

GDN Skills Investment – Skills Shortages Model

Revised Case Assumptions and Decisions

Version 20.0 @ 11.10.07

Major changes highlighted in yellow.

Assumptions behind the Modelling work

General

- Recognition of an aging workforce, by GDN's, led to the commissioning of the modelling work with EU Skills.
- Previous forecasts were based on historical trends, comparing successive PCR 5 year BPQs.
- This latest analysis takes a zero base budget approach (built from first principles), which is why the scale of the challenge has now come to light.
- Previously numbers had not been quantified in this way therefore a best estimate was included in the BPQ submissions.
- Due to the lead times to train employees to an appropriate level of competence, and the tightness of the engineering labour market, it is important that the GDN's act now to deliver an efficient longer term recruitment programme.
- This modelling uses GDN specific data and therefore provides the most accurate and up to date picture of the GDN skills challenge. Other research such as the NESS survey used Standard Industrial Classification (SIC) codes which being more generic in nature have an averaging effect . This has lead to fundamentally unrepresentative data being used to portray an incorrect position of the skills sector in the gas market.

Short term Measures

- Short term options for this formula period are available but, without longer term investment to replenish the pool it will lead to inefficiencies and sharp wage increases.
- The opportunity to recruit skilled labour is limited due to the aging of the workforce and tightness in the labour market.
- These actions do not represent a long term solution, but interim measures could include:
 - Migrant workers – long term supply not guaranteed, may also be retention issues.
 - Contractors – still a deficit in the market place, leading to overall wage inflation.
 - Recruit from market place – pool continues to deplete, leading to overall wage inflation.
 - Increase in overtime – limited scope due to WTR restrictions and standby requirements
 - Up-skilling – limited supply of operatives, also need back filling.

Efficiency Gains

- Efficiency gains from new recruits have already been factored into BPQ submissions.
- The proposed recruitment process will not drive additional productivity gains over and above those already included in GDN submissions.
- In addition the lead times to competency mean that any improvements in productivity will be unlikely to flow through until the next PCR period.

Meterwork

- Meterwork is used to maximise the productivity of emergency engineers during the quieter periods of the year (summer) by replacing waiting time with metering work.
- As meterwork declines the number of emergency engineers required becomes wholly a function of providing a 24/7/365 emergency service and the decline in meterwork does not impact the level of required resource.

Recruitment to Leavers Ratio

- The recruitment to leavers ratio is higher in the next PCR because of the high number of retirees that are expected to leave as a result of the aging workforce and the lead time of people reaching competence.
- The profile is designed to bring the model into balance as quickly as possible, whilst approximating a smooth profile of apprentice recruits.
- The length of time to competency and apprentice drop-out rates produce limiting factors to the speed with which GDNs can bring the model to balance.
- The desired level of recruitment and training in the early years has had to be scaled back in the model, as the current infrastructure is not capable of delivering such numbers.
- In addition each GDN will be constrained by the number of trainees they can provide quality training and mentoring for at any one time.

Collaboration Group

- A key element of the collaboration group work is to identify strategies for increasing the training capacity. There is a realisation that the current capacity is approximately half of the required numbers identified in the original analysis.
- Any investment in increasing this capacity will be of a long term nature. It is critical that if capacity is to be increased then long term funding needs to be secured to sustain this infrastructure, i.e. training numbers need to be broadly consistent over the 15 year period

Modelling Assumptions

Category	Current Assumptions	Comments
Category of Personnel	Model covers Maintenance and Operations roles – OPEX activities (skilled roles only as listed below)	<p>CAPEX and REPEX activities excluded from this analysis.</p> <p>Not included:</p> <ul style="list-style-type: none"> • Reinforcement • Replacement • Metering • Connections • Back Office <p>However, it should be recognised that these resource requirements will add further strain to the recruitment/training infrastructure.</p>
	Emergency (Excluding Meterwork and any additional activities associated with CO)	These projections include provision for the current emergency service only.
	Repair	
	Maintenance	
	Ops FLM (NVQ4)	
	Gas Specialists (NVQ4)	
Workload Projections	Flat (no reductions)	<p>The BPQs assumes a relatively flat profile.</p> <p>However:</p> <ul style="list-style-type: none"> • Emergency leakage is likely to rise slightly • Meterwork will be lost. If the meterwork is lost it will not be possible to reduce numbers however as the number of First Call Operative is required to cover a 1:4 standby rota. <p>The BPQs also assume that the connections workload is flat and the replacement workload has reached a plateau.</p>

Category	Current Assumptions	Comments
Manpower / Recruitment Levels	<p>No reduction.</p> <p>Need to ensure sufficient resources to operate the networks over a sustainable period.</p>	<p>Future manpower levels are a function of the need to provide 24/7/365 operations rather than workload.</p> <p>Regardless of productivity these numbers cannot be reduced due to geographical coverage of emergencies, standby being down to 1 in 4 and the limits imposed by WTR (which are safety related).</p> <p>The GDN statutory requirement to attend gas escapes within a fixed period of time is not expected to change over the period.</p> <p>Recruitment needs to commence now to address the shortfall in the next PCR period.</p>
Recruitment constraints	<p>35 – 40 apprentices per network</p> <p>2 – 4 graduates per network</p>	<p>Despite requiring larger numbers there are constraints due to the current lack of infrastructure externally and dedicated resources internally. The projections are considered to be at the limit of Training Infrastructure, Assessor Capacity and Management and Administrative infrastructure. No costs have been included to factor in this additional network capacity.</p>
Available Workforce		
Wastage - Age	<p>Leave at 60</p>	<p>Agreed should use leaving age of 60 for all categories. This should reflect a fair average.</p> <p>With current people under DB – final salary scheme reasonable to assume will leave at 60.</p>
Wastage - Others	<p>Natural wastage – 2%</p>	<p>This was considered a conservative estimate based on historical figures. Latest figures suggest that this is running at approx. 4%. Costs are very sensitive to minor changes in this parameter.</p> <p>If supply/demand gets more imbalanced then this would increase.</p> <p>Also the current DB pension schemes are a major incentive to remain and new recruits with DC schemes would be less “tied” to remain with the GDNs.</p>

Category	Current Assumptions	Comments
Shortfall / Surplus	<p>Need to ensure sufficient cover at all times.</p> <p>Short term shortages would be covered through the use of contractors.</p>	<p>To show a realistic recruitment profile year on year (without too many peaks and troughs) it is sensible to smooth the recruitment profile and allow some over/under resourcing over short periods.</p>
Years to competence	<p>3 Years – Repair / EMS Year 3 they would be 30% productive</p> <p>4 Years – Maintenance Year 4 they would be 30% productive</p> <p>2 Years additional training for Ops FLMs / Gas Specialists (assume graduates / part qualified external personnel)</p> <p>1 Year for Upskilling existing employees working in other parts of the network.</p> <p>They would be 50% productive over this year.</p>	<p>Agreement that although it would vary for apprentice / trainee depending on individual abilities, these are reasonable averages.</p> <p>During year 2 and beyond trainees spend more time in the workplace but they are supervised by a competent operative. No allowance has been made for the reduction in productivity of the competent operative due to mentoring or the time taken assessing their portfolios and competency levels. They would be partially productive in their final year and their salary and overhead training costs have been reduced to reflect this.</p> <p>During this period the GDNs would still need to duplicate these resources with competent operatives / staff.</p> <p>All these people work on “live gas” and must therefore be competent to cover standby rotas and to work on the networks.</p>
Recruitment Levels first 3/4 years (Red boxes)	<p>Apprentices / trainees recruited and still undergoing training included.</p>	<p>Networks have input the current intake of apprentices already in the system that will become competent in the next formula period.</p>
Drop Out Rate	<p>5% year on year for apprentices 10% year on year for graduates. 0% for upskilled (promoted) employees.</p> <p>(Revised to 5% year on year for apprentices based on current experience)</p>	<p>NG current experience is 11% in total over 3 years. However there is currently between a 10 and 20% drop out rate during the two years which immediately follow qualification. Recognised that rate likely to increase as future terms and conditions of new apprentices will not be as generous as in the past.</p> <p>British Gas current experience is 50% but it was felt that installer skills are more transferable and mobility would be greater.</p>

Category	Current Assumptions	Comments
		N.B. THIS DOES NOT TAKE INTO ACCOUNT APPRENTICES AND GRADUATES LEAVING AFTER QUALIFYING WHICH WILL IMPACT ON NATURAL WASTAGE.
Already in PCR	From Ofgem revised proposals 24/9/07.	Input revisions without FTEs as Ofgem have not indicated exactly how the revisions relates to FTEs
Recruitment Costs	Apprentices - £2.0 k Graduates – £2.0 k Existing Competent People from the marketplace - £1.0k	ALL PRICES AT 07/08 LEVELS and costs input from GDN consensus and experience.
Overheads	50% Plus £1k other costs.	ERO's per apprentice include: <ul style="list-style-type: none"> • National Insurance Contributions • Pension contributions • Sick and Holiday pay • Tools • Personal protective equipment • Uniforms. In addition, a number of apprentices require accommodation whilst studying at college. This costs approximately £75 per apprentice per week for 39 weeks, which equates to £2.9k per apprentice. For simplicity a figure of £1000 per apprentice was used as not all apprentices incur the additional costs.
Time span of submission spreadsheet	15 Years period – 3 PCR periods	After some discussion it was agreed that, although the last 3 years would clearly be more of an approximation, it will be beneficial to show the long term nature of this issue and the requirement for ongoing recruitment over (at least) the next 2 PCR periods.
Inflation	All prices at 07/08 levels, no real price inflation included.	Significant impact upon projected costs in later years of the 5 year plan.

Attachment 1 – Apprentice Recruitment Costs

Apprentice Recruitment Costs are based on actual historical costs associated with a competitively tendered provision for external recruitment. The table below shows the full costs incurred for the 2007 recruitment campaign.

<i>Item</i>	<i>Costs</i>
Attraction <ul style="list-style-type: none"> • attraction materials (brochures) • direct advertising (mail shots/web) 	£62k
Recruitment process management: <ul style="list-style-type: none"> • 1,803 applications of which 981 were for Distribution positions For the campaign as a whole: <ul style="list-style-type: none"> • 1507 competency screened • 685 motivational chats • 5 assessor training courses – 52 assessors trained • 609 invited to interview • 271 attended assessment centres • 28 Assessment centres • 119 successful at assessment centre • 93 offers, 8 declines, 1 offer withdrawn • 84 hires 	£74k
Psychometric testing – manual dexterity	£59k
Total Cost	£195k
Total Cost per hire	£2.3k

Attachment 2 – Apprentice / Graduate / Trainee Cost Breakdown

Category	Time to competency	Drop Out Rate p.a.	Costs		Recruitment & Training Options covered	Comments and Assumptions		
Competent Persons All trade categories	3 months	Nil	Cost of Year 1 Trainee		£000	Skilled and competent workers from the existing marketplace. They will have demonstrable competency in the skillset. Eg. Contractors, Installers, Migrant Workers, etc...	The 3 month programme will cover mainly assimilation of their competency qualification and familiarisation with the Network's policies, procedures and configuration.	
				3 Months Programme				
				Recruitment				1.00
				Salaries				6.00
				Employee O/heads (50%)				3.00
				Training Costs				3.00
				Other Costs				0.00
	TOTAL		13.00					
Competent Persons All staff categories	3 months	Nil	Cost of Recruitment - Competent Persons		£000	Skilled and competent workers from the existing marketplace. They will have demonstrable competency in the skillset. Eg. Contractors, Consultants, Migrant Workers, etc...	The 3 month programme will cover mainly assimilation of their competency qualification and familiarisation with the Network's policies, procedures and configuration.	
				Recruitment				1.00
				Salaries				8.00
				Employee O/heads (50%)				4.00
				Training Costs				5.00
				Other Costs				-
				TOTAL				18.00
Upskill Existing Employees and Backfill All trade categories	12 months	Nil	Upskill & Backfill		£000	Promotion of existing employees. This mainly covers upskilling GD1 mates to NVQ2 and backfilling with further recruitment of a GD1 mate to cover the vacancy.	12 month programme to take GD1 mate to NVQL2. 3 month programme (Reflected in the costs) to get GD1 mate to competency.	
			Upskill					
				Recruitment				1.00
				Salaries (50% productive)				8.00
				Employee O/heads (50%)				4.00
				Training Costs				7.50
				Other Costs				1.00
				TOTAL UPSKILL				33.50
			Backfill					
				Recruitment				1.00
				Salaries				5.00
				Training Costs				5.00
				TOTAL BACKFILL				11.00
	TOTAL		44.50					

Attachment 2 – Apprentice / Graduate / Trainee Cost Breakdown

Category	Time to competency	Drop Out Rate p.a.	Costs		Recruitment & Training Options covered	Comments and Assumptions
Upskill Existing Employees All staff categories	12 months	Nil	Upskill	£000	Promotion of existing employees.	12 month programme to take technician to FLM.
			Salaries (50% productive)	12.00		
			Employee O/heads (50%)	6.00		
			Training Costs	7.50		
			Other Costs	1.00		
			TOTAL UPSKILL	44.50		
Trainees Emergency and Repair Craftspersons	Emergency & Repair (NVQ2) 3 Years	5%	Cost of Year 1 Apprentice	£000	Covers both apprentices and adult trainees.	Assumed that in Year 3 they become 30% productive and are able to complete some work without supervision.
			Recruitment	2.00		
			Salaries	9.50		
			Employee O/heads (50%)	4.75		
			Training Costs	7.50		
			Other Costs	1.00		
			TOTAL	24.75		
			Cost of Year 2 Apprentice	£000		
			Salaries	12.00		
			Employee O/heads (50%)	6.00		
			Training Costs	7.50		
			Other Costs	1.00		
			TOTAL	26.50		
			Cost of Year 3 Competency Training	£000		
			Salaries (30% productive)	12.60		
Employee O/heads (50%)	6.00					
Training Costs	-					
Other Costs	1.00					
TOTAL	27.00					

Attachment 2 – Apprentice / Graduate / Trainee Cost Breakdown

Category	Time to competency	Drop Out Rate p.a.	Costs		Recruitment & Training Options covered	Comments and Assumptions
Trainees Maintenance	Maintenance (NVQ3) 4 Years	5%	Cost of Year 1 Apprentice	£000	Covers both apprentices and adult trainees.	Assumed that in Year 4 they become 30% productive and are able to complete some work without supervision.
			Recruitment	2.00		
			Salaries	9.50		
			Employee O/heads (50%)	4.75		
			Training Costs	7.50		
			Other Costs	1.00		
			TOTAL	24.75		
			Cost of Year 2 Apprentice	£000		
			Salaries	12.00		
			Employee O/heads (50%)	6.00		
			Training Costs	7.50		
			Other Costs	1.00		
			TOTAL	26.50		
			Cost of Year 3 Competency Training	£000		
			Salaries	18.00		
			Employee O/heads (50%)	9.00		
			Training Costs	7.50		
			Other Costs	1.00		
			TOTAL	34.50		
			Cost of Year 4 Competency Training	£000		
Salaries (30% productive)	14.00					
Employee O/heads (50%)	7.00					
Training Costs	-					
Other Costs	1.00					
TOTAL	30.00					

Attachment 2 – Apprentice / Graduate / Trainee Cost Breakdown

Category	Time to competency	Drop Out Rate p.a.	Costs			Recruitment & Training Options covered	Comments and Assumptions
Graduate Trainees Covers both operational first line managers and gas specialists.	2 Years	10% (expectations higher than for other recruits. Experience shows more difficult to retain).	Cost of Year 1 Trainee		£000	Graduate trainee programme.	
			Recruitment	2.00			
			Salaries	20.00			
			Employee O/heads (50%)	10.00			
			Training Costs	7.50			
			Other Costs	1.00			
			TOTAL	40.50			
			Cost of Year 2 Trainee		£000		
			Salaries	21.00			
			Employee O/heads (50%)	10.50			
			Training Costs	7.50			
			Other Costs	1.00			
TOTAL	40.00						