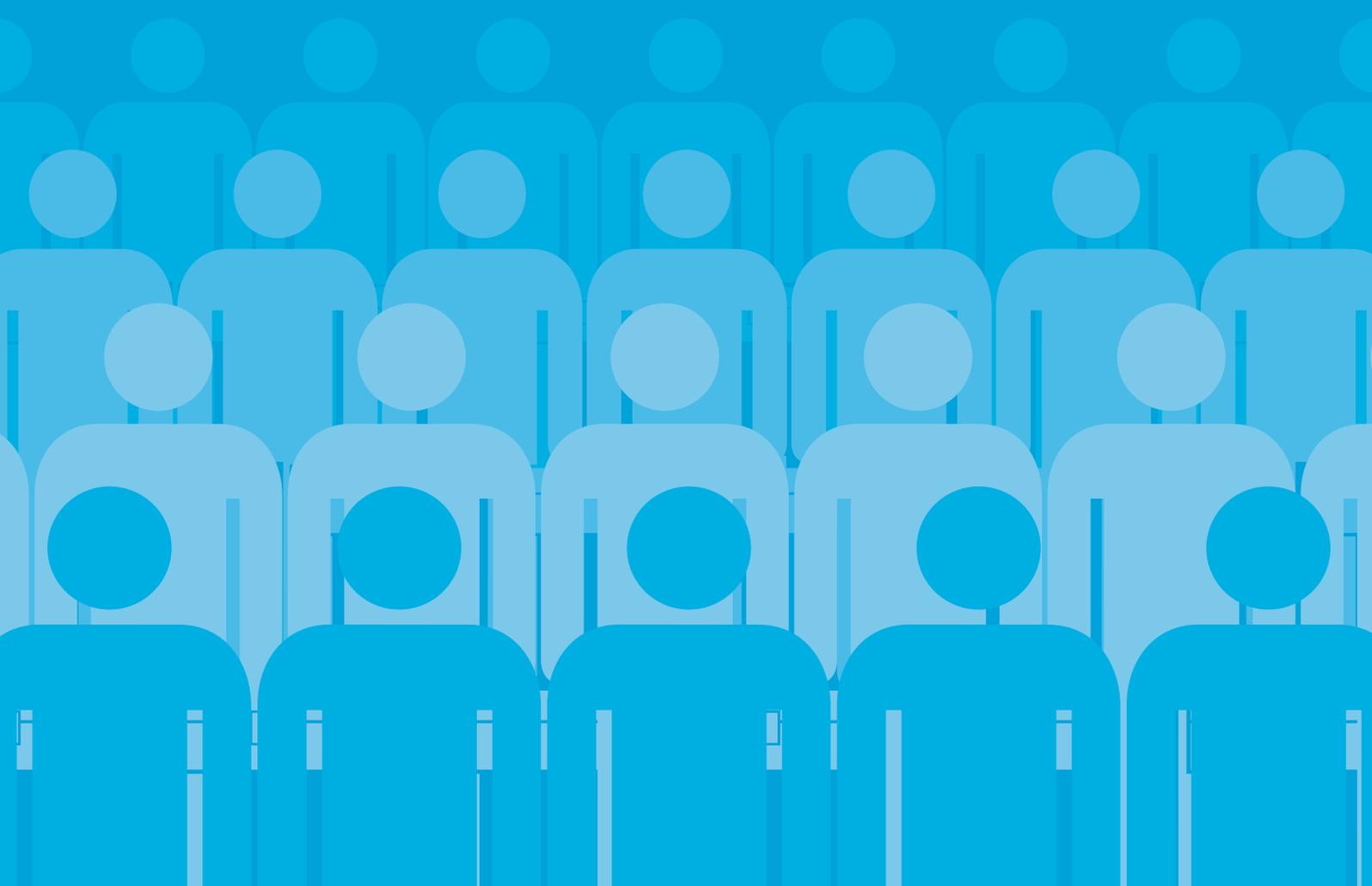


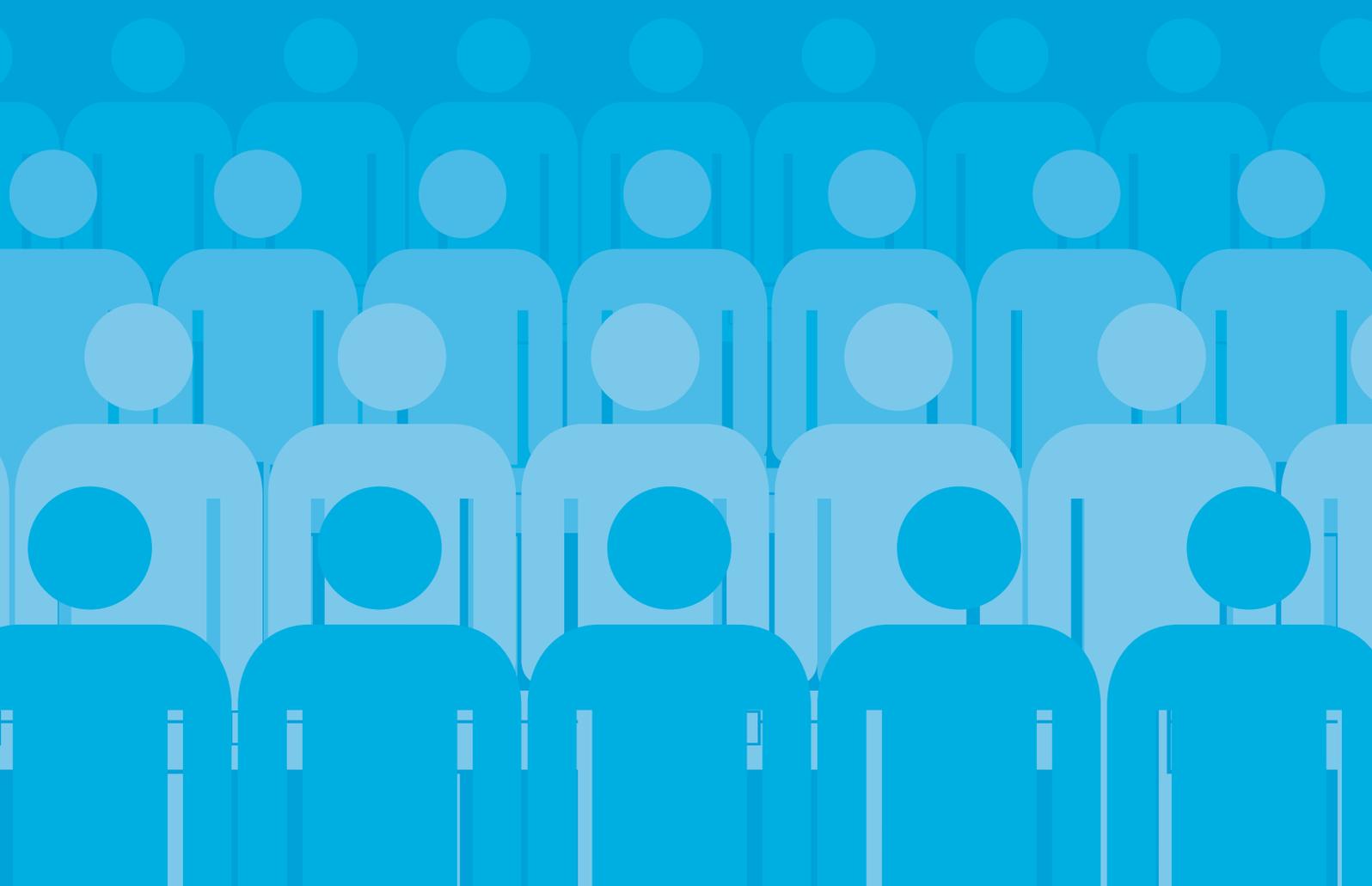
THE DECADE REVIEW

The UK gas industry considers its past, present and future



What the gas industry thinks...

The Decade Review is an independent record of how the UK's gas industry has changed and advanced during the past 10 years, and the challenges ahead – from the perspective of those who work within it.



What's inside

1.0 INTRODUCTION

1.1	Gas Safe Register	3
1.2	Methodology	5
1.3	Objectives	6

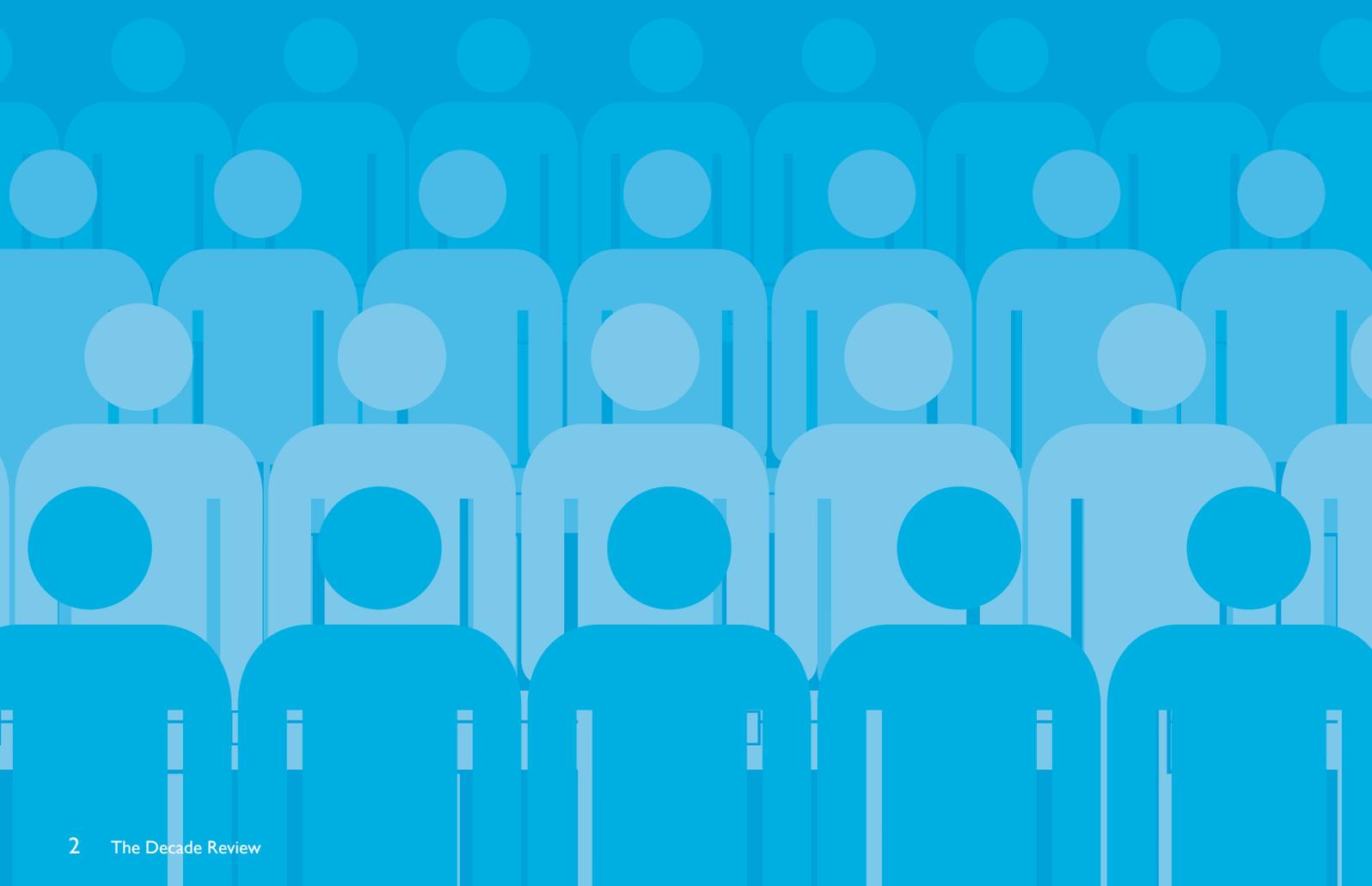
2.0 EXECUTIVE SUMMARY

3.0 FINDINGS

3.1	The gas industry	11
3.2	Safety	15
3.3	Challenges	17
3.4	Training, skills and competence	19
3.5	The registration body	22
3.6	Leadership and influencers	27
3.7	The future	29

APPENDIX

I.0 Introduction



I.1 An introduction from Gas Safe Register



Jonathan Samuel
CEO, Gas Safe Register

The UK's gas industry is among the world's most regulated and comprises many stakeholders. Gas Safe Register* plays an integral role.

As the official register of gas engineers who are competent to work safely and legally on boilers, cookers, fires and all other gas appliances, our role is also to promote and improve gas safety for both consumers and gas engineers.

For consumers, we're improving safety through raising awareness of domestic gas safety risks and helping to ensure they only use legal and competent gas engineers. Our national investigations team protects the public from unsafe work through tracking down illegal gas workers and investigating reports of unsafe gas work, as well as through regular inspections of Gas Safe registered engineers.

From putting Gas Safety Week on the nation's calendar to plotlines in popular TV 'soaps' and teaching students – a new generation of householders – about gas safety, our education campaigns have made the UK's 21.5 million gas-powered homes significantly safer.

For engineers, the Register focuses exclusively on safety and promoting their competence. We strive to offer increasing value, through lowering registration fees; lean, efficient management; innovative digital tools; and highly regarded communication channels, including *Registered Gas Engineer* magazine.

But Gas Safe Register does not presume to speak for the gas industry. It is a licensing body: not a membership association, nor a trade body.

Gas Safe Register commissioned the Decade Review to give a voice to the entire industry, from the many sole traders to the training bodies and manufacturers to the big energy companies. It gave each specialist sector in the industry the opportunity to reflect on their experience and share their often strongly held views and perspectives. To ensure impartiality, we instructed award-winning research firm Accent to conduct the review independently.

The Decade Review comes ten years after the Health & Safety Executive's Frontline Review – a report that made a strong case for improvements in the industry and a new registration model, which became Gas Safe Register in April 2009. It's important to note that the Decade Review is not a report on Gas Safe Register, although the Register is naturally a key part of it.

The UK's gas industry has seen many changes over the past decade: more registered engineers, tougher penalties for health and safety offences, new technologies and innovation are all helping to keep the public safe and warm. But what does the industry believe it needs and wants now? Read on to find out.

A handwritten signature in black ink, appearing to read 'Jonathan Samuel', with a stylized flourish at the end.

Jonathan Samuel

*Gas Safe Register is run by Capita Gas Registration and Ancillary Services Limited, a division of Capita plc.

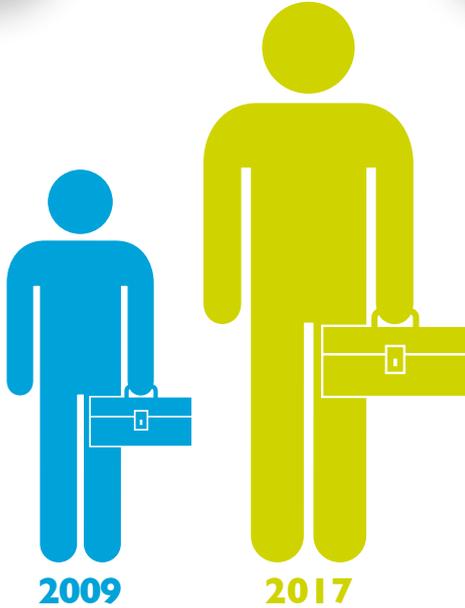
Number of registered businesses

54,000

Businesses in 2009

74,000

Businesses in 2017



37%

more engineers than 2009

99.6%

Men

0.4%

Women

* Gas Safe Register took over the registration scheme in April 2009

What gas engineers do

84%

work on domestic heating and hot water systems
(108,203)



20%

work in commercial
(25,588)

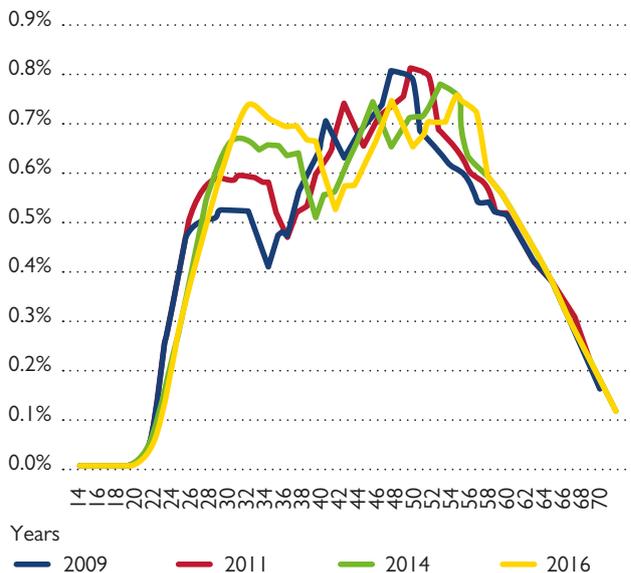


27%

work with LPG
(34,063)



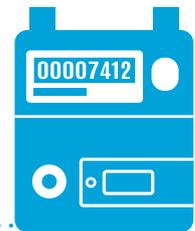
The age profile of registered engineers



The median age for engineers is 55, with the average around 46. Engineers start to retire or leave the Register aged 55, with peaks at 50 and 65.

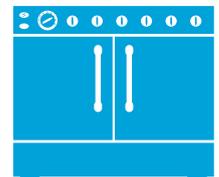
26%

can work on meters
(33,963)



5%

are competent in commercial catering
(7,012)



* Figures correct at November 2017

1.2 Methodology in brief

How the Decade Review was conducted

The Decade Review consultation was carried out by independent market research consultancy Accent. During the autumn of 2016, invitations to the industry to participate in the review were publicised by Gas Safe Register in the trade press and events, and in relevant gas industry publications.

Input to the consultation took a number of forms:

Focus groups

- Two focus groups with registered gas engineers representing a range of experience and company size.
- Two focus groups with consumers: one for 40-60-year-olds and another for 18-39-year-olds.
- Stakeholder focus groups at two industry events.

Digital channels

- An online survey sent to 71,870 Gas Safe Register contacts, with 2,690 responses received by engineers (a 4 per cent response rate). An analysis of the responses shows that they were broadly representative of the Gas Safe Register database in terms of region, age and company size (see Appendix for more detail).

- The survey was also available through a publicly available **web link** (124 responses) and a dedicated Decade Review **email address**, which three individuals used to submit further comments.

Interviews

- A range of stakeholders representing different aspects of the gas industry were identified and interviewed in-depth. Thirty-three **telephone interviews** lasting between 30 minutes and one hour were conducted with individuals from training and certification bodies, charities, trade associations, standards organisations, safety and quality standards membership organisations, energy supply and distribution companies, manufacturers, construction and housing, and trade press.

If you have questions about the focus groups, the methodology and the interview topic guides, please email stakeholders@gassaferegister.co.uk

About Accent

Established in 1988, Accent is an award-winning market research consultancy that delivers independent and targeted insights into customers' and stakeholders' views. Working across the full range of regulated industries, Accent's experienced researchers use quantitative and qualitative methods to produce powerful and robust research. Accent is registered to the market, opinion and social research International Standard ISO 20252:2012.

I.3 Objectives

The objective of this study was to conduct a wide-ranging consultation among people and stakeholders¹ with an interest in the gas and gas safety industry. It aims to provide an accurate and independent record of their views of their own industry, their perceptions of how it has changed during the past decade, and what they believe its future will be.

The intention is that this research will assist a range of audiences and organisations in better understanding where there is consensus, strongly held beliefs and divergent opinions within the industry as a whole. It is also designed to assist with planning future strategy and continuous improvement initiatives.

The Decade Review covers the following topics:

The industry

- The current state of the gas and gas safety industry.
- How has the industry changed in the past ten years?

Engineers

- What do engineers expect and need from the Register?
- Have engineer attitudes, behaviour and motivation changed in the past decade?

Training, skills and competence

- What are engineers' views on the current training and re-assessment regime?

The future

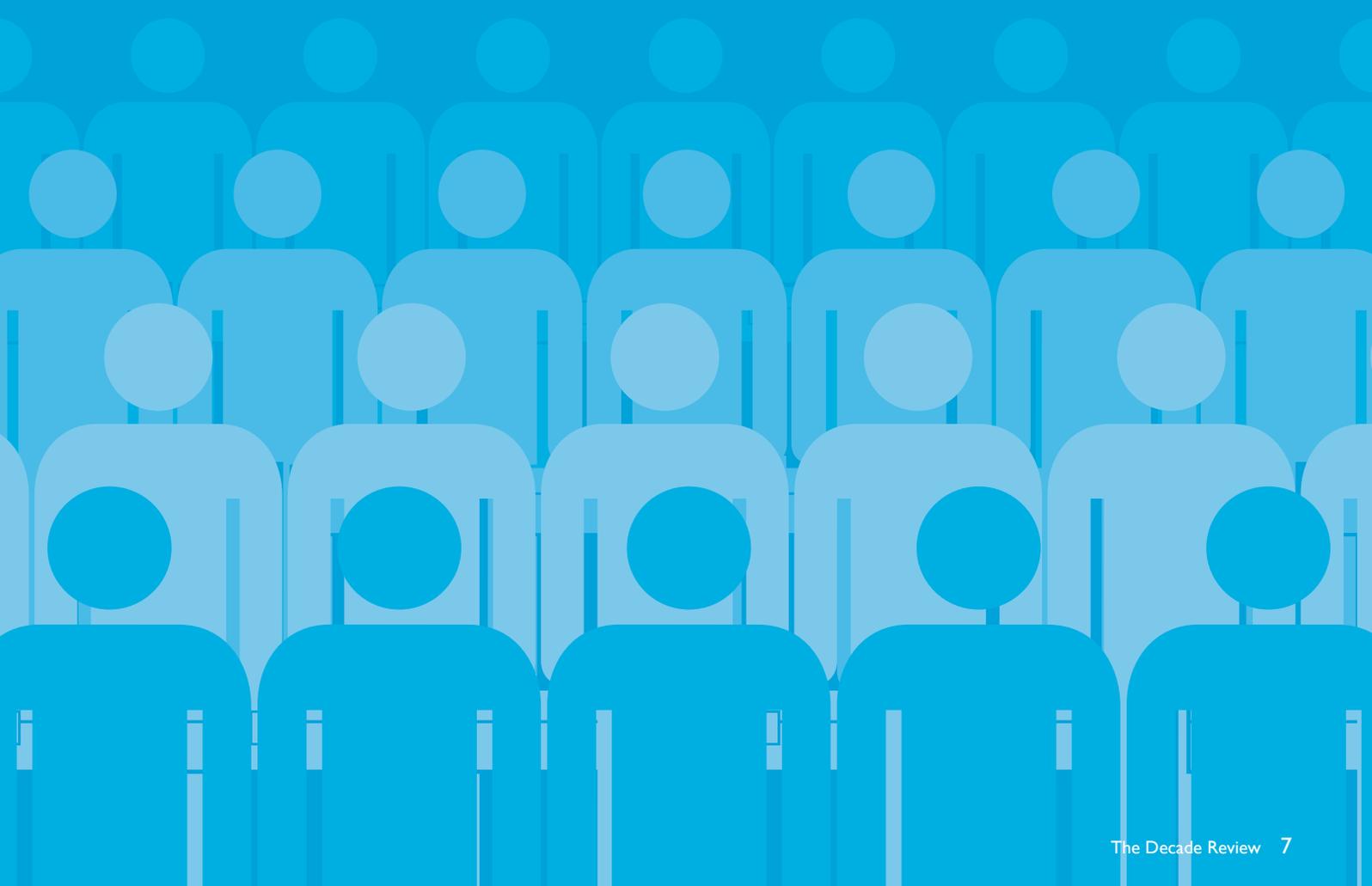
- What might the industry look like in years to come?
- What are future issues that the industry might face, such as ageing installations, new fuels, government intervention and new technologies and appliances?

This report includes the findings from all elements of the Decade Review consultation. Quotes and opinions are attributed to the specific participant's role in the gas industry.

¹ 'Stakeholders' refers to individuals representing training and certification bodies, charities, trade associations, safety and quality standards membership organisations, standards bodies, energy supply and distribution companies, manufacturers, construction and housing companies, and trade press. It encompasses the gas industry excluding registered gas engineers, whose views are reported separately.

2.0 Executive summary: A decade of change

The past decade has seen improvements in safety, significant advances in technology, and Gas Safe Register become the registration body for gas engineers. But there are challenges ahead, as well as concerns that the industry is becoming fragmented and that training standards are falling.



2.0 Executive summary

Safety

Most Decade Review participants believe the gas industry is safer than ever. This is because of increased gas safety awareness, greater use of CO alarms, better-quality appliances, more focus on engineer training and assessment, and better enforced regulation. But there are concerns that training and installation standards are falling, which could have a negative impact on safety.

The marketplace

For those who believe the industry is less safe, they say it's caused primarily by customers trying to save money by getting their gas work done on the cheap. Engineers say increased competition is putting downward pressure on prices (their wages). This may be linked closely to gas engineers' other primary concern: illegal gas fitters.

Stakeholders, including manufacturers, building contractors, training organisations and energy supply companies, are also finding competition within the industry challenging, along with pressure from increasingly demanding customers.

Training, skills and competence

Training and competence continue to be divisive topics, with widespread perception that training standards are falling. The role of the Nationally Accredited Certification Scheme (ACS) as a fast-track way to enter the industry as a gas engineer (its intended role is a method for engineers to prove their continued competence through five-yearly assessments) is concerning to both engineers and other industry organisations.

Larger companies say they have difficulty recruiting competent and experienced engineers and often need to provide further training. For smaller businesses, the cost of training combined with lost income from the days spent on training and assessment is problematic. Training bodies themselves say that the training and assessment they provide is thorough, although they acknowledge that some less-than-adequate training pathways and/or providers are producing less-competent engineers.

Registration

Gas engineers must be registered with Gas Safe Register to work legally on gas in the UK. Gas Safe Register is felt to be doing a good job, and engineers give many reasons for this, including its increased focus on combating illegal gas work, improved policing, and better communications and provision of safety and technical information. Industry stakeholders² are also very happy with the quality of Gas Safe Register's employees.

Criticisms of Gas Safe Register are focused primarily on its risk-based inspection process. There is a desire among engineers for more personal contact with the Register, such as through an 'area manager' or more inspections.

Gas Safe Register has frozen the cost of registration for the past eight years. However, engineers need to be registered individually, and larger organisations that train and monitor their own engineers feel they contribute the most financially to the Register but have the least to gain from it.

Businesses of all sizes express some frustration that they are subsidising less competent and even illegal installers, because registration fees help to fund Gas Safe Register's investigations and inspections. However, they also acknowledge that Gas Safe Register must focus on this area, because its primary function is to protect the public from unsafe gas work.

There is interest from around one-quarter of registered gas engineers in broadening the remit of the registration body to include responsibility for training and competence. Restricting the sale of gas appliances to registered engineers dominates engineers' responses to areas where they'd like Gas Safe Register to become involved. It's important to note that each of these areas is outside the control of both Gas Safe Register and the Health & Safety Executive (HSE).

Industry leadership

Many Decade Review participants feel that the gas industry has improved over the past decade, yet they also believe it has become fragmented.

A prevailing theme is the perceived lack of industry leadership stemming from a sector that is made up of a large number of different organisations with similar roles and overlapping objectives. There is a strong desire for better leadership and clarity on who does what. The industry also has a high proportion of sole traders who do not feel represented.

Engineers see Gas Safe Register and manufacturers as having the most influence in the gas industry, and would like to see Gas Safe Register take a leadership role on their behalf. Stakeholders are also likely to mention HSE even if they have limited contact with the organisation.

The future

The gas safety industry is considered to be robust but faces challenges about the standard of engineer competence and training. With an ageing engineer workforce combined with the emergence of short courses for those looking to start working as a gas engineer quickly, many are worried about the future impact on safety and quality standards.

Engineers and stakeholders say the single most important thing the industry must do to meet their future needs is improve training and re-assessment. This includes raising standards, attracting a new generation of engineers, and helping engineers learn and adapt to new fuels and technologies. Engineer training and competence will continue to be a high priority.

Some believe that natural gas in its current form will become less prevalent as new and combined fuels, such as hydrogen, renewable, and synthetic gas alternatives come to the fore. Many stakeholders think the government needs to take the lead on energy policy, but only a minority think that leaving the European Union (Brexit) or other political changes are likely to cause the industry any issues in the next decade.

² 'Stakeholders' refers to individuals representing training and certification bodies, charities, trade associations, safety and quality standards membership organisations, standards bodies, energy supply and distribution companies, manufacturers, construction and housing companies, and trade press. It encompasses the gas industry excluding registered gas engineers, whose views are reported separately.

3.0 Findings

Technological advances are the most significant change to the gas industry over the past decade, according to the majority of Gas Safe registered engineers. When asked to consider the biggest changes in the gas industry during the past ten years (or since they became registered), 70 per cent of participants mentioned technology.

3.1 The gas industry

How the industry has changed

Safer appliances, Gas Safe Register replacing CORGI in 2009, and increased legislation³ were mentioned by around six in ten participants. These changes were more likely to be mentioned the older the participant and the longer they had been registered.

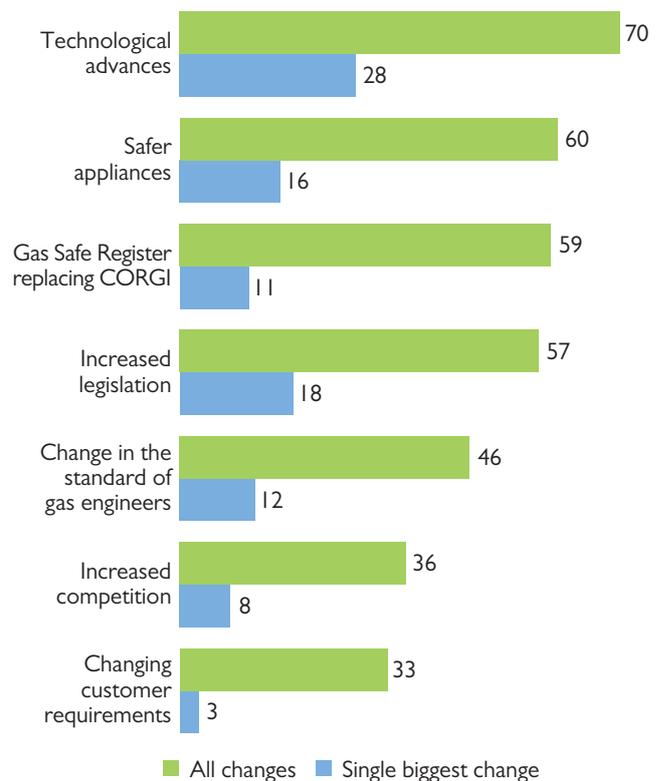
Gas Safe Register becoming the registration body was significantly more likely to be seen as a big change by those who rated Gas Safe Register highly. It was mentioned by 65 per cent of those who say Gas Safe Register performs very well.

A change in the standard of gas engineers was noted as an issue, in particular, by those with more than 20 years' registration (55 per cent of whom mentioned it). It is also a concern for larger companies with more than six employees, where engineer standards are likely to have more of an impact than for sole traders, who make up the majority of the workforce.

Participants had widespread views when asked to choose the single biggest change. Technological advances was the most frequently mentioned – selected by 28 per cent of participants – followed by increased legislation and safer appliances.

Increased competition was most likely to be mentioned by those with less than five years' Gas Safe registration; 17 per cent of those engineers see it as the biggest change.

Figure 1: Biggest changes in the gas industry over ten years (% participants)



Base: All participants (2,814)

3.1 The gas industry continued

Engineers in focus groups discussed the specific technological changes that had affected their work and the gas industry, such as the ability to operate a boiler remotely. The number of boiler manufacturers and frequent upgrades to technology also mean engineers sometimes find it difficult to keep up to speed with the latest technology.

Combustion testing⁴, which was mandated by boiler manufacturers in 2014 when commissioning condensing boilers, is generally regarded as useful, although engineers did comment on the equipment needed to perform the analysis being “an expensive piece of kit”. Some also thought the industry was becoming over-regulated, with more box-ticking than a focus on real quality.

Consumers just want heat and hot water and aren't generally too interested in how it's delivered. During focus groups, consumers mainly discussed more general changes related to technology and the internet during the past decade. With specific regard to the gas industry, the first things that came to mind were British Gas, which they see as the original gas supplier, and smart thermostats such as Hive.

In line with views shared by surveyed Gas Safe registered engineers, stakeholders⁵ mentioned a number of key issues when asked how the gas industry had changed, during in-depth interviews. The transfer of the registration body to Gas Safe Register in 2009, improvements in safety, the quality of training and competence, and technological advances all featured highly.

Some stakeholders observed that Gas Safe Register has increased awareness of gas safety issues, such as carbon monoxide (CO) poisoning. Five stakeholders raised concerns about the number of inspections that Gas Safe Register carries out, as it focuses more work on high-risk engineers. However, a similar number reported positive views of this approach.

Training and competence

The Nationally Accredited Certification Scheme for Gas Fitting Operatives (ACS) is the industry recognised and accepted route for gas engineers to gain a certificate of competence every five years to maintain registration with Gas Safe Register. ACS is designed for existing qualified/experienced/competent gas engineers but in recent years has been used as a pathway into the industry, due largely to a lack of definition of what qualifies ‘experience’ to access ACS.

This has led to the training and competence of gas engineers being questioned, with some concern about the duration and rigour of training courses. This was particularly felt with the emergence of fast-track courses which may produce inadequately skilled engineers, in contrast to the more traditional routes into the industry through apprenticeships and nationally recognised college qualifications. Unsurprisingly, the training bodies believe that the industry has changed for the better, with properly-trained engineers having a high skill set.

However, the training bodies shared other participants' concerns that some people could train and qualify far faster than they used to. Participants representing training bodies tended to hold the opinion that safety has increased, partly because consumers are more aware that gas engineers require specialist skills and because of the engineers who undertake proper training.

“I think there's a greater awareness now of the skills that are available in the market so there's less unsafe situations being left by the more unscrupulous engineers and I think those that are cutting corners or even working illegally are more aware of the chances of being caught out.” **Training body**

The view among training bodies that training has improved is not shared by everyone: some feel the standard of training has declined. They also shared concerns about

declining quality of work.

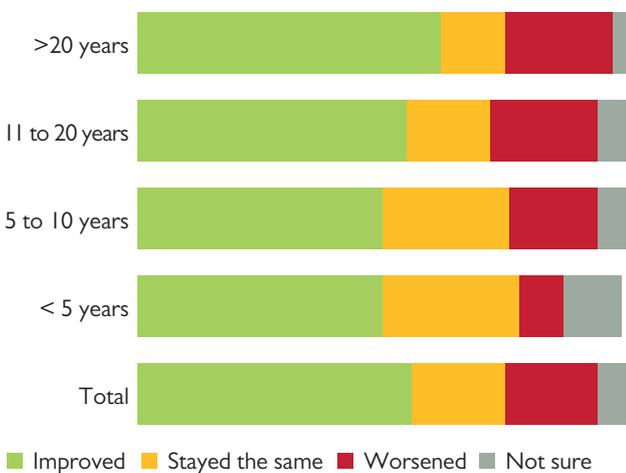
One manufacturer, however, felt that gas engineers are much more 'diligent' about keeping up with training than they used to be.

"[Gas engineers'] behaviour has changed immensely over the last 10 to 15 years. Training was a necessary evil 15 years ago, now... they're allocating five days a year... to brush up on their abilities, be that the legal requirement of doing ACS, or just product awareness training. I think they behave in a very honourable way; you don't see that with any other building service industry; you don't see electricians coming back on such a frequent basis to up their knowledge levels."

Manufacturer

Gas engineers with more than 20 years' experience strongly feel that the UK's gas industry has improved over the past decade. Across the board, more than half the Decade Review participants believe the gas industry has improved, with the rest split between 'stayed the same', 'worsened' or 'unsure'. Naturally, engineers who have only registered in recent years are more likely to be unsure about whether the industry has improved than other groups, although half still see an improvement.

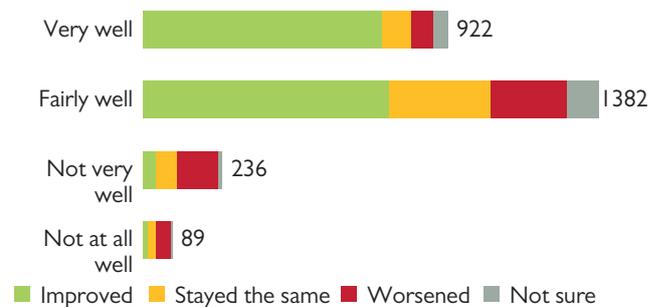
Figure 2: Whether the gas industry has improved, worsened or stayed the same (% participants)



Base: All participants including non-engineers (2,814); registered <5 years (386), registered 5-10 years (494), registered 11-20 years (792), registered >20 years (988)

There is a strong correlation between believing that Gas Safe Register is doing a good job and feeling that the gas industry has improved. Eight in ten of those who feel that Gas Safe Register is performing very well say they have seen improvements in the gas industry.

Figure 3: Change in the gas industry by how well Gas Safe Register is performing



Base: All participants (2,814) including those who 'don't know' how well GSR is performing; all who said 'Not at all well' (89), 'Not very well' (236), 'Fairly well' (1382), 'Very well' (922)

Safety in focus

Safety is an essential area of focus for the UK's gas industry. There are inherent dangers not just from working with an explosive fuel, but also from unsafe gas appliances which can produce highly poisonous carbon monoxide (CO)⁶.

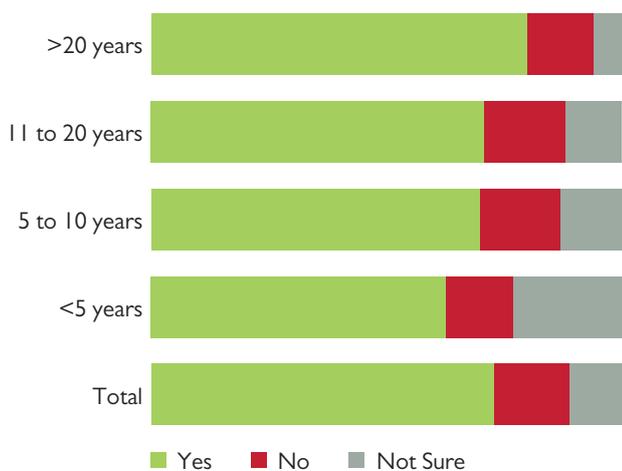
The overwhelming majority of gas engineers feel that the industry has become safer since they have been working in it; an average of 72 per cent across all ages have seen an improvement compared with 56 per cent who think the gas industry has improved more generally.

Once again, there is a strong correlation between engineers' positive views of Gas Safe Register's performance and a belief that gas safety has improved. Almost all (91 per cent) of those who say Gas Safe Register is performing very well also think that there has been an improvement in gas safety.

3.0 FINDINGS

3.1 The gas industry continued

Figure 4: Whether the gas safety industry has improved in the past ten years (by length of registration) (% participants)



Base: All participants including non-engineers (2,814); registered <5 years (386), registered 5-10 years (494), registered 11-20 years (792), registered >20 years (988)

The overall view among all stakeholders is that gas safety has improved over the past decade. This improvement was attributed to a range of factors, including safer appliances, Gas Safe Register taking over as the registration body, and greater awareness among consumers, particularly about the dangers of CO – heightened by the inclusion of carbon monoxide storylines in popular TV soaps *EastEnders* and *Coronation Street*. They also credit the move away from open-flue appliances for reducing fatalities.

One stakeholder representing a trade publication felt that there is also now a greater awareness among gas engineers

about the need to show their Gas Safe Register ID card and that this will have a knock-on effect on consumer awareness.

However, some respondents said they believe many consumers choose their engineer based on recommendation rather than check with Gas Safe Register. There was also a feeling that consumers may be confused about what an engineer is competent⁷ to do.

While awareness of the registration body itself was generally perceived to have improved over the past decade, acknowledging Gas Safe Register’s communication and marketing efforts, some discussed a need to continue raising awareness of the Gas Safe Register brand with householders, along with the need to have their gas appliances maintained and serviced annually.

Most training bodies feel that gas safety has improved because engineers are assessed regularly⁸. They also cite the safety awareness campaigns run by Gas Safe Register. There were differing views as to whether gas safety will continue to improve or has reached a peak. Training organisations also raised concerns about the variation in quality of engineers’ training.

On the downside, those stakeholders who believe that gas safety hasn’t improved over the past decade raised concerns about poor installation, deterioration in training standards, and an increase in illegal installers.

“I’m having to disconnect a lot more stuff than I used to... I don’t know the reason why, but people just don’t seem to be reading manufacturers’ instructions.” Trade association

Another trade association felt that the inspection approach has changed to become focused on inspecting work instead of spending time with the engineer, and with falling education and training standards, this could impact on safety.

3 The primary legislation governing the gas industry is the Gas Safety (Installation and Use) Regulations (GSIUR), which has remained unchanged since 1998. For the purposes of this review, the words ‘legislation’ or ‘regulation’ are used as engineers refer to them, which includes direction such as changes to Standards, Building Regulations, Benchmark, manufacturer’s instructions, Energy-related Products Directive (ErP) etc.

4 Combustion testing is an analysis of combustion exhaust gases to ensure an appliance is burning gas safely.

5 ‘Stakeholders’ refers to individuals representing training and certification bodies, charities, trade associations,

safety and quality standards membership organisations, standards bodies, energy supply and distribution companies, manufacturers, construction and housing companies, and trade press. It encompasses the gas industry excluding registered gas engineers, whose views are reported separately.

6 Carbon monoxide (CO) is a colourless, odourless, tasteless, poisonous gas produced by incomplete burning of carbon-based fuels. When CO enters the body, it prevents the blood from bringing oxygen to cells, tissues, and organs and can cause death as well as serious long-term health problems such as paralysis and brain damage. According to HSE statistics, the five-year average (2015/2016) is that around 6 people die every

year from CO poisoning caused by gas appliances and flues that have not been properly installed, used, maintained or that are poorly ventilated.

7 Gas engineers must be qualified and certified as competent in the area of work they wish to undertake. For instance, some engineers are only qualified to work on some domestic gas appliances; others undertake work on LPG, commercial or catering installations.

8 Gas engineers must prove their continued competence in the areas they work every five years through the Nationally Accredited Certification Scheme (ACS) or Group Competence Scheme (GCS) to continue registration with Gas Safe Register.

3.2 Safety

In this section, the reasons why gas safety is thought to have improved and the challenges to that high level of safety are explained in more detail.

How the gas industry became safer

The biggest changes in the past ten years are also the main reasons why gas safety is seen to have improved: technological advances leading to better-quality appliances and stronger gas safety legislation⁹. In fact, the only primary legislation concerning the gas industry that has changed during the previous decade is the requirement for a CO alarm to be present in homes where a combustion appliance is fitted. This was a change to Building Standards in Scotland, and Building Regulations in England and Wales – where it is only a requirement for rented properties with a solid-fuel-burning appliance. The primary legislation governing the gas industry, the Gas Safety (Installation and Use) Regulations (GSIUR), has not changed since 1998.

Greater public awareness of gas safety, evidenced through the increase in the use of CO alarms, is also credited with improving gas safety, more generally.

Figure 5: Main reasons for gas safety improvement (% participants)



Base: Participants who feel gas safety has improved (2,024)

Gas engineers in focus groups mentioned increased regulation as being linked to increased customer awareness. However, there is a concern that loopholes still exist, which makes it possible for engineers with inadequate skills to ‘get away with it’.

While six in ten engineers believe gas safety has improved and there is better consumer awareness of gas safety, consumers interviewed in focus groups weren’t certain who was responsible for gas safety. A few spontaneously mentioned Gas Safe Register, and there was a desire for more promotion of Gas Safe Register’s role and remit.

“The word ‘register’ for me is a bit misleading as well because it just makes it literally sound like it is a register of qualified gas engineers. So what it doesn’t do is it doesn’t qualify the bit about educating the public, keeping the public safe.”

Consumer

While many stakeholders think gas safety has increased over the past decade, they also feel that awareness of gas safety could be higher to build on the improvements already made.

Safer appliances were mentioned as improving gas safety, with more ‘idiot-proof’ products available and the disappearance of open-flued appliances from homes as they are replaced with condensing boilers.

“The carbon monoxide incidents we’re now experiencing from gas appliances – fatalities, at least – are dramatically down to where we were prior to condensing boilers being introduced... So the safety side of the industry is definitely in a better shape than it was ten years ago.” **Manufacturer**

3.0 FINDINGS

3.2 Safety continued

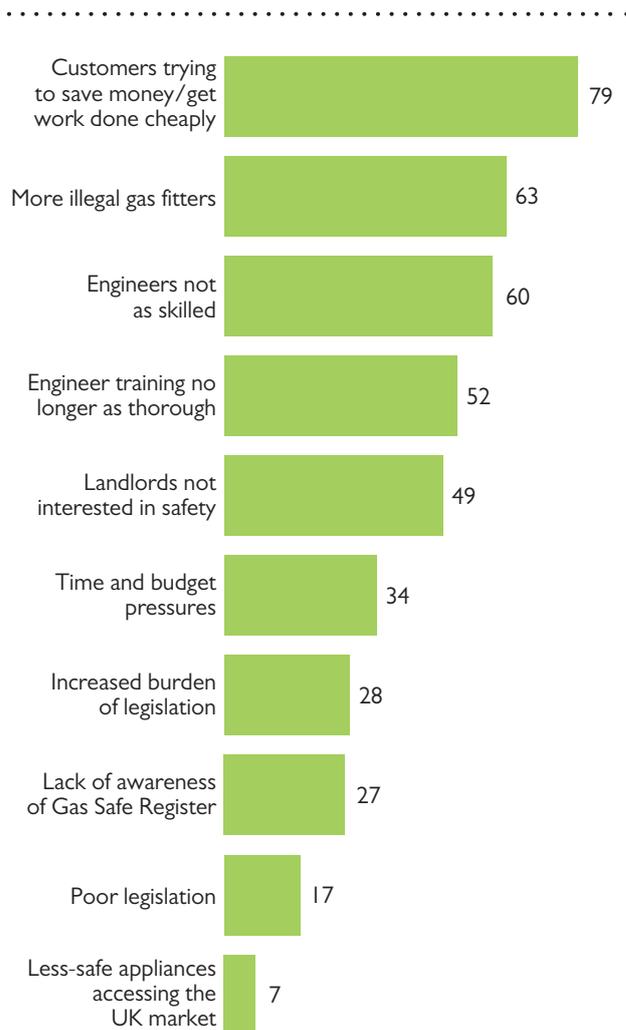
Some manufacturers mentioned that gas engineers are encouraged to check that their customers have CO alarms when they service their gas appliances – and they are finding that consumers increasingly do have these alarms. However, there are also concerns about whether all CO alarms are of the same high-quality standard, with one manufacturer commenting that cheap imports don't meet the British Standard BS 50291 and may give customers a false sense of protection.

Safety challenges

For the 20 per cent of respondents who believe gas safety has worsened, eight times out of ten they say it's because customers are getting gas work done on the cheap. Illegal gas fitters – people who work on gas who are not Gas Safe registered – and under-skilled engineers were given as key reasons by those who thought gas safety had worsened. Illegal gas fitters are believed to be cheaper, so consumers need to be aware of the risks they are taking to save money. A few training bodies mentioned that some training is less thorough, although not all think this is the case, and others cited under-skilled gas engineers.

A stakeholder who perceived gas safety to have declined over the past decade felt that this was attributable to a mix of illegal gas fitters and poor workmanship because of inadequate training. Another blamed a number of unsafe products, such as imported gas appliances that are starting to appear on the market.

Figure 6: Main reasons for gas safety worsening (% participants)



Base: Participants who believe safety has worsened (443)

⁹ The primary legislation governing the gas industry is the Gas Safety (Installation and Use) Regulations (GSIUR), which has remained unchanged since 1998. For the purposes of this review, the words 'legislation' or 'regulation' are used as engineers refer to them, which includes direction such as changes to Standards, Building Regulations, Benchmark, manufacturer's instructions, Energy-related Products Directive (ErP) etc.

3.3 Challenges

The Decade Review has highlighted a variety of challenges facing the gas industry, from illegal gas fitters to more competition, to keeping up with competence requirements and demanding customers. While most of these views of the challenges are shared, their importance varies dramatically, depending how long an engineer has been registered.

Under pressure

Engineers rate their two biggest challenges almost equally – pressure to do work more cheaply, and illegal gas fitters. It’s not surprising that these issues are of almost equal concern, as the issues are clearly linked: engineers say that illegal gas fitters are forcing prices down. These issues are also engineers’ biggest safety concerns.

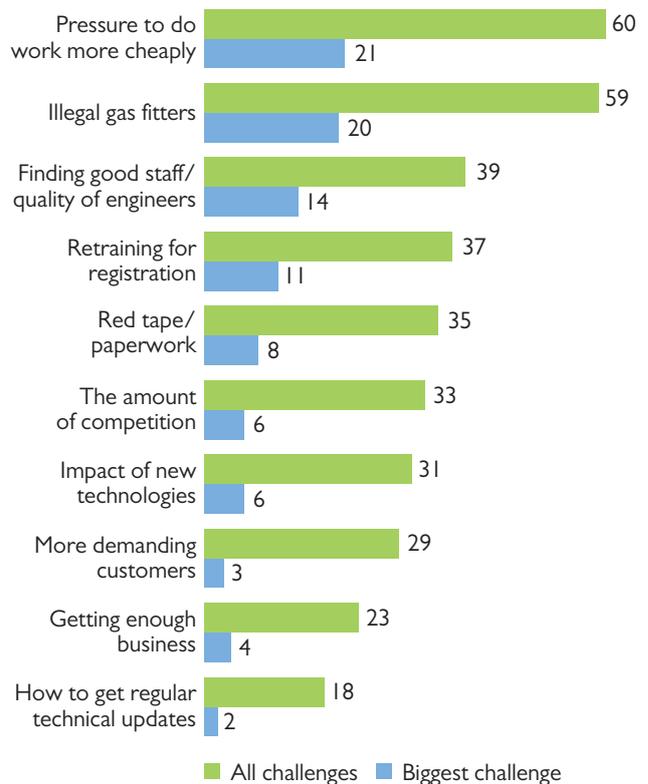
While engineers of all ages see illegal gas fitters as a problem, pressure to do work on the cheap is particularly likely to be a challenge for younger engineers, two-thirds of whom mention it.

Conversely, maintaining competence to continue registration (ACS) is more of an issue for older gas engineers: 23 per cent of participants aged under 45 mention this compared with almost twice as many older participants (42 per cent).

Other challenges significantly more likely to be mentioned by those aged over 45 are red tape and paperwork, and the impact of new technologies. Very experienced engineers (aged over 55) are much less concerned about competition than younger generations.

Finding good-quality engineer employees is more of an issue for larger companies: 71 per cent of those with more than six employees and 75 per cent of those with more than 20 employees see this as a challenge.

Figure 7: Challenges facing the gas industry (% participants)



Base: All participants (2,814)

Industry stakeholders’¹⁰ main challenges fall broadly into the categories of training, competition and customers.

Training bodies note reluctance among people looking to retrain or enter the gas industry to undertake long courses or apprenticeships; they want to start earning as quickly as possible. This naturally leads to significant variance in the quality of training.

3.3 Challenges continued

“I think our biggest challenge is always to demonstrate to the prospective candidate that we’re doing things right – and there are right ways and there are wrong ways [to train on gas].” **Training body**

Larger employers say fast-track training is making it difficult to find suitable qualified engineers, and that the standard and core gas knowledge of engineers who have finished training recently is declining.

“We’re a large business so... we take on apprentices and train them up and do their gas qualifications, but a lot of engineers come to us and they have a nine-month course and passed it... and there’s no experience.”

Housing association

The issue of illegal gas work is raised less by stakeholders than gas engineers: some feel the problem isn’t increasing; others feel the issue is exaggerated.

While it’s believed that customers’ appreciation of gas safety has generally increased, there are perceived gaps in this knowledge. One issue, noted by energy suppliers, is a tendency for people to only have their boilers looked at by a gas engineer when there is a problem, instead of annual servicing or service contracts.

Customer expectations are also changing – raised by the slick on-demand delivery that defines other service sectors. A focus on immediacy means some customers are employing the first available engineer, or buying a gas appliance with the quickest delivery, rather than prioritising quality.

Competition

Trade associations and retail organisations say there’s more competition in the market, with new entrants offering to work at lower prices, undercutting more experienced engineers.

Economies are being achieved by gas jobs done quickly, using fewer and less-well-qualified people. The internet has also made pricing more transparent, and manufacturers talk of companies selling an installed boiler without surveying the property first.

“It seems to be we’re having a bit of a race to the bottom at the minute.” **Trade association**

One stakeholder in the retail sector talked of the pressure he was under to cut his training budget and get engineers trained cheaper and quicker.

¹⁰ Stakeholders’ refers to individuals representing training and certification bodies, charities, trade associations, safety and quality standards membership organisations, standards bodies, energy supply and distribution companies, manufacturers, construction and housing companies, and trade press. It encompasses the gas industry excluding registered gas engineers, whose views are reported separately.

3.4 Training, skills and competence

Training, skills and competence continue to be divisive topics, and there is a perception that standards are falling. In this section, engineers and organisations within the gas sector explain why they feel qualifications and competence are diverging.

Skills that are up to the job

Training is less rigorous and engineers aren't as skilled as they used to be, say engineers who feel that standards are declining. It's an opinion shared by stakeholders including larger employers, energy suppliers, housing associations and manufacturers. These organisations say they are having difficulty recruiting competent and experienced engineers, and need to provide further training to bring new recruits up to their standards.

"We have to spend a little bit more time training than we've ever done... That's a big challenge to us because obviously it means you employ somebody and for many months, he's not really over-productive." **Manufacturer**

"I think we have moved away from training courses that train someone to be a gas engineer in their entirety... to a training course that trains somebody to pass an assessment."

Energy supplier

There is also a concern that ACS is now used as a way to enter the industry – a deviation from its intended role.

"ACS was only ever designed to be a check on the competency of already qualified, registered and competent engineers."

Facilities management

Stakeholders¹¹ are also concerned that less-safe gas work is being done because they're finding recently trained engineers have lower levels of core gas knowledge than in the past.

This view is supported by manufacturers, who report problems with boiler installation. They say that when they are called out to repair boilers under warranty, 40 per cent of the time the problem is with the installation.

However, the view of training bodies is that the training and assessment they offer is thorough and, on the whole, they believe that standards are improving. That said, they all recognise there are less-well-trained engineers who are registered and working: some because of inadequate training; others because they don't seem to care about quality.

Training bodies believe that some less scrupulous, less thorough training companies continue to operate by providing faster, cheaper qualifications. Some training bodies also blamed certification bodies (the organisations that offer qualifications delivered through approved training centres) for declining standards.

"I think when it comes down to education and training, there's a sizeable issue with the actual certification bodies (who operate the qualifications) having an overbearing influence on what happens out there in the marketplace. They seem to be pandering to commercial interest." **Trade association**

Other stakeholders direct their criticism at the delivery of training and assessment.

"You could be a milkman today and a gas installer in four weeks' time if you're prepared to pay a lot of money... that, for me, has been the single biggest devaluation of the gas industry because ... people are being churned out at the moment that are not competent." **Retailer**

3.4 Training, skills and competence continued

“The industry is left with under-trained workers fumbling about with people’s lives trying to find a way to make money but not quite sure how you actually install a boiler or gas pipe. These people should not be allowed to work alone ... I come across it every day; these six-week wonders are guessing how to install gas appliances. I challenged one recently... and he shouted back at me: ‘Don’t have a go at me, I was stacking bananas at Asda six weeks ago.’” **Gas engineer**

Research carried out for the Gas Industry Safety Group in 2016¹² focused specifically on newly qualified engineers. Results from that study highlight the training challenges faced by new gas engineers, most of whom believe they are competent and their training to be good.

However, experienced engineers in focus groups repeatedly raised concerns that current training requirements for Gas Safe registration are insufficient. Engineers say trainees simply don’t have sufficient opportunities to learn from experienced engineers.

A further concern was a perceived lack of consistency in the colleges and testing centres offering gas assessments, with some believed to be more stringent than others.

One route to registration that is generally viewed positively is the government’s Trailblazer apprenticeship scheme, in which groups of employers have joined together to design apprenticeships that develop the skills needed for their future workforce. However, this is very new to the gas industry, with only one programme developed by October 2017 designed for smart metering, but there are others in development.

Maintaining standards

Qualified gas engineers are required to prove their competence in their areas of work through ACS assessment every five years to continue their registration with Gas Safe Register. For some engineers, the cost of training is an issue, compounded by income lost while attending courses.

The more recent Group Competence Scheme, established by EU Skills in 2014 as an alternative to ACS for companies that could use existing quality management processes to prove an employee’s competence, was felt by one trade association to have its own issues.

“[The] Group Competence Scheme, where the employer can look after the competence of the individuals, and then the way they do that is assessed. But what that again means, it’s another step away from scrutiny.” **Trade association**

Many manufacturers offer free training on their products, and while a large proportion of engineers undertake this, the issue of lost income and travel costs arises again.

With an ageing workforce, gas training will continue to be a priority for many years to come. There is recognition that the workforce needs to be replenished as more experienced engineers leave or retire – which can be at an earlier age than in other industries because of the physical nature of gas work.

However, Gas Safe Register’s database tells a different story: there are more engineers joining the Register than leaving. However, it does support the belief that the industry is weighted towards older, more experienced engineers, with the median engineer age now 55 – the same age at which some engineers begin to leave the Register (this peaks at 60 and 65).

'Gas Safe' training

Some training bodies feel there could be benefits from more visibility of Gas Safe Register during the training process – and even endorsement of the learning pathway. They feel Gas Safe Register has a higher profile than the industry's sector skills council EU Skills or the Institution of Gas Engineers and Managers (IGEM), and Gas Safe Register-endorsed training programmes would be demanded by engineers, and subsequently provided by training bodies.

"Gas Safe has a remarkably large role to play in that purely because theirs is the recognised badge... I think if Gas Safe were more visible throughout the learner's journey, they would know 'If Gas Safe say it's okay then it must be okay'. So it's kind of having that stamp of approval from somebody that the public recognise and know because nobody knows who... EU Skills or IGEM are outside of the industry." **Training body**

Larger companies with more than 20 employees feel it would be valuable for Gas Safe Register to be involved in providing certification or setting training standards (41 per cent).

There was also a suggestion that when Gas Safe Register identifies recently qualified engineers who aren't working competently, this should be followed up with the engineer's training provider.

Another suggestion is that Gas Safe Register should create a way to share information about poorly performing engineers. For example, if a large employer identifies and dismisses a poorly performing engineer, there is nothing to stop them working elsewhere. In order to track and monitor poorly performing engineers, a 'points' system, similar to a driving licence, was proposed by one Decade Review participant, with the possibility of an engineer losing their licence to work – their registration – if they accumulate too many points.

Rules and regulation

Gas engineers said during focus groups that they felt there are far too many standards to keep abreast of – a consequence of working in a safety-critical industry. However, there also seems to be some confusion among engineers as to what constitutes regulation as opposed to technical and/or safety advice and manufacturer safety alerts. Engineers are updated on new and revised standards, and technical information on Gas Safe Register's website, as well as in Gas Safe Register's magazine *Registered Gas Engineer*. One engineer commented that there might be "five pages of new regulations"¹³ in each issue of the magazine.

11 'Stakeholders' refers to individuals representing training and certification bodies, charities, trade associations, safety and quality standards membership organisations, standards bodies, energy supply and distribution companies, manufacturers, construction and housing companies, and trade press. It encompasses the gas industry excluding registered gas engineers, whose views are reported separately.

12 Gas Engineer Training Research Report, November 2016
www.gisg.org.uk/publications.html

13 The primary legislation governing the gas industry is the Gas Safety (Installation and Use) Regulations (GSIUR), which has remained unchanged since 1998. For the purposes of this review, the words 'legislation' or 'regulation' are used as engineers refer to them, which includes direction such as changes to Standards, Building Regulations, Benchmark, manufacturer's instructions, Energy-related Products Directive (ErP) etc.

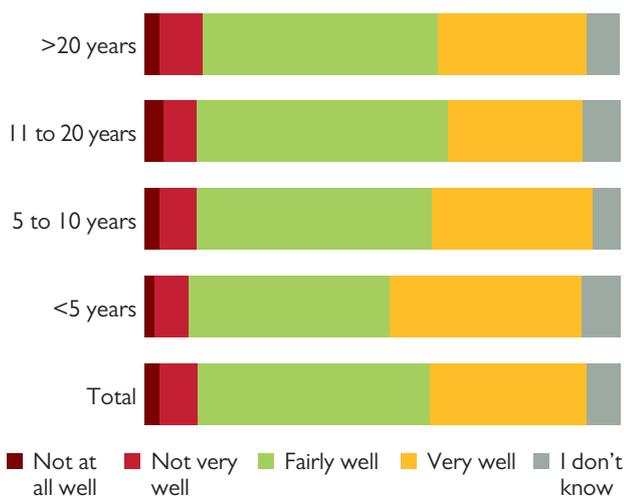
3.5 The registration body

The transfer of the gas registration body to Gas Safe Register has been positive for the industry, according to registered gas engineers.

Gas Safe Register

Registered gas engineers believe Gas Safe Register is doing a good job, with eight in ten saying it's performing its remit well. Engineers who are relatively new to the gas industry are especially complimentary about the registration body.

Figure 8: How well Gas Safe Register is performing its remit (% participants)

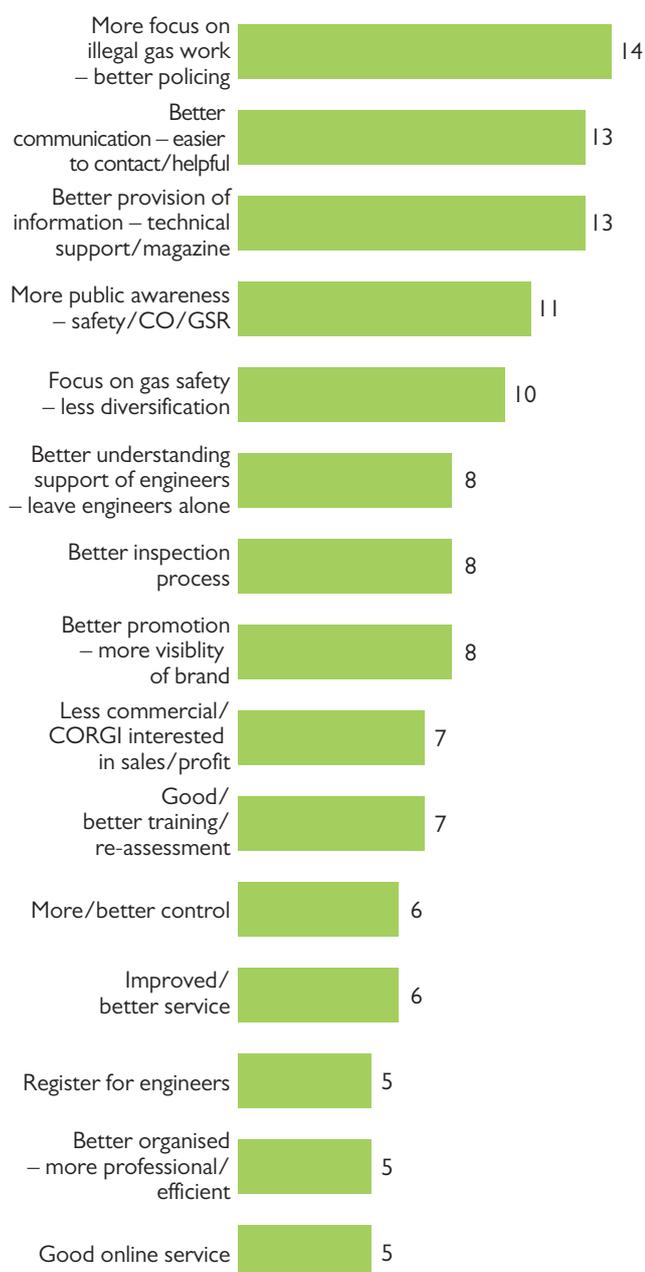


Base: All participants including non-engineers (2,814); registered <5 years (386), registered 5-10 years (494), registered 11-20 years (792), registered >20 years (988)

Only those who have worked in the industry for more than ten years will have experienced the previous registration model run by CORGI. Overall, these engineers believe Gas Safe Register operates a better model of registration, although 38 per cent feel it's no different. However, in London, the majority (58 per cent) feel Gas Safe's registration model is better than before. This stands out from all other regions, where engineers' opinions of Gas Safe Register were generally aligned with the average. Few engineers and stakeholders¹⁴ feel the current model is worse.

When asked to select reasons why the registration model has improved, mentioned most often is the increased focus on illegal gas work and better policing (14 per cent). A similar proportion say Gas Safe Register communicates better with engineers and is easier to contact and/or more helpful. They also agree that Gas Safe Register provides better-quality information, including its technical support and monthly *Registered Gas Engineer* magazine.

Figure 9: Reasons for feeling current model has improved
(% participants)



Base: Participants who think current model of registration is better (882)

The availability of inspectors and the Register’s risk-based inspection process, which means fewer engineers are inspected than before, is the chief criticism of Gas Safe’s registration model – although this should be set in the context of the larger group of respondents who saw the Register’s increased focus of resources on illegal and unsafe work as a positive (Figure 9).

Of the 163 respondents who believe the current model of registration is worse than before, 21 per cent perceive that training and assessments aren’t meeting requirements, and 16 per cent say there hasn’t been enough progress on illegal gas work. These and other criticisms, such as sub-standard engineers and/or workmanship, are likely to be frustrations with the industry in general, as training, for instance, is not part of Gas Safe Register’s remit.

The views of stakeholders towards Gas Safe Register are positive, with few dissenting voices. Most feel they have a strong relationship with Gas Safe Register, have contact on a fairly regular basis – including collaboration on consumer awareness and safety campaigns – and believe it is doing a good job.

“I think they provide a great voice for the industry... they have also been instrumental in making sure that gas safety stays on the agenda and particularly the pieces of research that they undertake which are always very well received and usually quite innovative... Day to day they provide a great service for customers, to provide a safe repository of qualified engineers that can work on their property.” **Energy supplier**

“I’m very supportive of Gas Safe, and the things that they do and the guys that are there are good guys that have addressed the safety issues and do a good job even though they are walking a bit of a tightrope with educating and policing [engineers] as well.” **Manufacturer**

“They’re honourable in that respect that everything they do... there isn’t a commercial mindset to it; they don’t try and sell things.” **Manufacturer**

3.5 The registration body continued

A source of support

The majority of stakeholders are complimentary about the standard of Gas Safe Register's employees, who they say are knowledgeable. They are also credited with doing a great deal to communicate with consumers and promote the gas safety message.

Stakeholders say they'd like even more direct interaction from Gas Safe Register with the industry, such as through sharing information regarding inspections.

"I just think there should be more interaction...with the industry, constructive interaction, letting the rest of the industry know what they're finding, and what areas they feel should be improved, and then coming up with constructive ideas on what could be done to improve that." **Training body**

Engineers also appear to welcome the opportunity for more direct contact with their registration body, such as through an 'area manager', because this provides something tangible in return for their registration fee.

Interest in having an area manager increases with an engineer's length of registration, but is actually of less interest to those who work alone (sole traders) than companies with employees.

"When I was first qualified, and I was out on my own, I had an inspector... who I occasionally do still phone... he did come to a couple of jobs. It was good. I quite appreciated having him because I could phone him up and speak to him a bit."

Gas engineer

"[The risk-based inspection programme] meant that they could concentrate on the people who were identified as doing improper work and people who did proper work and were competent... they were left alone a lot more than they used to be."

Trade association

Some engineers also mentioned they'd like Gas Safe Register's support during disputes with customers – a recurrent theme was wanting Gas Safe Register to put more emphasis on support and help, rather than policing the workforce. Helping engineers to market themselves – of interest to 16 per cent overall – is much more likely to appeal to sole traders, particularly those aged under 45.

The registration fee

Despite Gas Safe Register freezing the cost of registration for the past eight years, not everyone is happy with the current charging structure. This applies particularly to very large organisations, which feel they are major contributors to the cost of running the Register, as each of their engineers must be registered individually, but which feel they have the least to gain from it. There is also some frustration among engineers from all business sizes that much of Gas Safe Register's focus is on the less competent and illegal gas fitters, and they feel they are subsidising this activity through their registration fee.

"The viewpoint is that over time there has been a lot of work on getting businesses registered but what [engineers are] seeing now is that most of the resource is actually going to police the unregistered or the ones with low standards, so there's quite a bit of ill-feeling about that in relation to the fact that the decent installers are footing the bill."

Trade association

However, engineers do feel that Gas Safe Register has financial and political power and so it can deliver successful public awareness campaigns – an essential part of its remit.

A broader remit

Gas engineers' main criticisms of the registration body tend to relate to areas for which Gas Safe Register has no remit or responsibility, such as training and competence. Participants were asked whether the registrar's remit should be broadened; however, there was no clear consensus.

For some stakeholders, the current remit of Gas Safe Register isn't entirely clear and needs to be better defined before any change is considered. Others feel that Gas Safe Register should remain focused on its current role for three reasons:

- That's what the industry needs them to do
- It's unlikely to have the resources to take on other responsibilities
- Its focus should be on continuous improvement before further (or additional) areas of responsibility are considered.

"I think it's one of [Gas Safe Register's] strengths is that it has been focused on the core issue of maintaining the Register and looking after notifications of installations and the rest of it. And I think if it were to start to broaden its remit a bit then I think the danger is you do tend to then start getting a little bit of resentment from registered engineers." **Trade press**

For some stakeholders, there is a belief that the industry could benefit from the Register's remit being expanded to include training and competence, and leadership. However, it should be noted that assigning responsibility for these areas is not covered by the remit of the HSE, which appoints the gas registration body.

"[Gas Safe Register's] mandate is driven by HSE and is to be public-facing and consumer-focused, and I don't know how true that is, but then there's a huge gap there in terms of who is responsible for ensuring the competency of these engineers." **Trade association**

However, views were quite mixed. There was an observation that Gas Safe Register already has input on training standards and there are plenty of other organisations working in that area of the industry. There is also concern that more involvement in training and qualifications could be a potential conflict of interest for the Register.

A suggestion was made that the remit could encompass quality of installation as well as safety because there could be evidence of poorly installed appliances that still meet the safety standards.

"If you talk about gas safety, then gas safety probably has improved. The quality of delivery of that gas safety I don't think has improved. I think that's probably reduced. And the reason I say that is that the measurement of gas safety would be you put a boiler on to a wall, for instance, the job can be the worst in the world, but it's safe... So there is a need to bring quality into the gas safety side of it; by doing that, I think you strengthen the scheme." **Safety and quality standards membership organisation**

There is also recognition that Gas Safe Register and HSE would need more resources or wider powers of investigation to enable them to deal with the root of some safety issues.

3.5 The registration body continued

“I think on the enforcement side and on the inspection side, there should be more resource available to Gas Safe Register and that probably means money and people ... they should have more presence out there visiting consumers, doing checks... inspectors not just attending call-outs when there’s been a problem raised but be able to do more of the proactive checking... In an age of public-spending austerity, I am concerned that the HSE don’t have the resource... And if some of that was part of the Gas Safe Register licence agreement and Gas Safe Register were funded to do that... [it] could benefit the safety of the industry and could also give Gas Safe Register a bit more teeth.”

Safety and quality standards membership organisation

One trade association suggested that Gas Safe Register should be more involved in innovation in the gas industry and its implications for safety, such as a pilot study on the potential to convert Leeds’ natural gas network to hydrogen¹⁵.

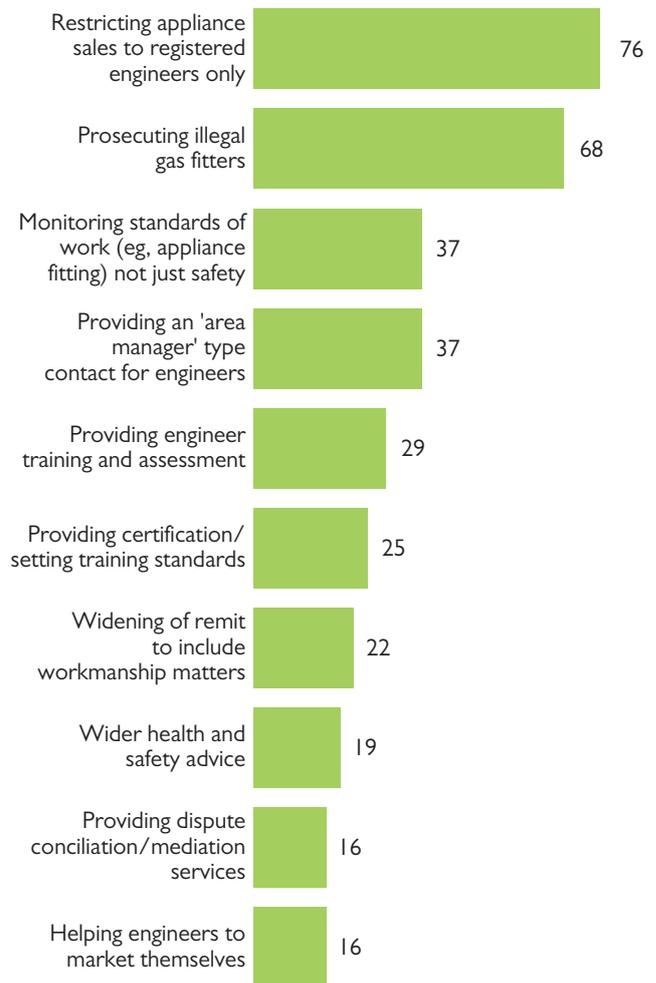
Another suggestion was that Gas Safe Register should own the Gas Industry Unsafe Situations Procedure (GIUSP) – a document used by engineers to guide their actions, including how to classify unsafe gas situations. Until recently, this had been managed by an industry group, including representation from Gas Safe Register. However, since the Decade Review consultations took place, IGEM has taken over full responsibility for managing this document. Gas Safe Register continues to make GIUSP freely available on its website and magazine app.

No Gas Safe ID card? No boiler

Restricting the sale of gas appliances to registered gas engineers only is an issue that engineers have campaigned for, and long felt very strongly about. It is an industry problem, evidenced by the significant discrepancy between the number of boilers sold in the UK and the far fewer notified under Building Regulations.

This issue dominated the response of engineers on areas where they would like the Register to become involved. The smaller the company, the more likely they are to want this: 78 per cent of sole traders think it’s an issue, compared with 53 per cent of those working for companies with more than 20 employees. However, restricting trade sales is not something that Gas Safe Register or HSE could enforce within their remits.

Figure 10: Further areas in which Gas Safe Register should be involved (% participants)



Base: All participants (2,814)

¹⁴ 'Stakeholders' refers to individuals representing training and certification bodies, charities, trade associations, safety and quality standards membership organisations, standards bodies, energy supply and distribution companies, manufacturers, construction and housing companies, and trade press. It encompasses the gas industry excluding registered gas engineers, whose views are reported separately.

¹⁵ H21 Leeds City Gate: www.northerngasnetworks.co.uk/archives/document/h21-leeds-city-gate

3.6 Leadership and influencers

Gas Safe Register is seen as the main influencer in the UK’s gas industry by the majority of participants in the Decade Review. It’s a heavily regulated industry, and there are many organisations – some with overlapping objectives – and is risking becoming fragmented. There is a clear desire among engineers and stakeholders¹⁶ for one organisation to take the lead.

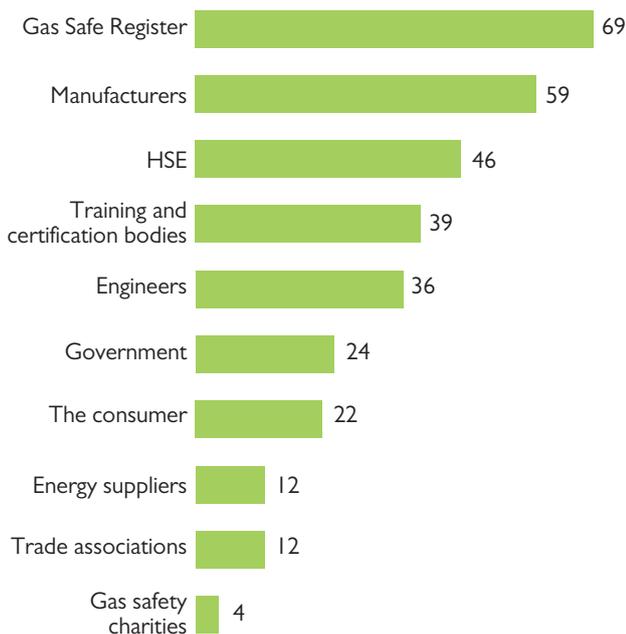
Who leads the gas industry?

Gas Safe Register is seen as one of the main influencers in the gas industry by seven in ten engineers. This is especially the case among those who feel that Gas Safe Register is performing well.

HSE, seen as an influence by almost half, is more likely to be mentioned by people aged over 35 than those younger, and also by those in larger companies with six or more employees.

Training and certification bodies are seen as an influence by four in ten participants, increasing with engineers’ age, and especially likely to be mentioned by those with more than 20 years’ registration.

Figure 11: Main influencers in the gas industry (% participants)



Base: All participants (2,814)

The organisations most likely to be mentioned as key influencers by stakeholders are HSE and Gas Safe Register. HSE is not always top of mind, but when prompted is acknowledged to be influential. However, many have limited interaction with HSE and, when they do, it tends to be incident-related.

HSE is perceived to be important but possibly lacking in resources, which means it is seen as less proactive than some would like. They have high-calibre people but stakeholders perceive that employees tend to get moved around. HSE is felt to have a less visible role with engineers, using Gas Safe Register as its intermediary. However, not everyone sees HSE as influential.

“[HSE plays] a very, very diminishing [role] and... they’re discharging their responsibility by appointing Gas Safe but I think there are holes in that... The contract they arranged for Gas Safe Register doesn’t fill in the gaps they’ve left behind.”

Certification body

“The personalities I deal with in HSE at the moment are better than they have been over the last 20 years: they’re really good people, understanding, listening, and they’re nice people. But HSE as an organisation, I don’t see offer any real help or leadership.”

Energy supplier

For most, Gas Safe Register is very influential in the industry. Only a minority feel that Gas Safe Register isn’t influential; that they just administer the register, interpret HSE’s requirements and act as its ‘policeman’.

The importance of engineers is also acknowledged by stakeholders, some of whom believe engineers are actually the leading influence in the industry.

“The installer is unquestionably still the biggest influencer in this industry, and the closer you can get to that installer, and bring out products that meet his requirements, and help him with all the services he needs, then the better you’ll be together.”

Manufacturer

3.6 Leadership and influencers continued

Energy suppliers, particularly British Gas, are seen as influential because of their size and brand strength. However, there is a concern from within the training and certification community that some energy suppliers could use their influence to negative effect.

“I think they’re driving possibly the standard down: wanting to have assessments done quicker, cheaper, not covering the same amount of information. So I think there are problems; I think they’re the drivers, really.”

Training and certification body

Training and certification bodies and the government are mentioned as influencers more by engineers than stakeholders, but are seen as influencers by some.

IGEM and a wide range of trade associations and committees are mentioned across the board. Notable by its absence is the consumer, seen by a minority of engineers as having an influence and not mentioned by stakeholders at all.

The need for a leader

The wide range of influencers and large number of organisations working in the gas sector underlines the fragmented nature of the industry, as commented on by stakeholders. There is also a perception that the number of organisations within the gas industry is contributing to unnecessary regulation. Compounding this is the fact that most registered engineers are sole traders and, as such, don’t necessarily have the time and resource to get actively involved in the industry.

Engineers and stakeholders perceive a need for real leadership and feel that this is a role Gas Safe Register could fulfil, although does not have the remit for.

“We’re still bumbling over the same issues where we’re talking about people coming into the industry who are not properly trained and qualified, and ... there’s hardly any other industry that’s regulated like us..., and yet we still can’t get it right... I just ask myself why isn’t it better? And I think it is leadership in the industry.” **Energy supplier**

As a public-facing organisation, Gas Safe Register is seen as a key way to bring the industry together and closer to its consumers.

“Gas Safe Register are always looking at opportunities to help their customers better and to promote the work that we do and use the data that we have available. They’re like the glue that sticks the organisations together.” **Energy supplier**

On several occasions, stakeholders at industry events commented that some unspecified initiatives were getting bogged down at committee stage. They feel an agreed industry leader would help take control and push through changes and new initiatives. There is also a call for more coordination between organisations, and an impression that the industry sometimes struggles to work together.

However, one representative from a safety and quality standards membership organisation described the industry as becoming ‘a broader church’, with greater cooperation between organisations than there had been before.

¹⁶ ‘Stakeholders’ refers to individuals representing training and certification bodies, charities, trade associations, safety and quality standards membership organisations, standards bodies, energy supply and distribution companies, manufacturers, construction and housing companies, and trade press. It encompasses the gas industry excluding registered gas engineers, whose views are reported separately.

3.7 The future

Will technology replace the sole trader? Will natural gas continue to be the heating fuel of choice? The gas industry looks set for much more change over the next decade, from smarter appliances and controls to an ageing workforce and installations, to 'green' initiatives, including potential new fuels.

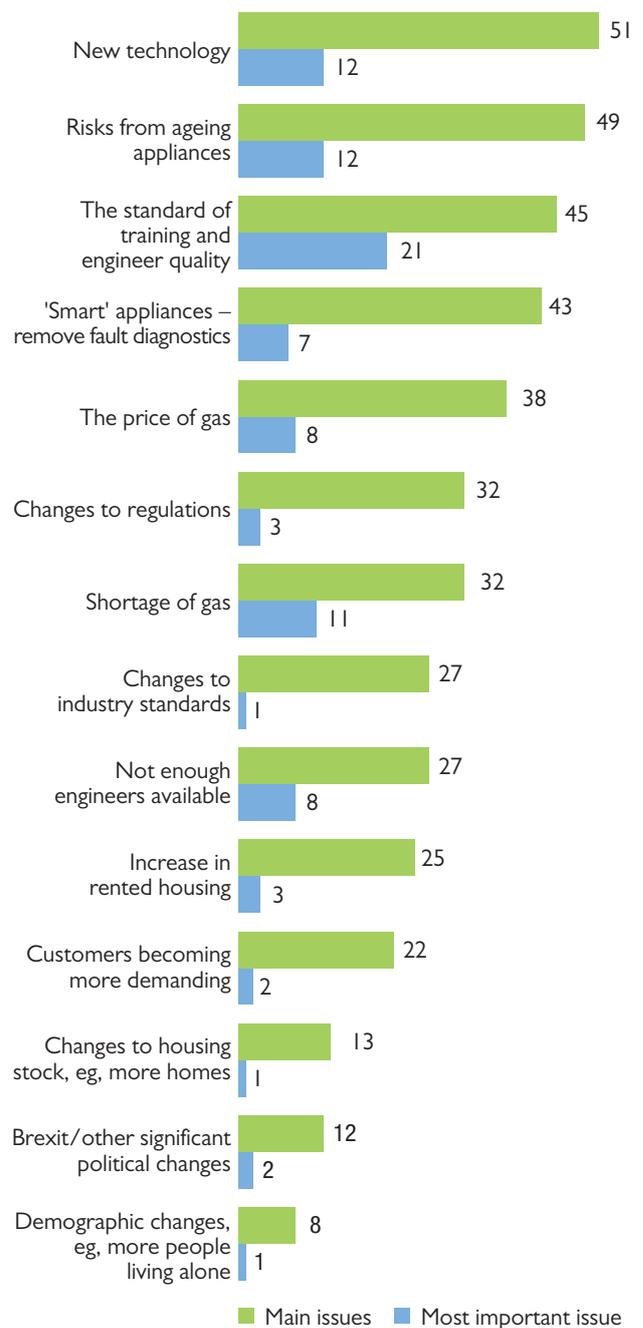
Training for tomorrow

The standard of training and quality of engineers is likely to continue to be a significant issue in the future, according to engineers. In fact, they see it as the single most important issue – selected by one in five participants. This, and fewer engineers joining the workforce, are of particular concern to older engineers who have been registered for a long time.

When asked about the issues the gas industry will face in the future, engineers talk about the physical aspects of their job, with around half (51 per cent) saying new technology will be an issue – particularly for older engineers. A similar number (49 per cent) say there will be a need to update ageing appliances, also of more concern to those aged over 55 (55 per cent).

While only one-third of participants believe a shortage of gas is a problem that will need to be addressed, it's very important to those who selected it, with 11 per cent saying a natural gas shortage is the biggest issue.

Figure 12: Main issues the gas industry will need to address in the next decade (% participants)



Base: All participants (2,814)

3.7 The future continued

The future of natural gas

Engineers in focus groups questioned the future of natural gas, as many new homes are fitted with electricity only. There was a belief – not shared by all participants – that a reduction in the use of gas could put engineers out of work. Engineers also discussed the trend towards a single centralised boiler providing heat and hot water for an entire block of flats, and commented that some registered engineers would not be qualified to work on these installations.

When asked about the future use of fuel, consumers brought up fracking – a technique to recover gas and oil from shale rock. They generally see this as problematic; they feel that what they’ve heard about it is negative.

A minority of consumers also share the engineers’ perception that gas may be used less in the future: one person mentioned hydrogen as an alternative fuel; another commented on the scarcity of gas cookers at retailers; another said a lot of new-builds are electricity-only (which they thought was due to building costs and gas safety issues).

Stakeholders¹⁷ also question the long-term future of gas. However, several say this is in the government’s hands and they’re waiting for it to lead on energy policy.

“Before you ever even start to think about where Gas Safe Register fits in or where anybody else fits in, you actually need to get a government which has a proper strategy for the security of energy.” **Energy supplier**

“There almost needs to be a plan over the next 30 years where have we got to get to, and where do we need to be in the next five to 10 years. I think it’s got to be on someone’s radar to be reviewing and understanding those things, probably at the Gas Safe level, maybe not HSE, but somebody with the government to actually take a view on that.”

Trade association

“Perhaps one would expect the government to take more of a lead, whether it’s the commissioning of nuclear plants, or whatever. And I think that’s probably beyond a 10-year period because, I would imagine from what I’ve seen and heard, there’s still reserves in the North Sea and in other areas for natural gas, for instance.” **Construction and property**

Stakeholders also anticipate new energy sources being considered alongside gas and electricity, which could include renewables such as solar, thermal and air- and ground-source heat pumps, methane, biogas, and hydrogen. There is a big opportunity potentially for Gas Safe Register to be a part of those conversations, although it isn’t felt to be involved currently. The reason for this is because Gas Safe Register has no remit outside piped gas, as per the Gas Safety (Installation and Use) Regulations 1998.

New fuel sources are seen as a likely challenge for engineers, who will need to train on the accompanying technology and fuels. But there’s also a view that the basic skills required for working on natural gas could be transferred to some new fuels.

One housing association talked about actively training their engineers in renewables, such as solar, thermal and air-source heating technologies. Renewables are also very much on manufacturers’ radar, with hydrogen viewed as an exciting challenge.

“I don’t envy [Gas Safe Register] when they’re having to monitor hydrogen installers because it’s wonderful, but it’s very, very potent stuff and it’s very unstable.” **Manufacturer**
“[Hydrogen] would preserve the future of [using] gas cookers, boilers, fires etc.... [but] quite dramatic technical changes which will involve more Gas Safe input into making sure all the engineers and installers are trained and qualified to operate these new appliances.” **Manufacturer**

Some participants feel that households could be powered by hydrogen as soon as 2025; others feel that fuel changes aren't likely to happen in the next decade.

The future supply of natural gas from sources where the composition is likely to be different, and of lower quality than the North Sea, was mentioned by a number of stakeholders.

"I think there's going to have to be a serious look at getting people to understand combustion properly, which is something that tends to not be too high up on the agenda in the UK because we've always had really good-quality gas, very stable, very good quality." **Training body**

The government's now-axed energy-saving scheme, Green Deal, attracted negative comments – 'a farce', 'a disaster' – and one trade association explained that the scheme was too difficult for gas engineers to understand and explain to consumers. A charity suggested that the government needs to talk to the organisations that understand consumers and the gas industry at grassroots level; one person from a safety and quality standards membership organisation said that is now happening and that government is beginning to listen to the industry.

Perhaps more ambitiously, some suggest there should be one umbrella organisation with responsibility for all utilities, not just gas. There is certainly a feeling that Gas Safe Register will need to focus on other piped-gas fuels – potentially hydrogen – as natural gas stocks deplete.

Advances in technology

With the technological advances in gas appliances, engineers in focus groups said they'd need to be more computer-literate in the future, and they are noticing a move to online diagnostic services for gas appliances. While training courses are useful, they feel it doesn't necessarily teach them about new boiler models, and there's a trend for boilers to be replaced, rather than repaired.

Stakeholders believe new technology is being embraced by the industry, but consumers aren't taking up 'smart' technology, such as controls, at expected levels. Possible reasons for this are they're finding the technology too difficult to operate, or see it as a fad – consumers want simplicity. However, stakeholders also say that technology is becoming easier to operate and there's an emerging acceptance of technology in the home, with smarter, connected appliances becoming popular. Boilers that inform the manufacturer when they are about to break down are already on sale, and there is a belief that, in time, there will be service contracts that relay boiler information directly back to a server.

However, one trade association expressed concern that greater technology in the gas industry would make it more difficult for the sole traders to compete, as machines replace 'old-fashioned skills', just as modern cars now need specialist equipment for repairs.

"That level of technology is going to preclude sole traders and small businesses, so it's going to mean that the bigger servicing companies... will dominate the industry and probably they will create the demise of the sole trader and small business." **Trade association**

"Boilers have all become much more technologically advanced so they've now got diagnostic systems in them; they're becoming like cars. They're not like older boilers where it was much more based on the mechanics of the boiler."

Gas engineer

3.7 The future continued

While the government aims to offer a smart meter to every UK home by 2020, there are divergent opinions on these next-generation gas and electricity meters which communicate directly with energy suppliers and show householders near real-time energy use via an in-home display. Some believe smart meters will have a big impact on energy-saving behaviour; others are less sure and concerned about data protection issues. The smart meter roll-out was seen by one charity as a way to spread safety messages.

The workforce of the future

Stakeholders believe training standards and engineer competence will continue to be high on the gas industry's agenda in coming years. They anticipate a shortfall in good-quality labour and diminishing quality standards, as older engineers leave the industry, unless measures are taken to address this.

The importance of apprenticeships was mentioned repeatedly. Some believe that few small companies are currently taking on apprentices; however, a trade association expressed a more positive view, saying a lot of larger companies are taking on apprentices. But funding appears to be the big issue. Participants feel the government needs to attract people into the gas industry, rather than positioning it as a declining industry.

"The Trailblazer apprenticeship [employer-led groups that develop apprenticeship standards] is being launched... I believe it's a step in the right direction providing somebody polices that apprenticeship properly." **Retailer**

"The industry now is dominated by small independent installers, literally one man and a van... and the feedback I get from talking to them is that they've got no interest in taking apprentices because effectively all they're doing is training a competitor... So the apprenticeship model is really, really important if we are to have enough gas installers to meet the needs of the future, but it's how do we fund that?"

Certification body

Out with the old

There is a belief that it will be more difficult to get older boilers serviced and repaired when older engineers retire, and a lot of pre-condensing boilers will still exist in homes.

"There are three million products that we would want to see removed today... but there's actually nine million inefficient installations out there.... The problem is... a lot of gas engineers pride themselves in how long they can keep a boiler running for. It's a great thing: I've got a 22-year-old boiler, like a classic car." **Trade association**

One specific concern is the influx of smart meter installers, and that once the smart meter roll-out completes, these installers – who've trained only on smart meters – will look to move into gas work without having had adequate training.

"Short term there's going to be an issue with all the smart meter engineers that are being trained at the moment that are going to come back into the industry without a job once smart metering stops. There's going to be an issue with those candidates wanting to improve or develop their skills because they've probably got on a programme that's a dead end."

Training body

Housing

Most stakeholders aren't clear about potential changes to housing stock. There is some indication of a move to electricity rather than gas, with the aim of reducing carbon emissions, but this isn't believed to be imminent. Gas industry stakeholders are looking to the building industry for influence.

It is thought that new housing stock will be an opportunity to have the most up-to-date and energy-efficient appliances. There could be legislation to make CO alarms, like smoke alarms, compulsory in new builds – and one person said a lot of larger builders do this by choice. But it was also said that builders will not want the extra cost of allowing for new fuels. One manufacturer said that they would very much welcome annual boiler servicing to become a mandatory requirement, as it is in Germany.

Brexit

The UK's decision to leave the European Union, known as Brexit, was felt by just 12 per cent of engineers to be an issue the industry would need to address. When asked for further details of issues likely to be caused by Brexit or other political changes, six in ten cite the increased cost of buying appliances from Europe.

A manufacturer also mentioned the fall in the value of sterling following the Brexit vote, which has led to a 15 per cent increase in the cost of boiler components (40-50 per cent of which are imported from Europe).

The other side of the coin is that Brexit may create an opportunity to buy appliances more cheaply from outside Europe. However, only one in four Decade Review participants believe this to be the case, and boilers must be country-specific because of variations in gas and water regulations.

Inflation is felt by just over half to be a likely problem and a similar number believe there will be new or different regulation¹⁸.

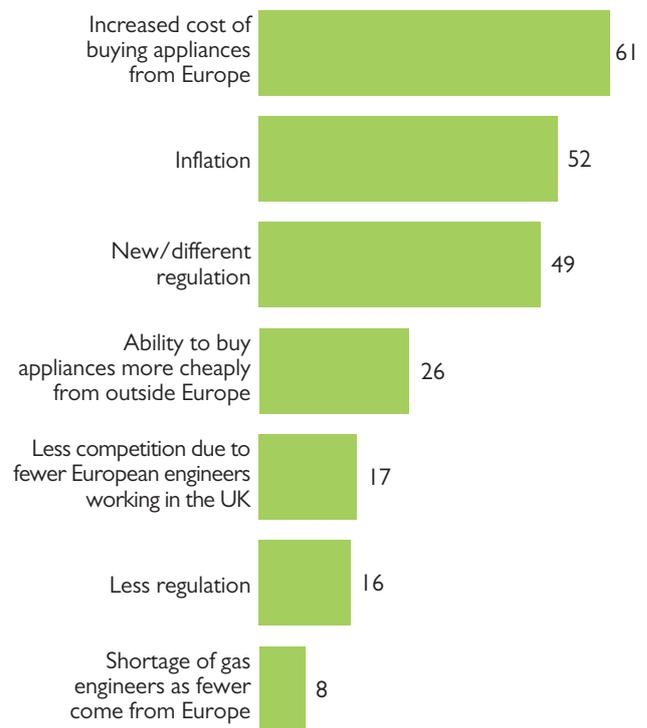
Consumers don't believe that Brexit will have an impact on the gas industry or gas safety, as they say boilers from outside Europe will still need to adhere to the UK's stringent safety standards. Most also weren't worried about a potential shortage of engineers.

Stakeholders tend to think that Brexit won't have much impact on the gas industry. They expect the current European standards to be maintained; as one manufacturer put it: "They're good standards, written by the right sort of people".

"We've got the best safety regime; we're helping other member states to improve their systems and processes on safety... I don't think there is anything that we should be concerned of at this moment in time." **Safety and quality standards membership organisation**

One of the training bodies mentioned a potential loss of EU funding; manufacturers felt there could be issues with importing components from Europe, but all manufacturers would face the same problems.

Figure 13: Main issues which Brexit/other political changes are likely to cause in the gas industry (% participants)



Base: Those who feel Brexit or other political changes will need to be addressed in next decade (324)

Meeting the industry's needs

There was a wide range of opinion about the most important thing the industry needs to do to meet engineers' needs in future. Mentioned most often was improving training and re-assessment, particularly the five-year ACS assessment to prove continued competence, and this was especially likely to be mentioned by those aged over 55. Those younger than 55 were much more likely to be worried about clamping down on illegal gas work or stopping non-registered people from buying gas appliances.

3.7 The future continued

The request for better communication and more accessible information comes from one in ten participants across the board, with no particular groups more likely than others to want this.

For stakeholders, the main issues that the industry needs to focus on over the next 10 years are training and new fuels and/or technologies.

Training and assessment is mentioned most by stakeholders, who want to see it covering improved standards; ensuring engineers are properly trained to do their job – not just pass a test; and attract new engineers to the industry. Recognising potential issues with future fuel supply, training on and adapting to new technologies and fuels are seen as critically important.

However, some also mention the paramount need to continue to focus on safety and communicate a positive safety message to consumers.

“Ensuring that people who are working on gas appliances are safe to do it. It’s as simple as that really.” **Certification body.**

“I think the industry... only ever gets publicity when a house blows up or someone gets killed. I think it would be nice to have a spin on the industry that’s more positive ... to get people to service equipment rather than, ‘Oh it’s broke down. I’ll get it looked at’. Why not have this positivity that says doing this and this will save you some money and hassle, rather than a skull and crossbones danger-type thing.”

Manufacturer

17 ‘Stakeholders’ refers to individuals representing training and certification bodies, charities, trade associations, safety and quality standards membership organisations, standards bodies, energy supply and distribution companies, manufacturers, construction and housing companies, and trade press. It encompasses the gas industry excluding registered gas engineers, whose views are reported separately.

18 The primary legislation governing the gas industry is the Gas Safety (Installation and Use) Regulations (GSIUR), which has remained unchanged since 1998. For the purposes of this review, the words ‘legislation’ or ‘regulation’ are used as engineers refer to them, which includes direction such as changes to Standards, Building Regulations, Benchmark, manufacturer’s instructions, Energy-related Products Directive (ErP) etc.

What is needed to improve the gas industry?	%
Improve provision of training/re-assessment	
– change to five-year assessment	17
Clamp down on illegal gas work	13
Stop non-registered buying gas appliances/fittings	9
Better communication	
– updates to regulations/accessible information	9
Support/protect engineers	
– local support/area managers/meetings	8
Improve/maintain quality of/retain experienced engineers	7
Reduce costs/fees	6
Increase customer awareness	5
Improve/uphold standards/regulations – clarify/simplify	5
Promote gas industry	
– more engineers/recruiting future engineers	4
Don’t know	4
Promote future of gas – a viable energy/regulated pricing	3
Better inspection process – more site visits	3
Regulate training centres/companies	3
New technology – promote awareness/embrace	3
Advertise/promote Gas Safe Register	
– its members/registration	3
Work with manufacturers	
– updates/quality of appliances/training	3
Continue as is – evolve/adapt	3
Put safety first	3
Promote apprenticeships	2
Improve earnings	
– getting more work (increased competition)	2
Reduce red tape/bureaucracy/paperwork	2
Improve technical advice – fewer grey areas	2
Promote regular servicing of appliances	2
Support small businesses/sole traders	2
Improve legislation/change legislation	2
Nothing	2
Police/educate landlords/letting agents	1
Evolution of gas appliances	
– integration of gas and renewables	1
Engineer grading – levels of expertise etc	1
Police large companies/organisations	1
Ageing appliances/scrappage schemes	1
Switch to digital/online/apps – information/training	1
Influence Government policy/work with Government	1
Greener energy – information/development	1
Base: all participants	2,814

Appendix

Methodology

The Decade Review consultation took a number of forms, described in detail below.

The survey questionnaire and call for participation in the Decade Review was publicised by Gas Safe Register in trade press publications.

Engineer focus groups

Two focus groups were held on 27 September 2016 in London. Groups were structured to include a range of levels of experience: one group comprised engineers who had registered within the past ten years; the other group was formed of engineers who have been registered for more than ten years. A representative spread of company size was also included.

The groups were held in a viewing facility and were viewed from behind a one-way mirror by representatives of Gas Safe Register and HSE.

Consumer focus groups

Two consumer focus groups were held on 5 October 2016 in London. Groups were structured by age: one group of 40-60-year-olds; another of 18-39-year-olds. The younger group was also recruited on the basis of their level of interest in new technology, making them more 'tech-savvy' than average.

Engineer Survey

An online survey was sent to all contacts for whom Gas Safe Register had an email address. An open link to the survey was also published on Accent's website and in a number of industry publications.

The survey was sent to 71,870 Gas Safe Register contacts between 3 November and 22 November 2016. It closed on 31 December 2016. Response was encouraged by an email reminder sent in December to those who hadn't responded, with an additional offer of entry into a prize draw.

Gas Safe Register's contacts are generally the person responsible for registering engineers on behalf of the company. In the majority of cases this will be an engineer, because most work as sole traders. These contacts are referred to as engineers in this report.

2,814 responses were received:

- 2,690 (96 per cent) from engineers (a response rate of 4 per cent)
- 124 (4 per cent) from open survey links.

An analysis of the engineers who responded to the survey compared to Gas Safe Register's contacts shows that the response is broadly in line with Gas Safe Register's profile of contacts.

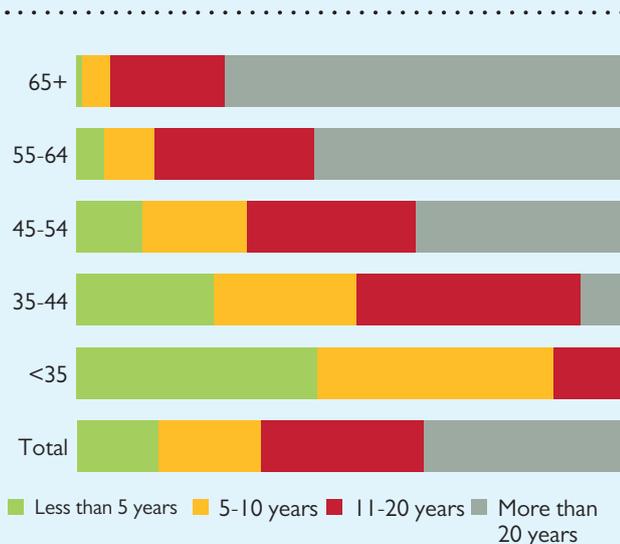
A good spread across the regions was obtained, with fewer from the East of England and slightly more from London and the South West than would be representative. Four per cent more under-35 year-olds responded compared to the database proportion, and there was a similar shortfall in those aged 45 to 54. Company size was close to representing the database profile, with a slight shortfall (3 per cent) in sole traders.

Representation of respondents

Region	% in database	% in sample
East England	11.8	6.0
East Midlands	8.1	8.5
Guernsey/Jersey/Isle of Man	0.1	0.2
London	8.1	10.8
North East	4.0	3.6
North West	10.4	11.2
Northern Ireland	1.0	1.5
Scotland	5.8	6.8
South East	19.6	18.4
South West	9.2	11.7
Wales	4.8	4.9
West Midlands	8.7	8.5
Yorkshire	8.3	7.9
Age	% in database	% in sample
<35	5.9	9.9
35-44	18.2	17.8
45-54	37.8	33.3
55-64	29.1	30.8
65+	9.0	8.2
Number of engineers	% in database	% in sample
1	77.4	74.5
2 to 5	17.3	18.7
6 to 19	3.3	4.0
20+	1.9	2.8

Appendix continued

Figure 14: Length of registration by age (% participants)



Base: All registered engineers (2,660); aged <35 (268), 35-44 (473), 45-54 (885), 55-64 (793), 65+ (214)

The survey took an average of 17 minutes to complete.

Stakeholder focus groups

Accent attended two meetings held at EU Skills:

- The Gas Industry Liaison Group on 17 November 2016
- The Standards Consultation Forum on 24 November 2016

At both events, a presentation by HSE regarding the retendering of the gas registration body contract was followed by a short presentation by Accent about the Decade Review.

Following this, the meeting’s participants formed discussion groups to share and discuss their views. The entire audience then reconvened to draw conclusions from the opinions discussed.

Stakeholder in-depth interviews

A range of gas industry stakeholders was identified, covering different aspects of the industry and representing differing views. In-depth telephone interviews were conducted with 33 representative individuals.

Broad areas of interest included:

- Training and certification bodies
- Charities
- Trade associations
- Safety and quality standards membership organisations
- Energy supply and distribution companies
- Manufacturers
- Construction and housing companies
- Trade press.

These interviews lasted between 30 minutes and one hour each on average. Quotes are attributed to the sector of the industry in which the individual works.

The Decade Review email address

Three individuals submitted their views via the Decade Review email address. All three were engineers who also completed the online survey but wished to add further comments.

If you have questions about the focus groups, the methodology and the interview topic guides, please email stakeholders@gassaferegister.co.uk

