starting from the latest available data. These initial estimates of consumption were founded on confirmed connection numbers for 2021 and estimates of average consumption based on data for the year 2017 to 2021. Our initial estimates of future volumes included estimates for 2022.

2.8 As part of the tariff setting process for 2023, FE and PNGL provided updated estimates of volumes for 2022 and 2023. These estimates take account of data for the first half of 2022 and on-going engagement between the GDNs and I&C consumers on future consumption. Both GDNs concluded that consumption per property was likely to be lower in 2022 and 2023 than the recent past. The reduction in consumption was attributed to higher costs of gas, with consumers either actively reducing energy consumption or using alternative fuels.

2.9 For the final determination we have adjusted our initial estimates to take account of this information by:

a) Reducing our estimate of connection numbers for 2023 and 2024 to take account of experience in the first half of 2022.

b) Reducing our estimate of consumption for different property types to reflect the GDNs estimates for 2022 and 2023 revealed through the tariff setting process for 2023.

c) Assuming that volumes would recover to more stable levels by 2026 but that long term energy efficiency measures adopted by consumers in response to current levels of gas prices would mean that future consumption per property would continue to be lower than historical levels.

d) Applying the reductions in consumption per property derived from FE and PNGL data to SGN for P1 and P2 tariffs. We asked SGN to provide an updated estimate of larger I&C consumption taking account of its current experience and engagement with consumers and adopted these estimates for the final determination.

2.10 The resulting reduction in future volumes in GD23 and beyond contribute to an increase in tariffs from the draft determination.

Energy efficiency adjustment

2.11 In GD17 we estimated future consumption volumes based on reasonable estimates of current consumptions per property or specific information on larger users where this was available.

2.12 We recognised the possibility that energy consumption was likely to reduce in the future as the energy efficiency of appliances and buildings improved. In GD17 we applied an energy efficiency adjustment to future gas volumes of 20% beginning in the first year of the next price control (GD23).

2.13 The GDNs applied similar energy efficiency adjustments to estimates of future gas consumptions in their Business Plans:

a) FE applied an energy efficiency adjustment of 25% starting in 2023 profiled to the end of the revenue recovery period in 2045;

b) PNGL applied an energy efficiency adjustment of 20% starting in 2023 profiled to the end of the revenue recovery period in 2046;

c) SGN applied an energy efficiency adjustment of 30% starting in 2029 profiled to the end of the revenue recovery period in 2057.

2.14 We have based consumption in GD23 and beyond on current levels of consumption per property type, adjusted to take account of reductions in consumption identified for 2022 and 2023 through the 2023 tariff process. This adjustment includes an assumption that current gas prices will prompt consumers to bring forward energy efficiency measures which will reduce medium term consumption in GD23. In GD23, conversion from oil to gas will make a contribution to overall energy efficiency, but this is already factored into current average gas consumptions. We do not consider it appropriate to apply a further energy efficiency adjustment to estimated consumption for the GD23.

2.15 Our final determination makes an allowance for future energy efficiency measures beyond GD23. These have been amended for the final determination to take account of the adjustments made to volumes in GD23 to reflect the current impact of higher gas prices. The energy efficiency adjustments applied in the final determination are:

a) for FE – a further energy efficiency adjustment of 20% (reduced from 25% in the draft determination) was applied starting in 2029 profiled to the end of the revenue recovery period in 2045;

b) for PNGL - an energy efficiency adjustment of 20% (reduced from 25% in the draft determination) was applied starting in 2029 profiled to the end of the revenue recovery period in 2046;

c) for SGN - an energy efficiency adjustment of 25% (reduced from 30% in the draft determination) was applied starting in 2029 profiled to the end of the revenue recovery period in 2057.

3. Firmus Energy - Connections and Consumption

Summary

3.1 The determined connections and volumes for FE are shown on Table 3.1. Further information is provided below on our consideration of connection numbers and consumption for different types of connections. These projected figures have been prepared prior to publication of the GD23 final determination, using the latest available data. As a result there are slight changes to the projected connections detailed in Annex F – Capital Investment, which was prepared prior to the latest data. The uncertainty mechanism will capture actual connections.

Connections	2023	2024	2025	2026	2027	2028	Total
Domestic owner occupied	2,000	2,750	3,524	3,371	3,224	3,084	17,953
Domestic new build	1,250	1,250	1,250	1,250	1,250	1,250	7,500
Domestic NIHE	1,000	1,000	1,000	1,000	1,000	1,000	6,000
Industrial and commercial	113	150	147	145	142	140	837
Total	4,363	5,150	5,921	5,766	5,616	5,474	32,290

Volumes('000 therms)	2023	2024	2025	2026	2027	2028	Total
Domestic owner occupied	10,168	11,283	12,895	14,441	15,765	17,030	81,583
Domestic new build	4,569	5,022	5,560	6,008	6,386	6,764	34,310
Domestic NIHE	5,971	6,379	6,885	7,274	7,575	7,877	41,961
Industrial and commercial							
P1 Very small I&C	1,419	1,553	1,727	1,872	1,992	2,111	10,673
P2 Small I&C	7,004	7,276	7,466	7,911	7,911	7,911	45,47
P3 Medium I&C	5,743	6,039	6,162	6,236	6,236	6,236	36,650
P4 Large CHP	1,865	1,865	1,865	1,865	1,865	1,865	11,189
P5 Large firm I&C	12,456	12,872	13,045	13,148	13,148	13,148	77,818
P6 Interruptible I&C	14,787	16,155	17,038	17,759	17,835	17,835	101,410
Total	63,984	68,443	72,642	76,513	78,713	80,776	441,071

Table 3.1: GD23 determined connections and volumes - FE

3.2 The overall impact of our review of estimated consumptions for GD23 is shown on Table 3.2 with the final determination compared to the company's Business Plan submission. These figures are totals post the energy efficiency adjustment. Figures are provided for GD23 and the last year of the revenue recovery period.

	2023	2024	2025	2026	2027	2028	2045
FE estimated consumption	75.5	79.4	81.6	83.7	85.3	86.7	89.2
Determined consumption	64.0	68.4	72.6	76.5	78.7	80.8	83.5
Variance	-15.3%	-13.8%	-11.0%	-8.6%	-7.7%	-6.8%	-6.4%

Table 3.2: FE – estimated total consumption for GD23 (M.therms)

FE - Owner occupied domestic connections

3.3 For the GD23 draft determination we proposed a minimal cost-to-serve model for funding work undertaken by GDNs to promote and secure OO connections with separate funding for marketing. For the GD23 final determination we reviewed the additional information provided and acknowledge the value of increased advertising and marketing compared to the allowance provided within the DD. This additional money has been linked to the numbers of connections (similar to the model used in GD17, but with material changes in the structure of the mechanism). In light of this change, we have accepted the company's estimate of connections for the last four years of GD23. For 2023, we have taken account of a reduction in connections in 2022 which has been attributed to the high price of gas. We have assumed that connections in 2023 will be similar to the likely outcome for 2022 and we have assumed a partial recovery in 2024.

3.4 The numbers of connections proposed by FE and the number determined are shown in Table 3.3 below.

P1 - Owner Occupied domestic	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by FE	3,852	3,685	3,524	3,371	3,224	3,084	20,740
Determined OO connections	2,000	2,750	3,524	3,371	3,224	3,084	17,953

Table 3.3: FE additional Owner Occupied domestic connections in GD23

FE - New Build domestic connections

3.5 The average number of New Build connections to the FE network in the period 2017 to 2020 was circa 1,400 per annum. FE estimated that there would be a marginally higher rate of New Build connections in GD23. Our final determination takes a more conservative approach, assuming that there

will be some reduction in New Build connections in GD23. The numbers of connections proposed by FE and the number determined are shown in Table 3.4 below. The GD23 uncertainty mechanisms adjust both investment and future revenues for actual numbers of connections over time.

P1 - New Build domestic	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by FE	1,500	1,500	1,500	1,500	1,500	1,500	9,000
Determined New Build connections	1,250	1,250	1,250	1,250	1,250	1,250	7,500

Table 3.4: FE additional New Build domestic connections in GD23

FE - NIHE domestic connections

3.6 FE estimated that 1000 NIHE properties would be connected per annum in GD23. This is lower than an average in excess of 2000 per annum in the years 2018 to 2020 when significant network infill was completed. The level of infill will reduce in GD23. The numbers of connections proposed by the company has been accepted for the final determination.

P1 - NIHE domestic	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by FE	1,000	1,000	1,000	1,000	1,000	1,000	6,000

Table 3.5: FE additional NIHE domestic connections in GD23

FE - Industrial and commercial connections

3.7 FE has proposed low levels of connections for small I&C consumers which reflect current run rates of connections from a mature network as set out in Table 3.6. FE did not include any larger connections in its estimates for GD23.

P1 - Very Small I&C	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by FE	148	150	147	145	142	140	872
Determined I&C connections	113	150	147	145	142	140	837

Table 3.6: FE additional I&C connections in GD23

3.8 The level of connections proposed by the company is consistent with recent rates of connections and has been accepted for the final determination for the years 2024 to 2028. We have reduced the rate of connections proposed by the company in 2023 in recognition of the impact that current economic conditions might have on rates of connection in the short term.

FE - Determined volumes

3.9 Gas consumption volumes for the final determination are based on a review the company's proposals and an assessment of recent average rates of consumption per property.

	FE Average consumption 2028 (therms per prop)	Average consumption applied in the final determination (therms per prop)
P1 Domestic Owner Occupied	418	418
P1 Domestic New Build	315	315
P1 Domestic NIHE	314	314
P1 Very Small I&C	919	919
P2 Small I&C	8,586	8,586

Table 3.7: FE - average consumption (therms) per property

3.10 We reviewed and accepted FE's average consumption for P1 and P2 connections. These average consumptions figures were applied to the average of the numbers of connections at the start and end of the year to calculate consumption to arrive at an initial estimate for consumption.

3.11 FE based its estimates of P3 to P6 targets on current total consumption with specific adjustments for major new connections or expected variations of existing connections. We have adopted the same approach for the final determination starting from 2021 volumes. We have not included the additional volumes for two large new I&C connections identified by FE in its Business Plan. The change mechanisms of the final determination allows these connections to be made in the future if it can be demonstrated that they are economic.

3.12 A further adjustment was applied to the profile of consumption by tariff category based on updated estimates of consumption for 2022 and 2023 provided by FE as part of the 2023 tariff process. We used the estimated volumes for 2022 and 2023 to calculate percentage reductions for each tariff category and selected representative values which were applied for the final determination. We checked that our revised estimates (post adjustment) aligned with the company's updated estimates. We then assumed that consumption would recover to more stable levels by 2026 but that consumption per property could be lower than in 2021 as consumers adopt energy efficiency measures in response to higher prices. We recognise that any estimate of gas consumption in the short to medium term is uncertain and will be dependent on movements in the wholesale price of gas,

Government support mechanism and how consumers respond to changes in the price of gas.

3.13 The percentage adjustment applied to different tariff categories are shown in Table 3.8.

	2022	2023	2024	2025	2026 +
P1 - Domestic	7.5%	10.0%	8.2%	5.2%	4.0%
P1 - Very Small I&C	7.5%	10.0%	8.2%	5.2%	4.0%
P2 - Small I&C	15.0%	15.0%	11.7%	9.4%	4.0%
P3 - Medium I&C	5.0%	12.5%	8.0%	6.1%	5.0%
P4 - Large CHP	0.0%	0.0%	0.0%	0.0%	0.0%
P5 - Large Firm Non CHP	2.5%	10.0%	7.0%	5.8%	5.0%
P6 - Interruptible I & C	7.5%	15.0%	9.0%	6.5%	5.0%

Table 3.8: FE – profiled reduction in consumption in the early year of GD23

3.14 The final step when estimating consumption was to apply a long term energy efficiency adjustment. In its Business Plan submission, FE applied a 25% energy efficiency adjustment in equal steps to estimated consumption from 2023 to 2045. As noted above, our final determination includes an energy efficiency adjustment of 20% applied in equal steps from 2029 (post GD23) to 2045.

3.15 The overall impact of our review of estimated consumptions for GD23 is shown on Table 3.2 above.

4. PNGL - Connections and Consumption

Summary

4.1 The determined connections and volumes for PNGL are shown on Table 4.1. Further information is provided below on our consideration of connection numbers and consumption for different types of connections. These projected figures have been prepared prior to publication of the GD23 final determination, using the latest available data. As a result there are slight changes to the projected connections detailed in Annex F – Capital Investment, which was prepared prior to the latest data. The uncertainty mechanism will capture actual connections.

Connections	2023	2024	2025	2026	2027	2028	Total
Domestic owner occupied	3,000	3,400	3,727	3,612	3,502	3,396	20,637
Domestic new build	2,000	2,000	2,000	2,000	2,000	2,000	12,000
Domestic NIHE	350	350	350	300	300	300	1,950
Industrial and commercial	122	150	150	125	125	125	797
Total	5,472	5,900	6,227	6,037	5,927	5,821	35,384

Volumes('000 therms)	2023	2024	2025	2026	2027	2028	Total
Domestic owner occupied	51,831	54,189	57,480	59,793	61,330	62,820	347,443
Domestic new build	19,525	20,614	22,008	23,016	23,746	24,475	133,384
Domestic NIHE	15,255	15,661	16,277	16,582	16,673	16,763	97,211
Industrial and commercial							
P1 Very Small I&C	4,913	5,071	5,304	5,433	5,487	5,542	31,749
P2 Small I&C	17,757	19,241	20,150	20,415	20,540	20,664	118,768
P3 Firm I&C & CHP	30,088	30,770	31,058	31,117	31,180	31,243	185,455
P4 Interruptible I&C	12,256	13,121	13,611	13,697	13,697	13,697	80,080
Total	151,624	158,666	165,889	170,053	172,652	175,204	994,089

Table 4.1: GD23 determined connections and volumes – PNGL

4.2 The overall impact of our review of estimated consumptions for GD23 is shown on Table 4.2 with the final determination compared to the company's Business Plan submission. These figures are totals post the energy efficiency adjustment. Figures are provided for GD23 and the last year of the revenue recover period.

	2023	2024	2025	2026	2027	2028	2046
PNGL estimated consumption	167.3	169.0	170.5	171.8	172.9	174.0	171.1
Determined consumption	151.6	158.7	165.9	170.1	172.7	175.2	169.5
Variance	-9.35%	-6.09%	-2.68%	-0.99%	-0.16%	0.68%	-0.90%

Table 4.2: PNGL – estimated total consumption for GD23 (M.therms)

PNGL - Owner occupied domestic connections

4.3 For the GD23 draft determination we proposed a minimal cost-to-serve model for funding work undertaken by GDNs to promote and secure OO connections with separate funding for marketing. For the GD23 final determination we reviewed the additional information provided and acknowledge the value of increased advertising and marketing compared to the allowance provided within the DD. This additional money has been linked to the number of connections (similar to the model used in GD17, but with material changes in the structure of the mechanism). In light of this change, we have accepted the company's estimate of connections for the last four years of GD23. For 2023, we have taken account of a reduction in connections in 2022 which has been attributed to the high price of gas. We have assumed that connections in 2023 will be similar to the likely outcome for 2022 and we have assumed a partial recovery in 2024.

4.4 The numbers of connections proposed by PNGL and the number determined are shown in Table 4.3 below. The GD23 uncertainty mechanisms adjust both investment and future revenues for actual numbers of connections over time.

P1 - Owner Occupied domestic	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by PNGL	4,522	4,159	3,727	3,612	3,502	3,396	22,918
Determined OO connections	3,000	3,400	3,727	3,612	3,502	3,396	20,637

Table 4.3: PNGL additional Owner Occupied domestic connections in GD23

PNGL - New Build domestic connections

4.5 The average number of New Build connections to the PNGL network in the period 2017 to 2020 was circa 2,100 per annum. PNGL assumed a

progressive increase in New Build connections for the remainder of GD17, with increasing connection numbers continuing into GD23. Our final determination takes a more conservative approach, assuming that long term connections rates will be reflective of recent levels of connections. The numbers of connections proposed by PNGL and the number determined are shown in Table 4.4 below. The GD23 uncertainty mechanisms adjust both investment and revenues for actual numbers of connections over time.

P1 - New Build domestic	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by PNGL	2,300	2,400	2,500	2,600	2,700	2,700	15,200
Determined New Build connections	2,000	2,000	2,000	2,000	2,000	2,000	12,000

Table 4.4: PNGL additional New Build domestic connections in GD23

PNGL - NIHE domestic connections

4.6 PNGL proposed a low level of continuing connections for NIHE domestic properties as set out in Table 4.5 below. The numbers of connections proposed by the company has been accepted for the final determination.

	2023	2024	2025	2026	2027	2028	GD23 Total
P1 - NIHE domestic	350	350	350	300	300	300	1,950

Table 4.5: PNGL additional NIHE domestic connections in GD23

PNGL - Industrial and commercial connections

4.7 PNGL proposed low levels of connections for small I&C consumers which reflect current run rates of connections from a mature network as set out in Table 4.6 for tariff categories P1, P2 and P3. PNGL did not identify any future connection P4 tariff category (large I&C >75,000 therms per annum).

	2023	2024	2025	2026	2027	2028	2046
P1 - Very Small I&C	101	123	123	98	98	98	641
P2 - Small I&C	19	25	25	25	25	25	144
P3 - Firm I&C	2	2	2	2	2	2	12

Table 4.6: PNGL additional I&C connections in GD23

4.8 The level of connections proposed by the company is consistent with recent rates of connections and has been accepted for the final determination for 2024 to 2028. We have reduced the rate of P1 and P2 connections

proposed by the company in 2023 in recognition of the impact that current economic conditions might have on rates of connection in the short term.

PNGL - Determined volumes

4.9 Gas consumption volumes for the final determination are based on a review the company's proposals and an assessment of recent average rates of consumption per property.

	PNGL Average consumption 2028 (therms per prop)	Average consumption applied in the final determination (therms per prop)
P1 - Domestic Owner Occupied	431	450
P1 - Domestic New Build	375	380
P1 - Domestic NIHE	301	315
P1 - Very Small I&C	613	580
P2 - Small I&C	5,363	5,200
P3 - Firm I&C	35,719	33,000

Note 1. PNGL consumption for 2028 is the total consumption in year divided by number of connections at the end of year.

Table 4.7: PNGL - average consumption (therms) per property

4.10 We have amended the estimated consumption for P1 and P2 connections to reflect the average consumption calculated for four years, 2018 to 2021. The consumptions were calculated by dividing the total consumption in the year by the average of the number of connections at the start and end of the year to reflect part year consumption of new connections made in the year. The average consumptions figures were applied in the same way to estimate annual volumes.

4.11 We have accepted the company's estimates of average therms per property for P3 and P4 connections with the exception of P3 – Firm I&C category where we have used an average over the GD23 period. We have based or estimates for P3 and P4 tariff categories on the 2021 actual volumes plus additional connections at an average consumption per additional connection.

4.12 A further adjustment was applied to the profile of consumption by tariff category based on updated estimates of consumption for 2022 and 2023 provided by PNGL as part of the 2023 tariff process. We used the estimated volumes for 2022 and 2023 to calculate percentage reductions for each tariff category and selected representative values which were applied for the final determination. We applied a greater level of reduction in 2023 than PNGL

had estimated, having taken account of further discussions with PNGL and information from FE. We checked that our revised estimates (post adjustment) aligned with the company's updated estimates. We then assumed that consumption would recover to more stable levels by 2026 but that consumption per property could be lower than in 2021 as consumers adopt energy efficiency measures in response to higher prices. We recognise that any estimate of gas consumption in the short to medium term is uncertain and will be dependent on movements in the wholesale price of gas, Government support mechanism and how consumers respond to changes in the price of gas.

4.13 The percentage adjustment applied to different tariff categories are shown in Table 4.8.

	2022	2023	2024	2025	2026 +
P1 - Very Small I&C	7.5%	10.0%	8.2%	5.2%	4.0%
P2 - Small I&C	15.0%	15.0%	8.4%	4.7%	4.0%
P3 - CHP	0.0%	0.0%	0.0%	0.0%	0.0%
P3 - Firm I&C	5.0%	10.0%	7.0%	5.3%	5.0%
P3 - CHP > 75,000 Th	0.0%	0.0%	1.5%	4.0%	5.0%
P3 - Firm I & C > 75,000 Th	2.5%	10.0%	7.0%	5.3%	5.0%
P4 - Interruptible I & C	15.0%	15.0%	9.0%	5.6%	5.0%

Table 4.8: PNGL – profiled reduction in consumption in the early year of GD23

4.14 The final step when estimating consumption was to apply a long term energy efficiency adjustment. In its Business Plan submission, PNGL applied a 25% energy efficiency adjustment in equal steps to estimated consumption from 2023 to 2046. As noted above, our final determination includes an energy efficiency adjustment of 20% applied in equal steps from 2029 (post GD23) to 2046.

4.15 The overall impact of our review of estimated consumptions for GD23 is shown on Table 4.2 above.

5. SGN - Connections and Consumption

Summary

5.1 The determined connections and volumes for SGN are shown on Table 5.1. Further information is provided below on our consideration of connection numbers and consumption for different types of connections. These projected figures have been prepared prior to publication of the GD23 final determination, using the latest available data. As a result there are slight changes to the projected connections detailed in Annex F – Capital Investment, which was prepared prior to the latest data. The uncertainty mechanism will capture actual connections.

Connections	2023	2024	2025	2026	2027	2028	Total
Domestic owner occupied	200	364	529	565	544	562	2,765
Domestic new build	200	203	182	108	81	43	817
Domestic NIHE	25	0	70	111	37	184	427
Industrial and commercial	31	57	92	155	140	130	605
Total	456	624	873	939	802	919	4,614

Volumes('000 therms)	2023	2024	2025	2026	2027	2028	Total
Domestic owner occupied	698	810	998	1,210	1,412	1,614	6,741
Domestic new build	105	167	231	278	307	326	1,414
Domestic NIHE	232	240	258	289	311	343	1,674
Industrial and commercial							
Small I&C	36	56	90	148	219	284	832
Medium I&C	138	234	389	642	942	1,228	3,573
Large I&C	725	844	912	1,016	1,140	1,165	5,802
Contract I&C	23,280	23,438	24,236	24,746	24,746	24,783	145,230
Total	25,214	25,790	27,113	28,328	29,077	29,743	165,266

Table 5.1: GD23 determined connections and volumes – SGN

5.2 The overall impact of our review of estimated consumptions for GD23 is shown on Table 5.2 with the final determination compared to the company's Business Plan submission. These figures are totals post the energy efficiency adjustment. Figures are provided for GD23 and the last year of the revenue recover period.

	2023	2024	2025	2026	2027	2028	2057
SGN estimated consumption	30.6	31.4	32.3	33.1	34.1	35.0	31.7
Determined consumption	25.2	25.8	27.1	28.3	29.1	29.7	28.3
Variance	-17.7%	-17.9%	-15.9%	-14.5%	-14.7%	-15.0%	-10.7%

Table 5.2: SGN – estimated total consumption for GD23 (M.therms)

Delivery of connections in GD17

5.3 SGN's Business Plan submission indicates that actual and planned delivery of connections in GD17 will be significantly lower than the connection projections and targets included in the GD17 final determination.

Cumulative connections	At 2022 – GD17 FD projections	At 2022 – SGN GD23 BPS estimates	At 2028 – SGN GD23 BPS estimates
Domestic - Owner Occupied	3,989	2,368	6,118
Domestic - New Build	1,154	195	1,012
Domestic - NIHE	1,914	752	1,438
Small and Medium I&C	1,585	61	800
Large and Contract I&C	50	49	62
Total	8,692	3,425	9,430

Table 5.3: SGN connection delivery

5.4 The delivery of connections by SGN in GD17 has been affected by:

a) The delayed completion of High Pressure and Intermediate Pressure pipelines under the Gas to the West High Pressure licence. As a result, gas only became available in Mid-Ulster and Fermanagh from July 2019.

b) The on-set of COVID-19 in 2020 limited opportunities for marketing and the ability of energy advisers to visit consumers and secure connections.

5.5 SGN has also indicated that it is unable to secure connections at the rate originally envisaged for Gas to the West. In particular:

a) Delivery of domestic connections in GD17 is expected to be less than the targets and projections included in the GD17 final determination. However, the company expects to have exceeded the GD17 FD targets and projections for domestic connections by the end of GD23.

b) Delivery of small and medium I&C connections in GD17 is significantly below the projections included in the GD17 final determination. The company now estimates that the number of small and medium connections at the end of GD23 (2028) will be lower than the GD17 projections for 2022.

c) Delivery of large and contract I&C is on track. It is the delivery of these large I&C connections, which underpinned the economic development of a gas network in the west, which has allowed SGN to secure 84% of the anticipated gas volume in 2020 despite a material shortfall in the number of domestic and small and medium I&C connections.

5.6 SGN's I&C connections targets for GD17 were set from connection rates included in the Gas to the West licence application process. Based on its experience in GD17, SGN has estimated connections for the end of GD23 which are lower than those originally expected for the end of GD17. Because the company is subject to price cap regulation, its revenue is dependent on the connections achieved and the volume of gas consumed. This provides a strong incentive for the company to secure new connections. However, as a result of under-performing against the GD17 connection targets, the company has recovered less revenue than expected in the GD17 period.

5.7 For GD23, we consider it appropriate to estimate I&C connections for SGN based on the company's own estimates for GD23. These estimates reflect both the company's experience in GD17 and its engagement with the industrial and commercial sector to date. In the draft determination we reduced the number small and medium I&C connections to provide an opportunity for the company to invest in securing new connections. For the final determination, we have allowed a direct financial incentive to secure new connections and, as a result, we have not reduced the number of connections to provide a further incentive.

SGN - Owner occupied domestic connections

5.8 For the GD23 draft determination we proposed a minimal cost-to-serve model for funding work undertaken by GDNs to promote and secure OO connections with separate funding for marketing. For the GD23 final determination we reviewed the additional information provided and acknowledge the value of increased advertising and marketing compared to the allowance provided within the DD. This additional money has been linked to the numbers of connections (similar to the model used in GD17, but with material changes in the structure of the mechanism). In light of this

change, we have accepted the company's estimate of connections for the last four years of GD23. For 2023, we have taken account of a reduction in connections in 2022 which has been attributed to the high price of gas. In the case if SGN, the reduction in 2022 recognises that some planned connections in 2022 relate to sites already prepared for gas in advance of gas mains being laid. We have assumed that connections in 2023 will be similar to the likely outcome for 2022 and we have assumed a partial recovery in 2024.

P1 - Owner Occupied domestic	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by SGN	623	593	599	652	643	640	3,750
Determined OO connections	200	364	529	565	544	562	2,765

Table 5.4: SGN additional Owner Occupied domestic connections in GD23

SGN - New Build domestic connections

5.9 SGN has estimated the potential for New Build connections from area development plans. We have accepted the company's estimates for the final determination.

P1 - New Build domestic	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by SGN	200	203	182	108	81	43	817

Table 5.5: SGN additional New Build domestic connections in GD23

SGN - NIHE domestic connections

5.10 SGN has estimated the potential for NIHE connections from engagement with the Housing Executive and other housing providers in its area. We have accepted the company's estimates but excluded estimated connections in the 9 new areas which we have not included in the final determination.

	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by SGN	89	53	92	180	88	184	686
Determined NIHE connections	25	0	70	111	37	184	427

Table 5.6: SGN additional NIHE domestic connections in GD23

SGN - Industrial and commercial connections

SGN –Small I&C connections

5.11 The final determination is based on the number of connections proposed by the company in its Business Plan Submission. We have accepted the company's estimates but excluded estimated connections in the 9 new areas which we have not included in the final determination. We have reduced the rate of connections proposed by the company in 2023 in recognition of the impact that current economic conditions might have on rates of connection in the short term.

	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by SGN	34	48	64	109	97	89	441
Determined Small I&C connections	16	32	48	92	82	77	347

Table 5.7: SGN additional Small I&C connections in GD23

SGN –Medium I&C connections

5.12 The final determination is based on the number of connections proposed by the company in its Business Plan Submission. We have accepted the company's estimates but excluded estimated connections in the 9 new areas which we have not included in the final determination. We have reduced the rate of connections proposed by the company in 2023 in recognition of the impact that current economic conditions might have on rates of connection in the short term.

	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by SGN	23	34	45	71	65	61	298
Determined Medium I&C connections	11	23	34	59	55	53	235

Table 5.8: SGN additional Medium I&C connections in GD23

SGN –Large I&C connections

5.13 Following the draft determination, SGN provided an update on the number of Large I&C connections taking account of current performance and on-going engagement with potential consumers. We have accepted the numbers provided by the company.

	2023	2024	2025	2026	2027	2028	GD23 Total
Connections proposed by SGN	3	1	2	2	3	0	11
Determined Medium I&C connections P3	4	1	2	4	3	0	14

Table 5.9: SGN additional Large I&C connections in GD23

SGN –Contract I&C connections

5.14 Following the draft determination, SGN provided an update on the number of Large I&C connections taking account of current performance and on-going engagement with potential consumers. We have accepted the numbers provided by the company. These indicate a delay of connections previously expected to occur in GD17.

	2023	2024	2025	2026	2027	2028	Tot GD23
Connections proposed by SGN	0	2	0	0	0	0	0
Determined Contract I&C connections P5	0	1	8	0	0	0	9

Table 5.10: SGN additional Contract I&C connections in GD23

5.15 SGN has not identified any additional connections in the P6 or P7 contract categories. We consider this a reasonable assumption for GD23.

SGN - Determined volumes

5.16 Gas consumption volumes for the final determination are based on a review the company's proposals and an assessment of recent average rates of consumption per property.

	SGN Average consumption 2028 (therms per prop)	Average consumption applied in the final determination (therms per prop)
P1 - Domestic Owner Occupied	381	380
P1 - Domestic New Build	372	320
P1 - Domestic NIHE	329	310
P1 - Small I&C Tariff IC1	1,418	850
P2 - Medium I&C Tariff IC2	6,080	5,500

Table 5.11: SGN - average consumption (therms) per property

5.17 In view of the limited experience of consumption per property in the SGN area, we have reduced the average consumption per property for future new build and NIHE domestic and small I&C to reflect the experience of FE which serves an area with some similar characteristics. The consumption per property for small I&C is also consistent with experience in the SGN area up to 2021.

5.18 We have reduced consumption per property proposed by the company for Medium I&C. However, we have increased the value from the draft determination to reflect the fact that consumption per property in the SGN and FE areas up to 2021.

5.19 A further adjustment was applied to the profile of consumption by tariff category based on updated estimates of consumption for 2022 and 2023 provided by FE and PNGL as part of the 2023 tariff process. We recognise that any estimate of gas consumption in the short to medium term is uncertain and will be dependent on movements in the wholesale price of gas, Government support mechanism and how consumers respond to changes in the price of gas.

5.20 The percentage adjustment applied to different tariff categories are shown in Table 4.8.

	2022	2023	2024	2025	2026 +
P1 - Domestic	7.5%	10.0%	8.2%	5.2%	4.0%
P1 - Very Small I&C	7.5%	10.0%	6.4%	4.9%	4.0%
P2 - Small I&C	15.0%	15.0%	8.4%	5.7%	4.0%

Table 5.12: SGN – profiled reduction in consumption in the early year of GD23

5.21 Following the draft determination, SGN provided an update on the projected consumption of Contract I&C connections (P3 and above) based on on-going engagement with current and potential consumers. These indicate a combination of connections delayed and consumption reduced, reflecting current economic conditions. We have accepted these estimates for the final determination. As these were based on latest best estimates taking account of economic conditions, no further adjustments were applied.

5.22 The final step when estimating consumption was to apply a long term energy efficiency adjustment. In its Business Plan submission, SGN applied a 30% energy efficiency adjustment in equal steps to estimated consumption from 2029 to 2057. As noted above, our final determination includes an energy efficiency adjustment of 25% applied in equal steps from 2029 (post GD23) to 2057.

5.23 The overall impact of our review of estimated consumptions for GD23 is shown on Table 5.2 above.