



ENERGY &
UTILITY SKILLS

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Workforce requirements of the UK's gas transmission and distribution network operators (2023 to 2040)

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Version 3



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1 Executive summary

1.1 Workforce supply – The current workforce

1.1.1 There are 12,904 people employed in the GDNs/TOs.

1.1.2 7% of the GDN/TO workforce are young people (aged 16-24), compared to 6% across the whole of the UK gas networks industry (and 11% across all sectors of the economy).

1.2.1 If the GDNs/TOs collectively were to have an ambition of having at least 11% of its workforce being aged between 16-24 years (equivalent to the national average), then this would mean increasing the number of young people from 922 to 1,419 – an increase of 497 (+54%) over current numbers.

1.1.3 7% of the GDN/TO workforce are aged 60+ years, compared to 7% across the whole of the UK gas networks industry (and 11% across all sectors of the economy).

1.1.4 14% of the GDN/TO workforce are female. Across the UK gas networks industry as a whole, 29% are female (although this figure does include non-technical/operational employees).

1.1.5 It seems that despite all the efforts of a wide range of organisations, there is still some way to go in addressing the gender gap within technical/ engineering functions across the gas networks (as there is more generally across the UK's infrastructure and utilities sectors).

1.1.6 Where ethnicity is known, 9% of the workforce are from an ethnic minority, which is slightly lower than the average across the UK gas networks industry (11% across all occupational groups)¹. Across the UK population as a whole, 13% are from an ethnic minority.

1.1.7 Confirmed data (i.e. having a positive yes/no (or similar) statement) relating to any disabilities of employees is held for just 137 of the 12,904 employees (1%). Of these, 3% had a disability.

1.1.8 3% were non-UK nationals, which is much lower than the 10% across the UK population².

1.1.9 As might be expected, the average current length of service generally increases as you go up the pay grades (from 6.6 years at level 1 up to 14.6 years at level 7). Furthermore, average current length of service also increases with age. This suggests that career progression within this workforce is strong.

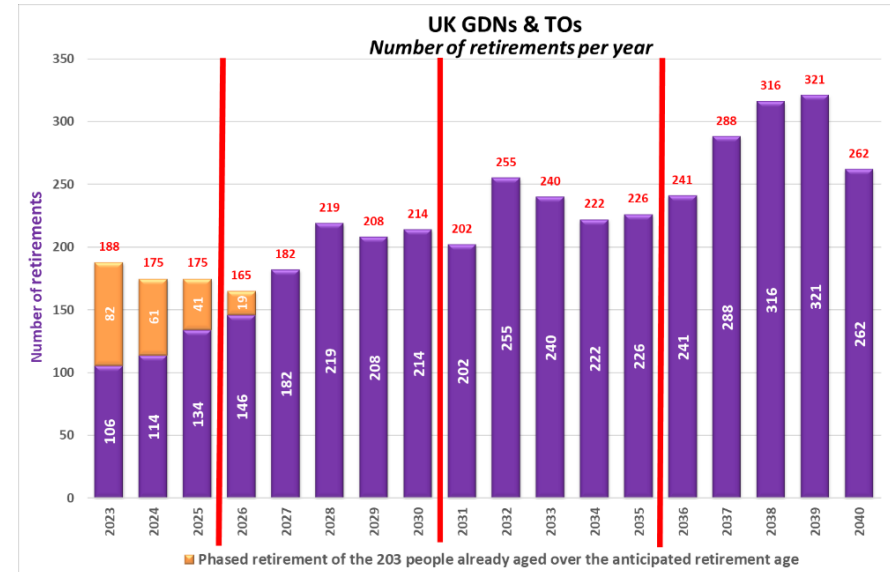
¹ Annual Population Survey, January to December 2021, ONS.

² Annual Population Survey, January to December 2021, ONS.

1.2 Workforce demand – Predicting future vacancies

- 1.2.1 Over the remaining three years of GD2, 538 people are projected to retire from the workforce – equivalent to 4% of the current workforce.
- 1.2.2 This includes 203 people who are already aged over their anticipated retirement age. These have been phased out over the next four years on the basis of 82 in 2023, 61 in 2024, 41 in 2025 and 19 in 2026.
- 1.2.3 During GD3 (2026-2030), 988 people are predicted to retire (8% of the current workforce). This increases to 1,145 (9%) during GD4 (2031-2035).

Figure 1: Estimated number of retirement per year

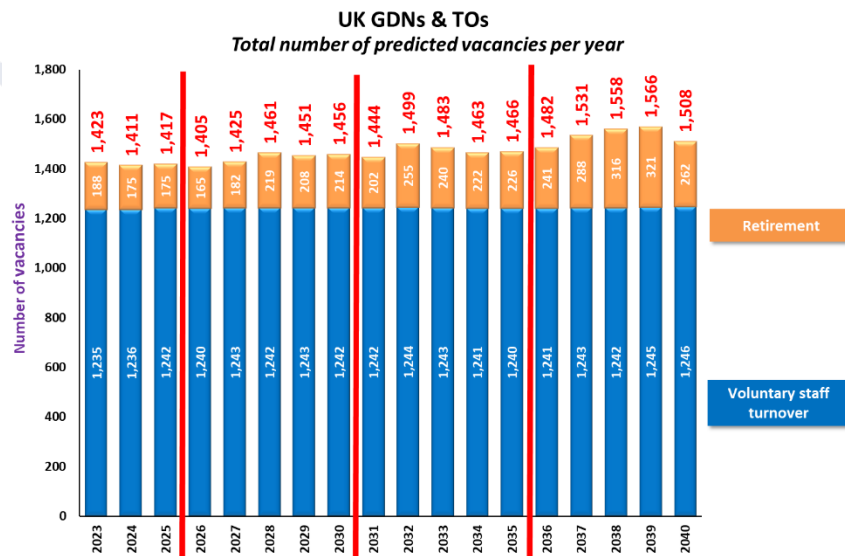


Source: GDNs/TOs Strategic Workforce Planning, 2023.

- 1.2.4 Based on the average length of service of those currently aged 60 years and older – 20.2 years – an aggregate of 30,825 years' experience could be lost by 2030 through retirements.
- 1.2.5 The annual rate of voluntary staff turnover is assumed to be 10%. On this basis, 3,713 vacancies are projected to be created over the next three years – equivalent to 29% of the current workforce.
- 1.2.6 Over the course of GD3, 6,210 vacancies are predicted to be created by staff turnover (equivalent to 48% of the current workforce).

1.2.7 In total, some 11,449 vacancies are projected to be created by 2030 (averaging 1,431 per year) – equivalent to replacing 89% of the current workforce.

Figure 2: Projected vacancies by year and cause



1.3 The external labour market

1.3.1 As can be seen from the colouring in the table below, there is a clear correlation between poor performance in economic status, educational attainment & progression and levels of deprivation (coloured red) – and vice versa (good performance is coloured green).

1.3.2 In theory, in those regions which are ranked lower than the median (1-6), the more likely it is that attracting and retaining the right skills could prove to be a challenge.

1.3.3 Conversely, in those local areas which are ranked higher than the median (7-12), the more likely it is that attracting and retaining the right skills could be easier.

Figure 3: Overall ranking of each region and nation in terms of their performance against a range of labour market measures

Rank	Region	Average overall ranking	Average ranking of economic status	Average ranking of education attainment & progression	Average ranking of deprivation score
1	North East	2.9	1.7	4.2	1.0
2	Northern Ireland	4.5	4.5	4.4	N/A
3	Wales	4.9	5.0	4.8	N/A
4	East Midlands	5.2	6.3	4.0	6.0
5	Yorkshire and The Humber	5.2	5.7	4.8	3.0
6	West Midlands	5.7	4.5	6.8	5.0
7	North West	5.7	5.8	5.6	2.0
8	Scotland	7.0	6.3	7.6	N/A
9	London	7.8	6.5	9.0	4.0
10	East	8.0	9.7	6.4	8.0
11	South East	10.0	10.2	9.8	9.0
12	South West	10.1	11.2	9.0	7.0

1.4 Occupational heat map

1.4.1 Taking into account average annual demand for people and the perceived level of difficulty in acquiring skills from the external labour market, an occupation heat map has been produced. This highlights a number of job families that should be considered priority areas to address potential skills shortages:

- L5 - IT/Software/Cyber Engineer
- L5 - Project Manager
- L5 - Quantity Surveyor
- L6 - Control Engineer
- L6 - Electrical Engineer
- L6 - Instrumentation Engineer
- L6 - IT/Software/Cyber Technical Lead
- L6 - Mechanical Engineer
- L6 - Senior Project Manager
- L7 - Business/Data Manager
- L7 - Senior Engineer
- L7 - Senior IT/Software/Cyber Manager

1.5 Issues for discussion

It is recommended that the gas network companies consider the following issues:

- 1.5.1 **Trainees** account for 4.4% of the current workforce. A benchmark figure to aim for in this respect would be c5%. This would mean increasing the number of trainees from 565 to 645 (an increase of 14%).
- 1.5.2 **Female** representation is low – just 14% across the whole workforce, and 9% of trainees.
- 1.5.3 **Ethnic minority** representation is low – 9% of the workforce is from an ethnic minority, compared to 12% across the UK population as a whole. 13% of trainees are from an ethnic minority.
- 1.5.4 Insufficient data was submitted to be able to analyse the level and range of **disabilities** in the GDNs/TOs workforce. Members should consider their strategy for understanding in more detail the physical and learning disabilities of their employees.
- 1.5.5 GDNs/TOs should also consider whether they are making the most of the skills available to them in their regional labour markets, including from people from all **nationalities**.
- 1.5.6 GDNs/TOs should consider refining the assumptions which the outputs are based on:
 - **Retirement age**
 - **Voluntary staff turnover**
 - The group should consider whether/how it wants to include **additional future headcount** as a result of increased investment levels and major policy announcements. This could be achieved by either:
 - Group members providing their planned headcounts for future years, or
 - One or more scenarios being developed based on a set of broader, industry-level assumptions
- 1.5.7 In relation to the **occupational heat map**, GDNs/TOs should review the perceived level of difficulty in acquiring the skills values given to each job family (the vertical axis) to ensure they are as accurate as possible.

2 About this report

2.1 Introduction

2.1.1 This report presents the findings of an investigation into the workforce requirements of the UK gas transmission and distribution network operators through to 2040.

2.1.2 The following pages present a series of statistical analyses which estimate the quantity and timing of vacancies across the GDNs/TOs and presents resourcing strategy that fills each vacancy with a competent person in a timely manner.

2.1.3 The analysis is focussed exclusively on the principal technical and engineering job roles. “Non-technical” roles such as strategic management, HR, finance, retail, etc. are outside the scope of this study. See Annex 1 for the full list of the job families in scope.

2.1.4 The following companies participated in this exercise:

- Cadent
- Firmus Energy
- National Gas Transmission
- Northern Gas Networks
- Phoenix Natural Gas
- SGN
- Wales and West Utilities

2.1.5 In addition, reports have been produced that review the local labour market conditions within each network area.

2.1.6 Taken together, the contents of these reports provide the UK gas transmission and distribution network operators with a detailed assessment of their likely workforce supply and demand challenges and opportunities through to 2040.

3 Workforce supply – The current workforce

3.1 Workforce structure

3.1.1 There are 12,904 people employed in the GDNs/TOs.

Figure 4: Total workforce by job family

Skill level and Job family	Total workforce
Trainees	565
Other Trainee	262
Apprentice	271
Degree Apprentice	6
Graduate	26
1 (4 in Scotland)	1,294
Gas Network Operative	932
General Technical Operative	362
2 (5 in Scotland)	2,774
Meter Operator	25
Network Craftsperson	1,156
Records Control Assistant	323
Service Layer	298
Technical Support	972
3 (6 in Scotland)	3,815
First Call Operative	2,422
IT/Cyber Technician	21
Main Layer	168
Network Design	62
Network Technician	988
Planner/Scheduler	154

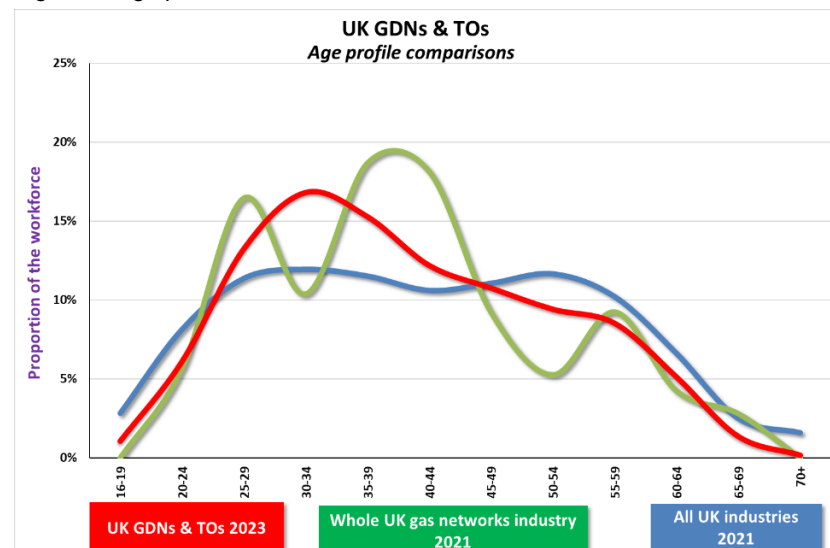
Skill level and Job family	Total workforce
4 (7 or 8 in Scotland)	2,114
Business/Data Analyst	194
First Line Manager	1,283
Network Engineer	346
Senior Technician	80
Technical Supervisor	211
5 (7 or 8 in Scotland)	761
IT/Software/Cyber Engineer	87
Junior Engineer	300
Project Manager	254
Quantity Surveyor	120
6 (9 or 10 in Scotland)	1,130
Civil/Construction Engineer	2
Control Engineer	116
Design Engineer	37
Electrical Engineer	18
Instrumentation Engineer	39
IT/Software/Cyber Technical Lead	101
Mechanical Engineer	5
Network Operations Manager	130
Senior Business/Data Analyst	62
Senior Planner/Scheduler	27
Senior Project Manager	116
Team Leader/Functional Manager	477
7 (11 in Scotland)	399
Business/Data Manager	2
Functional Head of	97
Senior Engineer	159
Senior Functional Manager	119
Senior IT/Software/Cyber Manager	22
8 (12 in Scotland)	52
Director	52
Total workforce	12,904

3.1.2 4.4% of the workforce are trainees.

3.2 Age profile

- 3.2.1 7% of the GDN/TO workforce are young people (aged 16-24), compared to 6% across the whole of the UK gas networks industry (and 11% across all sectors of the economy).
- 3.2.2 It should be noted, however, that this figure includes 565 trainees, which are significantly more likely to be young people. If trainees are excluded, just 5% of the workforce are young people.
- 1.2.2 If the GDNs/TOs collectively were to have an ambition of having at least 11% of its workforce being aged between 16-24 years (equivalent to the national average), then this would mean increasing the number of young people from 922 to 1,419 – an increase of 497 (+54%) over current numbers.
- 3.2.3 7% of the GDN/TO workforce are aged 60+ years, compared to 7% across the whole of the UK gas networks industry (and 11% across all sectors of the economy).

Figure 5: Age profile of the GDNs/TOs workforce



- 3.2.4 However, there are substantial variations across the skill levels and job families. In the table below, job families shaded in red/pink have a worse proportion than the overall average for GDNs/TOs, while those shaded green have a better proportion than the average.

Figure 6: Age profile of the workforce

Skill level and Job family	Total workforce	% aged 16-24	% aged 60+
Trainees	565	51.2%	0.0%
Other Trainee	262	27.5%	0.0%
Apprentice	271	74.9%	0.0%
Degree Apprentice	6	50.0%	0.0%
Graduate	26	42.3%	0.0%
1 (4 in Scotland)	1,294	11.9%	10.2%
Gas Network Operative	932	14.1%	5.3%
General Technical Operative	362	6.4%	22.9%
2 (5 in Scotland)	2,774	9.4%	7.5%
Meter Operator	25	8.0%	8.0%
Network Craftsperson	1,156	8.7%	9.3%
Records Control Assistant	323	10.5%	15.2%
Service Layer	298	4.0%	2.7%
Technical Support	972	11.4%	4.2%
3 (6 in Scotland)	3,815	4.1%	6.1%
First Call Operative	2,422	4.2%	5.3%
IT/Cyber Technician	21	0.0%	4.8%
Main Layer	168	0.6%	4.8%
Network Design	62	1.6%	1.6%
Network Technician	988	4.9%	8.8%
Planner/Scheduler	154	2.6%	5.2%
4 (7 or 8 in Scotland)	2,114	1.4%	6.2%
Business/Data Analyst	194	2.1%	2.6%
First Line Manager	1,283	0.6%	7.2%
Network Engineer	346	3.2%	6.1%
Senior Technician	80	1.3%	8.8%
Technical Supervisor	211	2.4%	3.3%
5 (7 or 8 in Scotland)	761	3.2%	8.9%
IT/Software/Cyber Engineer	87	4.6%	6.9%
Junior Engineer	300	4.0%	7.3%
Project Manager	254	2.0%	7.1%
Quantity Surveyor	120	2.5%	18.3%
6 (9 or 10 in Scotland)	1,130	0.7%	4.5%
Civil/Construction Engineer	2	0.0%	0.0%
Control Engineer	116	2.6%	4.3%

Skill level and Job family	Total workforce	% aged 16-24	% aged 60+
Design Engineer	37	0.0%	2.7%
Electrical Engineer	18	0.0%	5.6%
Instrumentation Engineer	39	2.6%	2.6%
IT/Software/Cyber Technical Lead	101	2.0%	3.0%
Mechanical Engineer	5	0.0%	0.0%
Network Operations Manager	130	0.0%	5.4%
Senior Business/Data Analyst	62	0.0%	1.6%
Senior Planner/Scheduler	27	0.0%	0.0%
Senior Project Manager	116	0.9%	3.4%
Team Leader/Functional Manager	477	0.2%	5.9%
7 (11 in Scotland)	399	0.8%	6.3%
Business/Data Manager	2	0.0%	50.0%
Functional Head of	97	0.0%	5.2%
Senior Engineer	159	1.9%	8.2%
Senior Functional Manager	119	0.0%	4.2%
Senior IT/Software/Cyber Manager	22	0.0%	4.5%
8 (12 in Scotland)	52	0.0%	9.6%
Director	52	0.0%	9.6%
Total workforce	12,904	7.1%	6.6%

3.2.5 Not surprisingly, the higher skill levels employ very low levels of young people, reflecting the need for experience in addition to higher level qualifications.

3.2.6 In terms of the older workforce, there are some hotspots that will need some monitoring/attention, particularly:

- General Technical Operative (Level 1 (4 in Scotland))
- Records Control Assistant (Level 2 (5 in Scotland))
- Quantity Surveyor (Level 5 (7-8 in Scotland))

3.3 Gender

3.3.1 Of the 12,904 employees, gender was unknown for just 36 of them (almost all of these were Directors within one GDN).

3.3.2 14% of the GDN/TO workforce are female. Across the UK gas networks industry as a whole, 29% are female (although this figure does include non-technical/operational employees)³.

Figure 7: Gender of the workforce

Skill level and Job family	Total workforce	% female
Trainees	565	9%
Other Trainee	262	5%
Apprentice	271	11%
Degree Apprentice	6	33%
Graduate	26	23%
1 (4 in Scotland)	1,294	2%
Gas Network Operative	932	0%
General Technical Operative	362	6%
2 (5 in Scotland)	2,774	26%
Meter Operator	25	4%
Network Craftsperson	1,156	0%
Records Control Assistant	323	39%
Service Layer	298	0%
Technical Support	972	60%
3 (6 in Scotland)	3,815	4%
First Call Operative	2,422	1%
IT/Cyber Technician	21	43%
Main Layer	168	1%
Network Design	62	34%
Network Technician	988	2%
Planner/Scheduler	154	61%

Skill level and Job family	Total workforce	% female
4 (7 or 8 in Scotland)	2,114	17%
Business/Data Analyst	194	38%
First Line Manager	1,283	11%
Network Engineer	346	22%
Senior Technician	80	6%
Technical Supervisor	211	25%
5 (7 or 8 in Scotland)	761	17%
IT/Software/Cyber Engineer	87	25%
Junior Engineer	300	20%
Project Manager	254	15%
Quantity Surveyor	120	11%
6 (9 or 10 in Scotland)	1,130	24%
Civil/Construction Engineer	2	0%
Control Engineer	116	12%
Design Engineer	37	22%
Electrical Engineer	18	0%
Instrumentation Engineer	39	5%
IT/Software/Cyber Technical Lead	101	17%
Mechanical Engineer	5	20%
Network Operations Manager	130	23%
Senior Business/Data Analyst	62	31%
Senior Planner/Scheduler	27	56%
Senior Project Manager	116	16%
Team Leader/Functional Manager	477	31%
7 (11 in Scotland)	399	20%
Business/Data Manager	2	0%
Functional Head of	97	26%
Senior Engineer	159	15%
Senior Functional Manager	119	18%
Senior IT/Software/Cyber Manager	22	41%

³ Annual Population Survey, January to December 2021, ONS.

Skill level and Job family	Total workforce	% female
8 (12 in Scotland)	52	16%
Director	52	16%
Total workforce	12,904	14%

3.3.3 Generally speaking, there is a higher proportion of females employed in (i) Degree Apprenticeship and Graduates and (ii) roles that are not “technical”/directly on the assets, such as:

- Records Control Assistant (Level 2 (5 in Scotland))
- Technical Support (Level 2 (5 in Scotland))
- IT/Cyber Technician (Level 3 (6 in Scotland))
- Planner/Scheduler (Level 3 (6 in Scotland))
- Senior Planner/Scheduler (Level 6 (9-10 in Scotland))
- Senior IT/Software/Cyber Manager (Level 7 (11 in Scotland))

3.3.4 It seems that despite all the efforts of a wide range of organisations, there is still some way to go in addressing the gender gap within technical/ engineering functions across the gas networks (as there is more generally across the UK’s infrastructure and utilities sectors).

3.3.5 In 2021/22, just 4% of starts on such Apprenticeship Frameworks and Standards relevant to the sector were female⁴.

3.3.6 It is a different picture within Higher Education, where the proportion of first Degree starts on sector-relevant STEM courses in 2020/21 that were female was 29%)⁵.

⁴ Skills Funding Agency.

⁵ HESA Student Record, 2020/21.

3.4 Ethnicity

3.4.1 Ethnicity data is held for 8,321 of the 12,904 employees (64%).

3.4.2 Where ethnicity is known, 9% of the workforce are from an ethnic minority, which is slightly lower than the average across the UK gas networks industry (11% across all occupational groups)⁶. Across the UK population as a whole, 13% are from an ethnic minority.

Figure 8: Ethnicity profile of the workforce

Skill level and Job family	Total workforce	% ethnic minority
Trainees	565	13%
Other Trainee	262	11%
Apprentice	271	11%
Degree Apprentice	6	20%
Graduate	26	44%
1 (4 in Scotland)	1,294	3%
Gas Network Operative	932	2%
General Technical Operative	362	3%
2 (5 in Scotland)	2,774	8%
Meter Operator	25	10%
Network Craftsperson	1,156	5%
Records Control Assistant	323	9%
Service Layer	298	3%
Technical Support	972	13%
3 (6 in Scotland)	3,815	8%
First Call Operative	2,422	10%
IT/Cyber Technician	21	0%
Main Layer	168	N/A
Network Design	62	15%
Network Technician	988	4%
Planner/Scheduler	154	7%

Skill level and Job family	Total workforce	% ethnic minority
4 (7 or 8 in Scotland)	2,114	8%
Business/Data Analyst	194	21%
First Line Manager	1,283	5%
Network Engineer	346	14%
Senior Technician	80	8%
Technical Supervisor	211	5%
5 (7 or 8 in Scotland)	761	9%
IT/Software/Cyber Engineer	87	9%
Junior Engineer	300	7%
Project Manager	254	9%
Quantity Surveyor	120	9%
6 (9 or 10 in Scotland)	1,130	17%
Civil/Construction Engineer	2	50%
Control Engineer	116	20%
Design Engineer	37	20%
Electrical Engineer	18	0%
Instrumentation Engineer	39	17%
IT/Software/Cyber Technical Lead	101	21%
Mechanical Engineer	5	20%
Network Operations Manager	130	16%
Senior Business/Data Analyst	62	44%
Senior Planner/Scheduler	27	14%
Senior Project Manager	116	14%
Team Leader/Functional Manager	477	11%
7 (11 in Scotland)	399	13%
Business/Data Manager	2	0%
Functional Head of	97	5%
Senior Engineer	159	19%
Senior Functional Manager	119	8%
Senior IT/Software/Cyber Manager	22	25%

Skill level and Job family	Total workforce	% ethnic minority
8 (12 in Scotland)	52	0%
Director	52	0%
Total workforce	12,904	9%

3.4.3 As with gender, there is a higher proportion of ethnic diversity in (i) Degree Apprenticeship and Graduates, (ii) roles that are not “technical”/directly on the assets and (iii) in higher skill level roles.

3.4.4 Ethnic diversity of the population varies significantly by age, with younger age groups being more ethnically diverse and older generations – this is also true for the GDN/TO workforce.

3.4.5 The table below shows the levels of ethnic diversity across the nine English regions and three devolved nations.

3.4.6 The data contained in this table should be used as the benchmark for each GDN/TO in terms the ethnic diversity of their workforce.

3.4.7 Low ethnic minority representation continues to be evident across the range of utilities-relevant technical Apprenticeship Frameworks and Standards. In 2021/22, just 6% of starts on such Standards were from an ethnic minority background⁷.

3.4.8 It is a different picture within Higher Education, where the proportion of first Degree starts on sector-relevant STEM courses in 2020/21 that were from an ethnic minority was 29%⁸.

⁶ Annual Population Survey, January to December 2021, ONS.

⁷ Starts in 2021/22. National Statistics.

Figure 9: Proportion of (i) the resident population and (ii) 16-19-year-olds in each nation and region that are from an ethnic minority (2021)

DNO/TO	Workforce/ Nation/ Region	All ages	0-24	25-34	35-49	50-64	65+
Cadent	London	46%	57%	42%	46%	43%	31%
	West Midlands	23%	33%	26%	27%	15%	8%
	East Midlands	14%	21%	17%	17%	10%	5%
	East of England	14%	20%	16%	17%	9%	4%
	North East	7%	11%	10%	9%	4%	1%
National Gas	England	19%	27%	22%	22%	13%	7%
	North West	14%	22%	17%	17%	8%	4%
Northern Gas Networks	Yorkshire and The Humber	15%	23%	18%	18%	8%	4%
	North East	7%	11%	10%	9%	4%	1%
SGN	London	46%	57%	42%	46%	43%	31%
	South East	14%	20%	16%	17%	9%	4%
	Scotland	7%	9%	10%		2%	
Wales & West Utilities	South West	7%	11%	9%	9%	4%	2%
	Wales	6%	10%	8%	8%	4%	1%
Firmus Energy Phoenix Natural Gas SGN NI	Northern Ireland	3%	5%	5%		3%	1%
TO & DNO workforce		9%	12%	11%	9%	6%	6%

Source: Census of Population, 2021. Scotland: Annual Population Survey, 2021.

⁸ HESA Student Record, 2020/21.

3.5 Disability

- 3.5.1 Confirmed data (i.e. having a positive yes/no (or similar) statement) relating to any disabilities of employees is held for just 137 of the 12,904 employees (1%). Of these, 3% had a disability.
- 3.5.2 Across the whole of the UK gas networks industry, 14% of the workforce have some form of disability (this includes non-technical job roles).
- 3.5.3 The proportion of the GDN/TO workforce that are affected by physical or learning disabilities should, ideally, reflect that of the resident population of which it serves and recruits from – accepting that this is less likely within the craft, technical and engineering workforce.
- 3.5.4 The table below shows the proportion of the working age population that have some form of physical or learning condition using the following definitions:
- The Equality Act 2010 (EA) core definition, includes people of working age (16-64) who have a long-term physical or mental health condition that affects their day-to-day activities
 - Work-limiting disabled includes those who have a long-term disability which affects the kind or amount of work they might do
- 3.5.5 Across the UK, 23% of the resident working age population report having some form of disability.

Figure 10: Proportion of the working age (16-64) resident population that classifies itself as EA core or work-limiting disabled

DNO/TO	Workforce/ Nation/ Region	% with some form of disability
Cadent	London	18%
	West Midlands	24%
	East Midlands	26%
	East of England	21%
Northern Gas Networks	North East	27%
	North West	26%
	Yorkshire and The Humber	26%
	North East	27%
SGN	London	18%
	South East	22%
	Scotland	26%
Wales & West Utilities	South West	24%
	Wales	25%
Firmus Energy Phoenix Natural Gas SGN NI	Northern Ireland	23%
TO & DNO workforce		3% (based on a very small sample)

Source: Annual Population Survey, January to December 2021, ONS.

- 3.5.6 The North East has the highest level of disability within the working age population (27%), while London has the lowest (18%).
- 3.5.7 GDNs/TOs should consider how it reaches out to those with both learning and physical disabilities in order to make the most of the skills available in this section of the labour market.

3.6 Nationality

3.6.1 Data relating to nationality was provided for 5,592 of the 12,904 employees (43%).

3.6.2 3% were non-UK nationals, which is much lower than the 10% across the UK population⁹.

3.6.3 2% of the workforce are nationals of EU countries, while 1% are nationals from outside of the EU.

Figure 11: UK, EU and non-EU nationals in the workforce

Skill level and Job family	Total workforce	UK	EU	Rest of the world
Trainees	565	92%	4%	4%
Other Trainee	262	83%	9%	9%
Apprentice	271	97%	2%	1%
Degree Apprentice	6	N/A	N/A	N/A
Graduate	26	75%	0%	25%
1 (4 in Scotland)	1,294	91%	5%	3%
Gas Network Operative	932	100%	0%	0%
General Technical Operative	362	91%	5%	3%
2 (5 in Scotland)	2,774	96%	3%	1%
Meter Operator	25	100%	0%	0%
Network Craftsperson	1,156	97%	3%	0%
Records Control Assistant	323	95%	2%	3%
Service Layer	298	100%	0%	0%
Technical Support	972	95%	3%	2%

Skill level and Job family	Total workforce	UK	EU	Rest of the world
3 (6 in Scotland)	3,815	98%	2%	0%
First Call Operative	2,422	98%	2%	0%
IT/Cyber Technician	21	N/A	N/A	N/A
Main Layer	168	93%	7%	0%
Network Design	62	92%	0%	8%
Network Technician	988	100%	0%	0%
Planner/Scheduler	154	97%	3%	0%
4 (7 or 8 in Scotland)	2,114	97%	3%	1%
Business/Data Analyst	194	90%	7%	2%
First Line Manager	1,283	98%	1%	0%
Network Engineer	346	94%	6%	1%
Senior Technician	80	95%	4%	2%
Technical Supervisor	211	99%	0%	1%
5 (7 or 8 in Scotland)	761	97%	2%	1%
IT/Software/Cyber Engineer	87	86%	7%	7%
Junior Engineer	300	98%	1%	1%
Project Manager	254	100%	0%	0%
Quantity Surveyor	120	96%	4%	0%
6 (9 or 10 in Scotland)	1,130	96%	1%	3%
Civil/Construction Engineer	2	100%	0%	0%
Control Engineer	116	100%	0%	0%
Design Engineer	37	100%	0%	0%
Electrical Engineer	18	100%	0%	0%
Instrumentation Engineer	39	100%	0%	0%
IT/Software/Cyber Technical Lead	101	88%	3%	10%
Mechanical Engineer	5	80%	0%	20%
Network Operations Manager	130	96%	1%	3%
Senior Business/Data Analyst	62	91%	0%	9%
Senior Planner/Scheduler	27	100%	0%	0%
Senior Project Manager	116	96%	0%	4%
Team Leader/Functional Manager	477	97%	2%	1%

⁹ Annual Population Survey, January to December 2021, ONS.

Skill level and Job family	Total workforce	UK	EU	Rest of the world
7 (11 in Scotland)	399	94%	5%	1%
Business/Data Manager	2	N/A	N/A	N/A
Functional Head of	97	100%	0%	0%
Senior Engineer	159	63%	25%	13%
Senior Functional Manager	119	91%	9%	0%
Senior IT/Software/Cyber Manager	22	94%	6%	0%
8 (12 in Scotland)	52	50%	50%	0%
Director	52	50%	50%	0%
Total workforce	12,904	97%	2%	1%

Source: GDNs/TOs Strategic Workforce Planning, 2023.

3.6.4 The table below shows the proportion of the population that are UK nationals within each English region and devolved nation.

Figure 12: Proportion of the population that are UK nationals

DNO/TO	Workforce/ Nation/ Region	% UK nationals
Cadent	London	78%
	West Midlands	90%
	East Midlands	90%
	East of England	90%
	North East	96%
Northern Gas Networks	North West	92%
	Yorkshire and The Humber	93%
	North East	96%
SGN	London	78%
	South East	91%
	Scotland	92%
Wales & West Utilities	South West	94%
	Wales	95%
Firmus Energy Phoenix Natural Gas SGN NI	Northern Ireland	93%
TO & DNO workforce		97%

Source: Annual Population Survey, January to December 2021, ONS.

3.6.5 Each GDN/TO should consider whether they are making the most of the skills available to them in their regional labour markets – from people of all nationalities.

3.7 Length of service

3.7.1 Current length of service was provided for 12,003 of the 12,904 employees (93%).

3.7.2 The average current length of service across the GDN/TO workforce is 9.9 years.

Figure 13: Average current length of service by business unit

Skill level and Job family	Total workforce	Average current length of service
Trainees	565	1.2
Other Trainee	262	1.4
Apprentice	271	1.0
Degree Apprentice	6	N/A
Graduate	26	0.7
1 (4 in Scotland)	1,294	6.6
Gas Network Operative	932	5.6
General Technical Operative	362	9.2
2 (5 in Scotland)	2,774	7.8
Meter Operator	25	7.4
Network Craftsperson	1,156	9.2
Records Control Assistant	323	7.6
Service Layer	298	8.9
Technical Support	972	5.9
3 (6 in Scotland)	3,815	10.5
First Call Operative	2,422	9.9
IT/Cyber Technician	21	14.9
Main Layer	168	11.6
Network Design	62	11.1
Network Technician	988	11.9
Planner/Scheduler	154	9.5

Skill level and Job family	Total workforce	Average current length of service
4 (7 or 8 in Scotland)	2,114	12.6
Business/Data Analyst	194	8.0
First Line Manager	1,283	14.3
Network Engineer	346	8.2
Senior Technician	80	12.2
Technical Supervisor	211	13.0
5 (7 or 8 in Scotland)	761	13.5
IT/Software/Cyber Engineer	87	6.9
Junior Engineer	300	14.3
Project Manager	254	13.8
Quantity Surveyor	120	16.1
6 (9 or 10 in Scotland)	1,130	13.5
Civil/Construction Engineer	2	2.5
Control Engineer	116	19.7
Design Engineer	37	12.5
Electrical Engineer	18	13.7
Instrumentation Engineer	39	22.8
IT/Software/Cyber Technical Lead	101	4.6
Mechanical Engineer	5	2.8
Network Operations Manager	130	17.1
Senior Business/Data Analyst	62	9.6
Senior Planner/Scheduler	27	14.1
Senior Project Manager	116	13.3
Team Leader/Functional Manager	477	13.5
7 (11 in Scotland)	399	14.6
Business/Data Manager	2	46.0
Functional Head of	97	15.1
Senior Engineer	159	11.3
Senior Functional Manager	119	16.0
Senior IT/Software/Cyber Manager	22	5.8
8 (12 in Scotland)	52	11.3
Director	52	11.3
Total workforce	12,904	9.9

- 3.7.3 As might be expected, the average current length of service generally increases as you go up the pay grades (from 6.6 years at level 1 up to 14.6 years at level 7).
- 3.7.4 Furthermore, average current length of service also increases with age.
- 3.7.5 This suggests that career progression within this workforce is strong.

Figure 14: Average current length of service and aggregate number of years by age group

Age group	Total workforce	
	Average	Aggregate
16-24 years	1.6	1,385
25-39 years	5.7	31,015
40-59	14.3	69,873
60+ years	20.2	16,237
Total workforce	9.9	118,795

- 3.7.6 The current average length of service for employees aged 60+ years is 20.2 years.

4 Workforce demand – Predicted number of vacancies

4.0.1 In order to predict the demand for people over the coming years, a number of assumptions have been applied to the workforce data detailed above. These relate to:

- The anticipated retirement age of the workforce
- The anticipated rate of annual staff turnover
- Any predicted changes in headcount

4.0.2 For the purposes of the following analysis, it is assumed that no retirements or staff turnover will occur within each of the four trainee entry routes.

4.1 Retirements

4.1.1 Predicting when employees may retire is a complex and uncertain art. With no statutory retirement age, higher life expectancy (currently 85 for a man and 87 for a woman), improved health and a range of economic factors, it is likely that the recent trend of people working for longer will continue (particularly as the “Final Salary” workforce diminishes).

4.1.2 In this analysis, we have assumed that people will retire from the workforce when they reach the following ages:

- Level 1 (4 in Scotland) = 64
- Level 2 (5 in Scotland) = 64
- Level 3 (6 in Scotland) = 64
- Level 4 (7-8 in Scotland) = 64
- Level 5 (7-8 in Scotland) = 64
- Level 6 (9-10 in Scotland) = 63
- Level 7 (11 in Scotland) = 63
- Level 8 (12 in Scotland) = 62

4.1.3 Over the remaining three years of GD2, 538 people are projected to retire from the workforce – equivalent to 4% of the current workforce.

4.1.4 This includes 203 people who are already aged over their anticipated retirement age. These have been phased out over the next four years on the basis of 82 in 2023, 61 in 2024, 41 in 2025 and 19 in 2026.

4.1.5 During GD3 (2026-2030), 988 people are predicted to retire (8% of the current workforce). This increases to 1,145 (9%) during GD4 (2031-2035).

Figure 15: Projected retirements by price control period

Skill level and Job family	Remainder of GD2		GD3 Number	GD4 Number
	Number of retirements	% of workforce		
1 (4 in Scotland)	91	7%	104	116
Gas Network Operative	28	3%	50	57
General Technical Operative	63	17%	54	59
2 (5 in Scotland)	127	5%	221	210
Meter Operator	2	8%	1	2
Network Craftsperson	63	5%	125	91
Records Control Assistant	35	11%	25	23
Service Layer	5	2%	11	21
Technical Support	22	2%	59	73
3 (6 in Scotland)	144	4%	304	364
First Call Operative	79	3%	180	240
IT/Cyber Technician	1	5%	2	2
Main Layer	5	3%	8	18
Network Design	1	2%	1	3
Network Technician	52	5%	107	89
Planner/Scheduler	6	4%	6	12
4 (7 or 8 in Scotland)	79	4%	156	179
Business/Data Analyst	2	1%	6	12
First Line Manager	57	4%	103	111
Network Engineer	12	3%	22	22
Senior Technician	5	6%	10	7
Technical Supervisor	3	1%	15	27

Skill level and Job family	Remainder of GD2		GD3 Number	GD4 Number
	Number of retirements	% of workforce		
5 (7 or 8 in Scotland)	37	5%	61	85
IT/Software/Cyber Engineer	3	3%	7	9
Junior Engineer	12	4%	18	30
Project Manager	10	4%	20	28
Quantity Surveyor	12	10%	16	18
6 (9 or 10 in Scotland)	39	3%	97	135
Civil/Construction Engineer	0	0%	0	0
Control Engineer	3	3%	10	16
Design Engineer	1	3%	2	5
Electrical Engineer	1	6%	4	0
Instrumentation Engineer	0	0%	6	5
IT/Software/Cyber Technical Lead	3	3%	9	18
Mechanical Engineer	0	0%	0	1
Network Operations Manager	4	3%	13	9
Senior Business/Data Analyst	1	2%	6	7
Senior Planner/Scheduler	0	0%	1	3
Senior Project Manager	2	2%	9	12
Team Leader/Functional Manager	24	5%	37	59
7 (11 in Scotland)	16	4%	41	50
Business/Data Manager	1	50%	0	0
Functional Head of Senior Engineer	2	2%	11	11
Senior Functional Manager	10	6%	17	18
Senior IT/Software/Cyber Manager	2	2%	13	17
Senior IT/Software/Cyber Manager	1	5%	0	4
8 (12 in Scotland)	5	10%	4	6
Director	5	10%	4	6
Total workforce	538	4%	988	1145

4.1.6 The job families that are expected to lose a higher proportion of their workforce through retirement by 2030 (i.e. over the remainder of GD2 and the entirety of GD3) are:

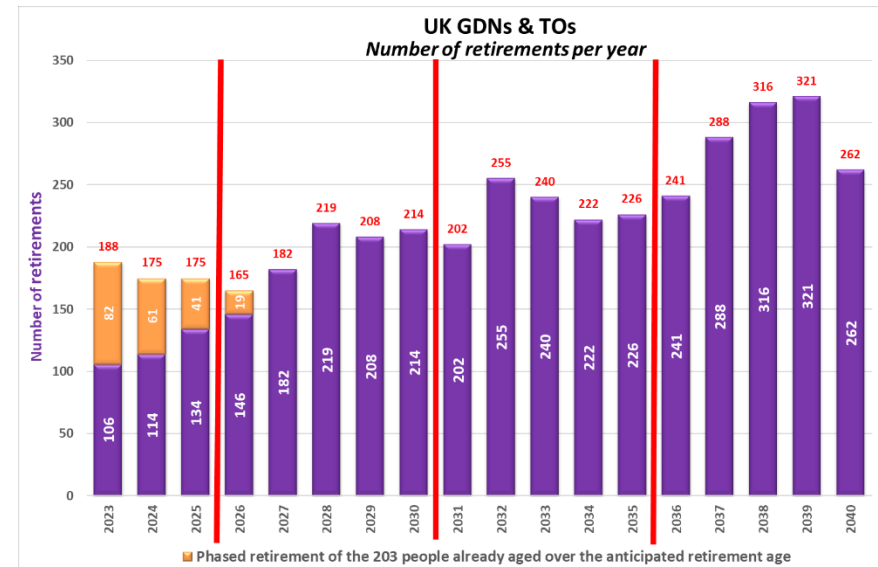
- General Technical Operative (Level 1 (4 in Scotland) – 117 retirements (32% of the current workforce)
- Electrical Engineer (Level 6 (9-10 in Scotland) – 5 retirements (28% of the current workforce)
- Quantity Surveyor (Level 5 (7-8 in Scotland) – 28 retirements (23% of the current workforce)

4.1.7 The job families that are expected to lose the largest volume through retirement by 2030 (i.e. over the remainder of GD2 and the entirety of GD3) are:

- First Call Operative (Level 3 (6 in Scotland) – 259 retirements (11% of the current workforce)
- Network Craftsperson (Level 2 (5 in Scotland) – 188 retirements (16% of the current workforce)
- First Line Manager (Level 4 (7 in Scotland) – 160 retirements (12% of the current workforce)
- Network Technician (Level 3 (6 in Scotland) – 159 retirements (16% of the current workforce)
- General Technical Operative (Level 1 (4 in Scotland) – 117 retirements (32% of the current workforce)

4.1.8 The figure below shows the number of retirements predicted during each year through to 2040.

Figure 16: Projected number of retirements per year



4.1.9 Based on the average length of service of those currently aged 60 years and older – 20.2 years – an aggregate of 30,825 years' experience could be lost by 2030 through retirements.

4.1.10 The main conclusion to draw from this is that succession planning is be crucial – particularly in those job families that are listed on the left.

4.2 Staff turnover

- 4.2.1 In this initial analysis, an annual rate of voluntary staff turnover of 10% has been applied across the GDN/TO workforce.
- 4.2.2 The average rate of voluntary resignations across the UK are reported as¹⁰:
- All sectors = 14.6%
 - 8.8% within the “Engineering” occupation
- 4.2.3 Based on this assumption, 3,713 vacancies are projected to be created as a result of staff turnover over the remainder of GD2 (equivalent to 29% of the current workforce).
- 4.2.4 Over the course of GD3, 6,210 vacancies are predicted to be created by staff turnover (equivalent to 48% of the current workforce).
- 4.2.5 Overall, this means that 9,923 vacancies are predicted to be created by staff turnover by 2030 (equivalent to 77% of the current workforce).

4.3 Total number of predicted vacancies

- 4.3.1 In this analysis, it is assumed that the GDN/TO workforce will remain at current levels throughout the period of these projections.
- 4.3.2 In total, some 11,449 vacancies are projected to be created by 2030 (averaging 1,431 per year) – equivalent to replacing 89% of the current workforce.
- 4.3.3 In the table below, those job families that are predicted to lose 100% or more of their current workforce by 2030 are highlighted in red.

¹⁰ Labour turnover rates: XpertHR survey 2019.

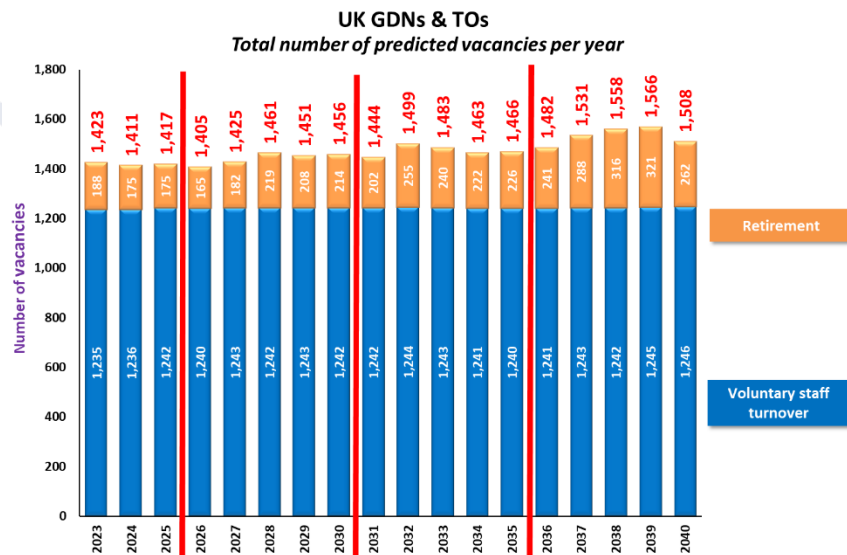
Figure 17: Total number of predicted vacancies by 2030 (remainder of GD2 and GD3)

Job Family	Retirements	Staff turnover	Additional headcount	Total vacancies	% of workforce
1 (4 in Scotland)	195	1033	0	1228	95%
Gas Network Operative	78	741	0	819	88%
General Technical Operative	117	292	0	409	113%
2 (5 in Scotland)	348	2228	0	2576	93%
Meter Operator	3	23	0	26	104%
Network Craftsperson	188	920	0	1108	96%
Records Control Assistant	60	261	0	321	99%
Service Layer	16	240	0	256	86%
Technical Support	81	784	0	865	89%
3 (6 in Scotland)	448	3082	0	3530	93%
First Call Operative	259	1944	0	2203	91%
IT/Cyber Technician	3	20	0	23	110%
Main Layer	13	136	0	149	89%
Network Design	2	56	0	58	94%
Network Technician	159	802	0	961	97%
Planner/Scheduler	12	124	0	136	88%
4 (7 or 8 in Scotland)	235	1694	0	1929	91%
Business/Data Analyst	8	157	0	165	85%
First Line Manager	160	1028	0	1188	93%
Network Engineer	34	278	0	312	90%
Senior Technician	15	66	0	81	101%
Technical Supervisor	18	165	0	183	87%
5 (7 or 8 in Scotland)	98	623	0	721	95%
IT/Software/Cyber Engineer	10	71	0	81	93%
Junior Engineer	30	242	0	272	91%
Project Manager	30	209	0	239	94%
Quantity Surveyor	28	101	0	129	108%

Job Family	Retirements	Staff turnover	Additional headcount	Total vacancies	% of workforce
6 (9 or 10 in Scotland)	136	908	0	1044	92%
Civil/Construction Engineer	0	1	0	1	50%
Control Engineer	13	92	0	105	91%
Design Engineer	3	28	0	31	84%
Electrical Engineer	5	14	0	19	106%
Instrumentation Engineer	6	32	0	38	97%
IT/Software/Cyber Technical Lead	12	84	0	96	95%
Mechanical Engineer	0	4	0	4	80%
Network Operations Manager	17	103	0	120	92%
Senior Business/Data Analyst	7	49	0	56	90%
Senior Planner/Scheduler	1	28	0	29	107%
Senior Project Manager	11	92	0	103	89%
Team Leader/Functional Manager	61	381	0	442	93%
7 (11 in Scotland)	57	328	0	385	96%
Business/Data Manager	1	1	0	2	100%
Functional Head of	13	77	0	90	93%
Senior Engineer	27	131	0	158	99%
Senior Functional Manager	15	100	0	115	97%
Senior IT/Software/Cyber Manager	1	19	0	20	91%
8 (12 in Scotland)	9	27	0	36	69%
Director	9	27	0	36	69%
Total workforce	1,526	9,923	0	11,449	89%

4.3.4 The following figure shows the total number of vacancies forecast to be created in each of the next 20 years.

Figure 18: Projected vacancies by year and cause



4.3.5 The following table shows the number predicted vacancies by price control period through to 2040:

- Remainder of GD2 (2023-2035) = 4,251
- GD3 (2026-2030) = 7,198
- GD4 (2031-2035) = 7,355
- GD5 (2036-2040) = 7,645

Figure 19: Total number of predicted vacancies by price control period

Skill level and Job family	Remainder of GD2 (2023-25)	GD3 (2026-30)	GD4 (2031-35)	GD5 (2036-40)
1 (4 in Scotland)	480	748	763	749
Gas Network Operative	306	513	520	522
General Technical Operative	174	235	243	227
2 (5 in Scotland)	964	1612	1604	1635
Meter Operator	11	15	16	18
Network Craftsperson	409	699	667	687
Records Control Assistant	133	188	187	184
Service Layer	95	161	171	173
Technical Support	316	549	563	573
3 (6 in Scotland)	1,299	2,231	2,289	2,407
First Call Operative	808	1,395	1,455	1,546
IT/Cyber Technician	8	15	14	13
Main Layer	57	92	104	110
Network Design	21	37	37	43
Network Technician	354	607	591	608
Planner/Scheduler	51	85	88	87
4 (7 or 8 in Scotland)	716	1,213	1,241	1,317
Business/Data Analyst	62	103	112	119
First Line Manager	442	746	753	817
Network Engineer	117	195	197	202
Senior Technician	30	51	47	50
Technical Supervisor	65	118	132	129
5 (7 or 8 in Scotland)	269	452	475	472
IT/Software/Cyber Engineer	28	53	54	60
Junior Engineer	103	169	182	185
Project Manager	87	152	157	152
Quantity Surveyor	51	78	82	75

Skill level and Job family	Remainder of GD2 (2023-25)	GD3 (2026-30)	GD4 (2031-35)	GD5 (2036-40)
6 (9 or 10 in Scotland)	377	667	701	767
Civil/Construction Engineer	0	1	1	2
Control Engineer	37	68	73	82
Design Engineer	11	20	22	23
Electrical Engineer	8	11	11	13
Instrumentation Engineer	11	27	24	27
IT/Software/Cyber Technical Lead	34	62	69	69
Mechanical Engineer	1	3	3	3
Network Operations Manager	42	78	74	92
Senior Business/Data Analyst	19	37	38	39
Senior Planner/Scheduler	11	18	21	21
Senior Project Manager	37	66	70	80
Team Leader/Functional Manager	166	276	295	316
7 (11 in Scotland)	137	248	254	271
Business/Data Manager	1	1	1	1
Functional Head of	31	59	59	66
Senior Engineer	59	99	100	95
Senior Functional Manager	38	77	78	88
Senior IT/Software/Cyber Manager	8	12	16	21
8 (12 in Scotland)	9	27	28	27
Director	9	27	28	27
Total workforce	4,251	7,198	7,355	7,645

5 Summary of regional labour market conditions

5.1.1 Labour markets, particularly at a sub-national level, are extremely complicated concepts and rarely conform to a statistical summary based on a wide range of factors. Therefore, the following analysis should be treated with a degree of caution.

5.1.2 Each of the three devolved nations and nine English regions have been ranked from “worse” to “best” based on their relative performance against 13 labour market measures.

Figure 20: Measures of national and regional labour market performance

Measure	Notes on interpretation/ranking
Employment rate	<ul style="list-style-type: none"> % of working age population that are in employment A HIGH rate is considered a POSITIVE attribute
Job density	<ul style="list-style-type: none"> The numbers of jobs per resident aged 16-64 A HIGH ratio is considered a POSITIVE attribute
Unemployment rate (16+ economically active)	<ul style="list-style-type: none"> % of 16+ population that are unemployed A LOW rate is considered a POSITIVE attribute
Unemployment rate (16-24-year-olds)	<ul style="list-style-type: none"> % of 16-24-year-olds that are unemployed A LOW rate is considered a POSITIVE attribute
Long-term unemployment (over 1 year)	<ul style="list-style-type: none"> % of unemployed people that have been so for more than one year A LOW proportion is considered a POSITIVE attribute
Economic Inactivity rate	<ul style="list-style-type: none"> % of working age population that are not in the active labour market (e.g. retired, sick, students, etc.) A LOW rate is considered a POSITIVE attribute

Measure	Notes on interpretation/ranking
Average rank of deprivation (England only)	<ul style="list-style-type: none"> Average national ranking of constituent Local Authority Districts (out of 317) A HIGH rate is a POSITIVE attribute
Working age population with no qualifications	<ul style="list-style-type: none"> % of working age population with no qualifications A LOW proportion is a POSITIVE attribute
16-19-year-olds with no qualifications	<ul style="list-style-type: none"> % of 16-19-year-olds with no qualifications A LOW proportion is a POSITIVE attribute
Working age population with at least a Degree	<ul style="list-style-type: none"> % of working age population with at least a Degree A HIGH proportion is a POSITIVE attribute
16-17-year-olds not in education or training	<ul style="list-style-type: none"> % of 16-17-year-olds not in education or training A LOW proportion is a POSITIVE attribute
18-24-year-olds in full-time education	<ul style="list-style-type: none"> % of 16-24-year-olds in full-time education A HIGH proportion is a POSITIVE attribute
Vacancies reported as skills shortages	<ul style="list-style-type: none"> % of vacancies reported as skills shortages A LOW proportion is a POSITIVE attribute

5.1.3 Each nation and region is then given an overall rank based on their average rank against these 13 measures. The table below shows the overall ranking of each nation and region – 1 being the worst-performing area and 12 being the best-performing.

5.1.4 In theory, in those regions which are ranked lower than the median (1-6), the more likely it is that attracting and retaining the right skills could prove to be a challenge.

5.1.5 Conversely, in those local areas which are ranked higher than the median (7-12), the more likely it is that attracting and retaining the right skills could be easier.

Figure 21: Overall ranking of each region and nation in terms of their performance against a range of labour market measures

Rank	Region	Average overall ranking	Average ranking of economic status	Average ranking of education attainment & progression	Average ranking of deprivation score
1	North East	2.9	1.7	4.2	1.0
2	Northern Ireland	4.5	4.5	4.4	N/A
3	Wales	4.9	5.0	4.8	N/A
4	East Midlands	5.2	6.3	4.0	6.0
5	Yorkshire and The Humber	5.2	5.7	4.8	3.0
6	West Midlands	5.7	4.5	6.8	5.0
7	North West	5.7	5.8	5.6	2.0
8	Scotland	7.0	6.3	7.6	N/A
9	London	7.8	6.5	9.0	4.0
10	East	8.0	9.7	6.4	8.0
11	South East	10.0	10.2	9.8	9.0
12	South West	10.1	11.2	9.0	7.0

5.1.7 Conversely, the **South West** and **South East** have relatively well-performing skills/labour markets, but have high levels of power sector job concentration.

5.1.6 Where a nation or region ranks poorly overall (e.g. **North East**, **Northern Ireland** and **Wales**), it is more likely that attracting and retaining the right skills could prove to be more of a challenge than in other, better performing, areas. However, this could be tempered somewhat by the relative lack of demand in these compared to the UK average (all three areas have a level of power sector job concentration (LQ) that is around half of the UK average).

Figure 22: Overall ranking of each nation and region in terms of labour market performance and the total number of estimated transmission and distribution vacancies (1 being the worst-performing area and 12 being the best-performing) – Data is also provided on the number of job postings within each area over the past 12 months, along with their Location Quotient (or concentration of power sector jobs)

Region	Relevant gas network operator	Overall ranking	Number of job postings**	Location Quotient*
North East	Cadent and Northern Gas Networks	1	327	0.6
Northern Ireland	Firmus Energy, Phoenix Natural Gas and SGN	2	196	0.6
Wales	Wales & West Utilities	3	282	0.5
West Midlands	Cadent	4	1,519	0.9
Yorkshire & Humber	Northern Gas Networks	5	1,133	0.8
East Midlands	Cadent	6	1,354	1.0
North West	Northern Gas Networks	7	1,429	0.7
East of England	Cadent	8	1,162	0.7
Scotland	SGN	9	3,694	2.8
London	Cadent and SGN	10	2,845	0.8
South West	Wales & West Utilities	11	2,189	1.3
South East	SGN	12	3,021	1.0

Source: Lightcast™, 2023.

* The location quotient is the number of job openings per capita in an area expressed as a ratio of the national job openings per capita for the same occupation (local postings/local employment) / (national postings / national employment). An LQ of greater than 1.2 equates to “high” for that area.

5.1.8 Over the past 12 months, there have been 22,472 job postings in the power sector¹. The job roles with the largest volume of job postings were:

■ Project Manager	932
■ Software Developer	847
■ Data / Data Mining Analyst	713
■ Electrical Engineer	633
■ HVAC Mechanic / Installer	570
■ Electrician	494
■ Admin Assistant	370
■ Civil Engineer	361
■ Customer Service Rep	359
■ Mechanical Engineer	358

5.1.9 As the chart below shows, there has been a strong post-COVID recovery in job postings – a situation mirrored across all sectors of the UK economy.

Figure 23: Number of job postings in the power sector by month



Source: Burning Glass technologies, 2022.

6 Occupational Heat Map

6.1.1 The purpose of this heat map is to graphically present a quantitative summary of the challenge facing the gas networks industry in relation to occupational “hotspots” in demand and skills shortages.

6.1.2 The heat map is based on:

- Horizontal axis – Average annual demand expressed as a percentage of the total workforce

Note that currently, no additional headcount in future years has been included (i.e. the demand data relates to the replacement of leavers only)

- Vertical axis – The perceived level of difficulty in acquiring the required skills, in the required volume, from the external labour market

This is subjective value on a scale of 1 to 10 (1 being easy to recruit; 10 being very difficult/impossible) based on feedback gained from employers in the industry

6.1.3 Those job families highlighted in red in the chart and table below should be considered as priority areas for action on the basis that they have both:

- An average annual demand of at least 5% per year
- A high perceived level of difficulty in acquiring the required skills (of at least 7 out of 10)
- A high level of average annual demand (of at least 10% per year)

Figure 24: Gas networks occupational heat map

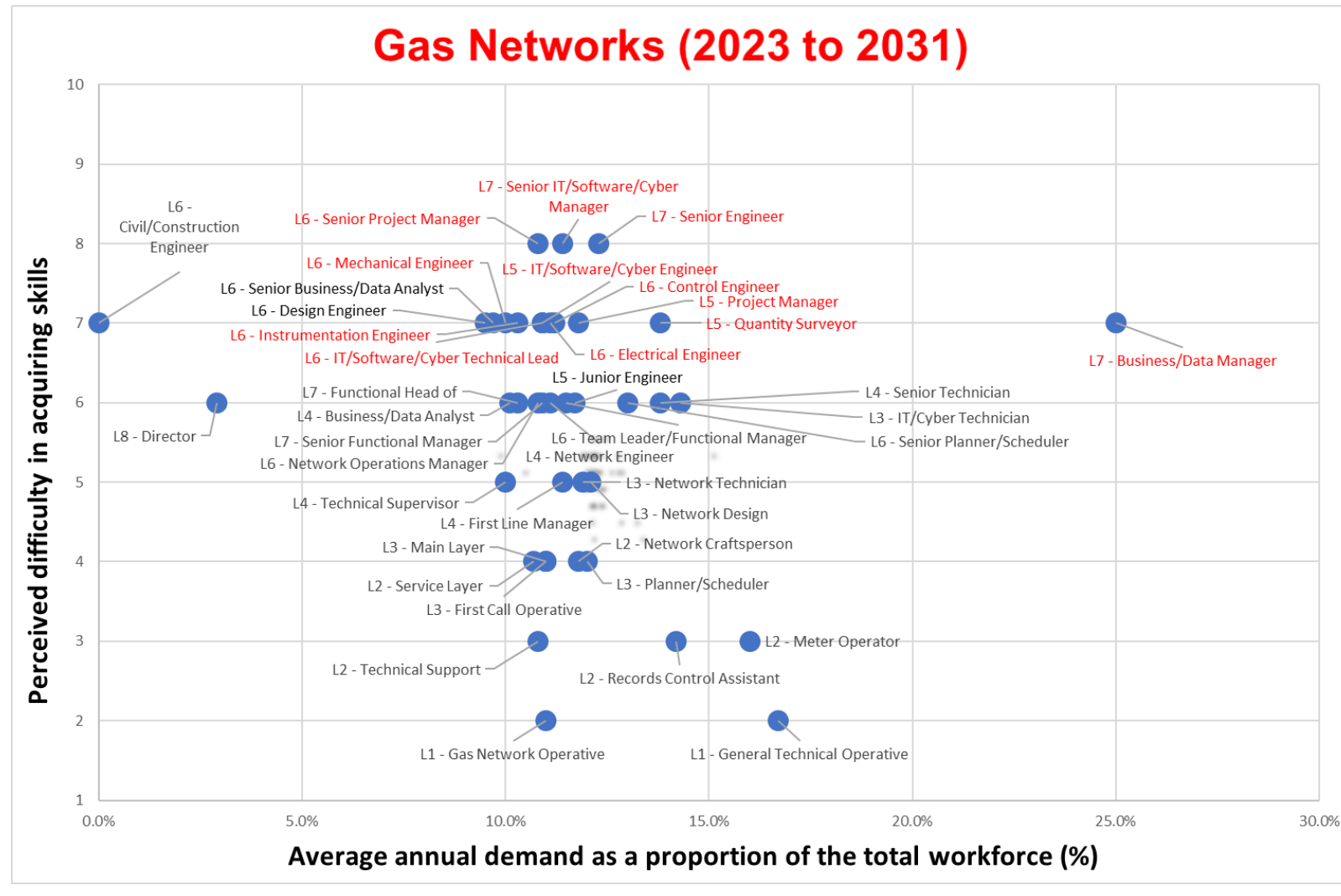


Figure 25: Data on which the occupational heat map is based

Job Role	Average annual demand	Perceived difficulty in acquiring skills
L1 – Gas Network Operative	11.0%	2
L1 - General Technical Operative	16.7%	2
L2 - Meter Operator	16.0%	3
L2 - Network Craftsperson	11.8%	4
L2 - Records Control Assistant	14.2%	3
L2 - Service Layer	10.7%	4
L2 - Technical Support	10.8%	3
L3 - First Call Operative	11.0%	4
L3 - IT/Cyber Technician	14.3%	6
L3 - Main Layer	11.0%	4
L3 - Network Design	12.1%	5
L3 - Network Technician	11.9%	5
L3 - Planner/Scheduler	12.0%	4
L4 - Business/Data Analyst	10.1%	6
L4 - First Line Manager	11.4%	5
L4 - Network Engineer	11.1%	6
L4 - Senior Technician	13.8%	6
L4 - Technical Supervisor	10.0%	5
L5 - IT/Software/Cyber Engineer	10.9%	7
L5 - Junior Engineer	11.7%	6
L5 - Project Manager	11.8%	7
L5 - Quantity Surveyor	13.8%	7

Job Role	Average annual demand	Perceived difficulty in acquiring skills
L6 - Civil/Construction Engineer	0.0%	7
L6 - Control Engineer	11.2%	7
L6 - Design Engineer	9.5%	7
L6 - Electrical Engineer	11.1%	7
L6 - Instrumentation Engineer	10.3%	7
L6 - IT/Software/Cyber Technical Lead	10.9%	7
L6 - Mechanical Engineer	10.0%	7
L6 - Network Operations Manager	10.8%	6
L6 - Senior Business/Data Analyst	9.7%	7
L6 - Senior Planner/Scheduler	13.0%	6
L6 - Senior Project Manager	10.8%	8
L6 - Team Leader/Functional Manager	11.5%	6
L7 - Business/Data Manager	25.0%	7
L7 - Functional Head of	10.3%	6
L7 - Senior Engineer	12.3%	8
L7 - Senior Functional Manager	10.9%	6
L7 - Senior IT/Software/Cyber Manager	11.4%	8
L8 - Director	2.9%	6

7 Issues for discussion

It is recommended that the gas network companies consider the following issues:

- 7.1.1 **Trainees** account for 4.4% of the current workforce. A benchmark figure to aim for in this respect would be c5%. This would mean increasing the number of trainees from 565 to 645 (an increase of 14%).
- 7.1.2 **Female** representation is low – just 14% across the whole workforce, and 9% of trainees.
- 7.1.3 **Ethnic minority** representation is low – 9% of the workforce is from an ethnic minority, compared to 12% across the UK population as a whole. 13% of trainees are from an ethnic minority.
- 7.1.4 Insufficient data was submitted to be able to analyse the level and range of **disabilities** in the GDNs/TOs workforce. Members should consider their strategy for understanding in more detail the physical and learning disabilities of their employees.
- 7.1.5 GDNs/TOs should also consider whether they are making the most of the skills available to them in their regional labour markets, including from people from all **nationalities**.

7.1.6 GDNs/TOs should consider refining the assumptions which the outputs are based on:

- **Retirement age**
- **Voluntary staff turnover**
- The group should consider whether/how it wants to include **additional future headcount** as a result of increased investment levels and major policy announcements. This could be achieved by either:
 - Group members providing their planned headcounts for future years, or
 - One or more scenarios being developed based on a set of broader, industry-level assumptions

7.1.7 In relation to the **occupational heat map**, GDNs/TOs should review the perceived level of difficulty in acquiring the skills values given to each job family (the vertical axis) to ensure they are as accurate as possible.

Annex 1 – List of job families

Skill Level	Job Family	Example job titles
1 (4 in Scotland) <i>Equivalent to GCSE grades D-G</i>	Gas Network Operative	<ul style="list-style-type: none"> ➤ Plant Protection Officer <ul style="list-style-type: none"> ○ Gas Network Operative
	General Technical Operative	<ul style="list-style-type: none"> ➤ HGV Driver ➤ Plant Maintenance ➤ Maintenance Operative ➤ Reinstatement ➤ Trainees enter the workforce here when completed programme: <ul style="list-style-type: none"> ○ Operations Apprentice ○ Trainee FCO
2 (5 in Scotland) <i>Equivalent to GCSE grades A*-C</i>	Meter Operator	<ul style="list-style-type: none"> ➤ Meter Asset Engineer ➤ Senior Meter Reader ➤ Gas Network Craftsperson ➤ Trainees enter the workforce here when completed programme: <ul style="list-style-type: none"> ○ Apprentice Gas Service Engineer
	Network Craftsperson	<ul style="list-style-type: none"> ➤ Repair & Maintenance Craftsperson ➤ Mechanical Craftsperson ➤ Pipelines Craftsperson ➤ Operator
	Records Control Assistant	<ul style="list-style-type: none"> ➤ Records Control Assistant
	Service Layer	<ul style="list-style-type: none"> ➤ Service Layer ➤ Service Layer – Escape Locate & Repair ➤ Trainees enter the workforce here when completed programme: <ul style="list-style-type: none"> ○ Trainee Service Layer
	Technical Support	<ul style="list-style-type: none"> ➤ Customer Liaison – Operations ➤ Technical Administrator- Engineering

Skill Level	Job Family	Example job titles
3 (6 in Scotland) <i>Equivalent to A Level</i>	First Call Operative	<ul style="list-style-type: none"> ➤ Emergency Response Engineer ➤ Emergency Gas Service Engineer <ul style="list-style-type: none"> ○ Operational Response Engineer
	IT/Cyber Technician	<ul style="list-style-type: none"> ➤ IT Technician
	Main Layer	<ul style="list-style-type: none"> ➤ Main Layer ➤ Trainees enter the workforce here when completed programme: <ul style="list-style-type: none"> ○ Trainee Main Layer
	Network Design	<ul style="list-style-type: none"> ➤ Network Designer <ul style="list-style-type: none"> ○ Network Designer Support
	Network Technician	<ul style="list-style-type: none"> ➤ EC&I Technician ➤ Gas Service Technician ➤ Governor Maintenance Technician ➤ Network Technician ➤ Pipeline Technician ➤ Pressure Control/PM Technician ➤ Trainees enter the workforce here when completed programme: <ul style="list-style-type: none"> ○ Trainee Technician ○ Governor Maintenance Trainee
	Planner/Scheduler	<ul style="list-style-type: none"> ➤ Planner ➤ Scheduler

Skill Level	Job Family	Example job titles
4 (7 or 8 in Scotland) <i>Equivalent to HNC, BTEC Advanced Diploma L4</i>	Business/Data Analyst	<ul style="list-style-type: none"> ➤ Business Analyst ➤ Data Scientist <ul style="list-style-type: none"> ○ Data Assurance Officer
	First Line Manager	<ul style="list-style-type: none"> ➤ Engineering Support Supervisor ➤ Operations Process Supervisor ➤ Site Manager ➤ Technical First Line Managers ➤ Technical Support Officer ➤ Technical/Process Supervisor
	Network Engineer	<ul style="list-style-type: none"> ➤ Asset Maintenance Engineer ➤ Engineering Support Officer ➤ Designer ➤ Grid Control Officer ➤ Network Controller ➤ Network Design Officer ➤ Network Engineer ➤ Network Planner ➤ Records Officer ➤ Senior Governor Technician ➤ System Control Operator ➤ Trainees enter the workforce here when completed programme: <ul style="list-style-type: none"> ○ Trainee Network Engineer
	Senior Technician	<ul style="list-style-type: none"> ➤ Senior Technician ➤ Lead Operator
	Technical Supervisor	<ul style="list-style-type: none"> ➤ Capital Delivery Supervisor ➤ Function Supervisor – Health & Safety ➤ Technical/Process Supervisor

Skill Level	Job Family	Example job titles
5 (7 or 8 in Scotland) <i>Equivalent to HND, Foundation Degree, BTEC Advanced Diploma L5</i>	IT/Software/Cyber Engineer	<ul style="list-style-type: none"> ➤ IT Business Support ➤ IT Infrastructure Architect ➤ IT Business Partner ➤ Software Engineer <ul style="list-style-type: none"> ○ Developer
	Junior Engineer	<ul style="list-style-type: none"> ➤ Assistant Engineer ➤ Engineering Officer ➤ Associate Engineer ➤ Trainees enter the workforce here when completed programme: <ul style="list-style-type: none"> ○ Graduate Engineer
	Project Manager	<ul style="list-style-type: none"> ➤ Project Manager ➤ IT Project Manager ➤ Project Planner
	Quantity Surveyor	<ul style="list-style-type: none"> ➤ Estimator ➤ Quantity Surveyor

Skill Level	Job Family	Example job titles
6 (9 or 10 in Scotland) <i>Equivalent to Bachelor's Degree</i>	Civil/Construction Engineer	➤ Civil Engineer
	Control Engineer	➤ Control Engineer
	Design Engineer	➤ Design Engineer
	Electrical Engineer	➤ Electrical Engineer
	Instrumentation Engineer	➤ Instrumentation Engineer
	IT/Software/Cyber Technical Lead	➤ Lead/Senior Architect ➤ Senior Software Engineer ➤ Lead Developer ➤ Lead Designer
	Mechanical Engineer	➤ Mechanical Engineer
	Network Operations Manager	➤ NOM – Asset Maintenance ➤ NOM – Live Gas ➤ NOM – Network Development ➤ NOM – Network Performance ➤ NOM – Plant ➤ Senior System Control Manager ➤ Senior Designer
	Senior Business/Data Analyst	➤ Senior/Lead Analyst ➤ Principal Data Scientist
	Senior Planner/Scheduler	➤ Senior/Lead Planner ➤ Senior/Lead Scheduler
	Senior Project Manager	➤ Senior Project Manager ➤ Senior Project Planner

Skill Level	Job Family	Example job titles
	Team Leader/ Functional Manager	➤ Construction Manager ➤ Function Manager ➤ Meter Controller ➤ Operations & Maintenance Manager ➤ Performance Manager ➤ Sustainability Manager ➤ Team Leader/ Manager ➤ Technical/Process Manager
7 (11 in Scotland) <i>Equivalent to Master's Degree</i>	Business/Data Manager	➤ Data function manager
	Functional Head of	➤ Head of
	Senior Engineer	➤ Engineering Manager ➤ Principal Engineer ➤ Senior Engineer ➤ Senior Network Planner
	Senior Functional Manager	➤ Asset Manager ➤ Capital Delivery Manager ➤ Commercial Manager ➤ Construction Manager ➤ Health, Safety & Environmental Manager ➤ Network Development Manager ➤ Operations Manager ➤ Senior Manager – Customer ➤ Senior Policy Manager
	Senior IT/Software/Cyber Manager	➤ Chief Information Officer ➤ Senior Manager - IT ➤ Senior Manager – Network ➤ Senior Manager – Support
8 (12 in Scotland) <i>Equivalent to Doctorates</i>	Director	➤ Director of Technical Services ➤ Director of Engineering & Sustainability

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