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ENERGY & UTILITY SKILLS

Skills for a greener world

Workforce Renewal and Skills Strategy: Workforce resilience workstream

Horizon scan of technologies and issues likely to affect the gas networks workforce - Abridged Version

Version 1C

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Part 1 – Desk Research

1. Introduction

1.1.1 This report sets out the findings of the gas network industry horizon scan (desk research and qualitative research) into issues that have the potential to impact upon the workforce and the skills required to deliver a successful future.

1.1.2 This Horizon Scan was conducted by Turquoise Thinking Ltd, an independent market research agency on behalf of Energy & Utility Skills. It is presented in two parts, Part I is findings from the desk research and Part II is finding from the qualitative research.

1.1.3 This paper summarises the findings of a literature review and interviews with industry experts into the following areas:

- Impact on operations and skills;
- Impact, in terms of volume (i.e. quantity of people likely to be affected);
- Timescale;
- Difficulty in acquiring the required skills.

1.1.4 This horizon scan covers all aspects of the gas networks industry – with a focus on installation, operations, maintenance skills, metering and connections.

1.1.5 In the following chapters, a summary is provided of each skill/ operational area technology and why it is important to the future success of the gas networks industry, and its potential impact on the workforce, timescale to deployment and ease of acquiring the necessary skills.

1.1.6 A red/amber/green table is also provided to indicate the level of urgency required:

	Impact – operations & skills	Impact – volume	Timescale	Difficulty in acquiring skills
High	Significant change	Will affect a large proportion of the workforce	Within the next 5 years	Skills do not exist – new provision will be required
Medium	Some change	Likely to affect reasonable numbers	Within 6-10 years	Majority of skills provision is likely to exist
Low	No or little change	No change or limited to very small numbers/ niche areas	11 years +	Skills mostly available within the current workforce

1.1.7 This horizon scan will be used by the National Skills Academy for Gas to determine which issues/areas warrant a “skills deep dive” investigation into the nature and extent of the potential impact on the gas network industry’s workforce.

1.1.8 The skills deep dives will also consider what actions need to be taken, and by whom, in order to meet the challenges and make the most of the opportunities. The National Skills Academy for Gas met on Monday 29th January to review the findings of the Horizon Scan and agree which areas, if any, require a ‘skills deep dive’.

1.1.9 More information about the scope and purpose of the skills deep dives can be found in Chapter 4 below.

2. Executive Summary (desk research and qualitative research)

This Horizon Scan consisting of desk research and qualitative research was conducted by Turquoise Thinking Ltd, an independent market research agency on behalf of Energy & Utility Skills.

In the desk research it was evident that the transition away from existing natural gas infrastructures and technologies to hydrogen blending in the networks for home heating, meant that gas engineers remain in a strong position in terms of demand for their services.

Existing skills will still be extremely valuable, albeit with some upskilling required in the long term – large-scale changes are still likely to be decades away and those with an understanding of how traditional appliances work will be vital in ensuring a smooth transition.

The desk research found that the fundamental skills of a gas engineer are transferable between natural gas and hydrogen so the day-to-day responsibilities of gas engineers are unlikely to change too drastically, and existing skills will still be in huge demand.

Companies will still need highly skilled, experienced staff to maximise current assets, maintain safety and continue improvements vital for ageing infrastructure.

In terms of current skills gaps and shortages, 20% of vacancies were 'skill shortage vacancies' i.e. vacancies that employers find hard to fill due to applicants lacking relevant skills, qualifications, or experience.

The uncertainty around specific timescales remains and depends on a wide range of factors, including the constantly changing political landscape and associated changes in policy. However, the pace of change in the plan to decarbonise the UK power sector in general is happening at a slower rate than expected.

According to Energy UK's predictions, the roadmap between existing heat network infrastructure and this ambitious vision for 2050 could attract between £30-£50 billion investment into the UK. This in turn would directly create between 20,000 and 35,000 jobs, while also supporting local regeneration and levelling up. This indicates that a significant impact on the workforce volume needed to deliver heat networks is likely in the longer-term.

At this stage, because thousands more engineers will need to learn how to install and maintain technologies linked with heat networks, the key difficulty is upskilling the existing workforce at the rate that may be required to keep pace with the ambitious growth path outlined for heat networks.

Overall, the sector needs to develop and sustain a workforce that is ready not only to tackle decarbonisation challenges, but also to find new opportunities and position companies positively for a sustainable future.

In the qualitative research attitudes towards the future of the gas industry were mostly positive. Most claim that they are 'agnostic' as to which technology is used to achieve net zero for customers and the gas industry within the UK. The respondents argued that they are not wedded to one technology or one power source. But although they see a move towards electrification they believed the UK was not ready for the mass move over to heat pumps and electric cars because of a lack of investment in the infrastructure to support it.

In essence, it was felt that the gas industry needs the Government to support it. In addition, the energy industry as a whole needs to work more collaboratively.

Most felt that the future of the gas industry was in green hydrogen. It was thought that there will be a gradual increase in hydrogen in the mix along with upgrading the infrastructure (most of which will be paid for by the consumer).

If the future was not green hydrogen (given the recent cancellation of the Redcar hydrogen village trial because the main source of hydrogen supply would not be available) it would be re-purposing of the pipes and infrastructure or perhaps de-commissioning. The Government is planning to postpone the decision on whether, and if so how, hydrogen will contribute to heating decarbonisation to 2026, leading to increasing frustration in the industry and a sense of a lack of leadership.

The key issue that emerged was the retention of staff and attracting new staff into the industry. This is highlighted in the desk research where it states that decarbonisation challenges are exacerbated by an existing decline in skills in some sectors of the economythat are critical to the transition.

The key challenges were:-

- Confidence in existence and longevity of jobs
- Access to and affordability of skills provision
- Training and retaining skills pipeline
- Parity of esteem for entrants into trade vocations
- Rate of movement of workers between jobs

There was a strong sense that all energy companies are vying for the same pool of talent. Thus there is a need to make the industry and engineering as a profession attractive to young people. There is also the issue that younger employees do not have the same long term outlook or staying in the same job as the previous generation of recruits.

Overall, it was felt that current skills are transferable and that training would be approximately 5 days to 2 weeks to transfer skills to hydrogen. There was discussion of 'pivoting off' core skills such as plumbing, heating, and electrician; the core foundation is in place.

There is a digitalisation 'piece' which is how to harness it and how to get digital natives into the industry so that the gas industry becomes more efficient.

Most feel that the future of the industry is exciting but the sector needs to come together to communicate that working in gas can be a 'fantastic career' with opportunities, variety, and career progression. However, all feel that there is a lack of investment. Moreover, there is not enough recognition of the unique challenges in the gas industry. Ofgem are focusing on supporting vulnerable customers and keeping the bills down not on helping the gas industry through this challenging transition to net zero.

The people we spoke to in the qualitative research believe Energy & Utility Skills is the perfect nucleus to unify the other parties and they should use their influence and network. One GDN asked for 'any help Energy & Utility Skills can give in terms of lobbying on behalf of the gas industry and on the unique challenges that the industry faces'.

Crucially, Energy & Utility Skills needs to support the entire industry, not just gas and to get their weight behind it, working collaboratively across sectors. They need to control the narrative for the gas industry, using their contacts, such as working with unions, to come together in one voice.

10. Next steps

The key findings from this research were presented to members of the National Skills Academy for Gas. It was agreed that subsequent 'deep dives' would not provide any additional value at this point but that an action plan would be developed with these employers to address the skills issues highlighted by this report.

Workforce resilience could feature in business case submissions for the RIIO-3 price controls for gas transmission and distribution. In light of this, there are plans to initiate development of workforce resilience metrics for the gas industry, as is currently being done as part of a project with power transmission and distribution companies.

The rationale for the Power industry was to develop a set of metrics that could provide an 'at a glance' quantitative assessment of workforce resilience, focussing on attraction, skills development, and retention. Members of the National Skills Academy for Gas will have the opportunity to discuss whether such an approach could yield benefits and, if so, explore an appropriate way forward for their own industry.

The second element likely to feature in discussions around an action plan is the emerging occupational mapping initiative. Currently in its very early stages, this initiative will create a "proof of concept" for an occupational mapping tool which details, for critical job roles across the energy and utilities sector, their core tasks, skills requirements, and routes to competency.

The aim of this is to support subsequent development of industry standards, as well as efficient upskilling and reskilling of individuals into essential roles. Effective occupational mapping also facilitates collaboration around workforce development and paves the way for greater equality of access to funding and training.

The future skills demand will need to be addressed through supply of new entrants as well as experienced workers transferring from adjacent industries. To achieve this, we need a clear sector attraction and retention strategy to attract the new workforce and then retain them for the future. As part of our commitment to supporting industry to develop a safe, skilled sustainable workforce Energy & Utility Skills has collaborated with industry to implement an action plan to deliver the Sector Attraction and Retention Strategy.

This includes:

- Targeted Activity for Priority Roles where known shortages have been identified
- Repurposing of routes to market to include industry and careers advice
- Targeted partnerships to maximise the impact of the strategy
- Developing the career pathways and information to support new entrants and advisors
- Collaboration and sharing of best practice to improve attraction and retention

Annex 1 – List of contributors

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