Improving carbon monoxide (CO) outcomes and safety in homes

23 January 11:00 – 12:30, Committee Room 5, House of Commons

Chaired by Sir Peter Bottomley MP

Event Overview

This roundtable event, organised by the All-Party Parliamentary Carbon Monoxide Group (APPCOG), explored opportunities for improving carbon monoxide (CO) outcomes and safety in homes; taking into consideration developments in technology, the progress made by recent industry standards, and learning from projects supporting vulnerable consumers.

Key areas of focus:

- Considering contact points with customers and making the most of each visit/interaction
- Using data from alarms to improve safety and provide evidence
- Exploring specialised support for vulnerable customers
- Emergency incidents and how homes are made safe
- Providing advice and information on carbon monoxide safety

Attendees

Sir Peter Bottomley MP, Chair
Andy Speake, Aico (AS)
Scott Darroch, Gas Safe Register (SD)
Ian Palmer-Smith, Domestic & General (IPS)
Sam Graham, Cadent (SG)
Martin Garbutt IEng MIGEM, representing IGEM (MG)
Andy Mathews, OFTEC (AM)
Calvin May, HETAS Ltd (CM)
Claudia Jaksch, Policy Connect (CJ)
Dan Edwards, SGN (DE)
David Goodall, Steve Vick International (DG)
Kevin Herron, Policy Connect (KH)
Laura Fatah, Policy Connect (LF)
Lee Bradshaw, Morgan Lambert (LB)
Sarah Hill, Gas Safe Register (SH)
Stephanie Trotter, CO-Gas Safety (ST)
Steve Brown, Ofgem (SB)
Timothy Douglas, Property Mark (TD)
Vic Zeybrandt, Policy Connect (VZ)
Vicki MacDonald, Sanctuary (VM)

Apologies

Barry Sheerman MP
Alex Cunningham MP
John McNally MP
Stephanie Peacock MP
Liz Twist MP
Adrian McConnell CO Research Trust
Issie Myers, COMed Chair
Phil Burrows Cadent
Rob Lyon, APPCOG Comms Group Chair Prof Tom Woolley APPCOG SHF Chair

Key Findings

- Engineers have a key role to play when it comes to improving carbon monoxide safety in homes. Every visit is an opportunity to raise awareness, and professionals should be encouraged and supported to speak to customers about carbon monoxide risks and what residents can do.
- Carbon monoxide alarms which offer data and memory functions can show the carbon monoxide levels in the home continuously, which may provide useful evidence before and after a high level of carbon

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monoxide has been detected. However, these data functions are not yet widely understood by engineers, landlords or tenants. Further promotion and explanation of the benefits may be required.

- The new standard IGEM/G11 Supplement 1 developed by IGEM provides guidance to competent engineers when dealing with reports of carbon monoxide and an escalation route to CMDDA1 if required. This means carbon monoxide incidents can be dealt with swiftly and dangerous situations can be resolved.
- Differences in the statutory regulations for carbon monoxide alarms between the UK's four nations are unhelpful for engineers, landlords, property managers, manufacturers, and organisations providing advice or guidance for the industry. Alignment of the rules would be preferrable.
- A household survey of homes in Britain could provide a useful source of data on appliances, alarms and servicing habits which may then help to guide efforts to improve carbon monoxide safety in homes.
- Contracts and schedules for regular appliance servicing can increase the safety of tenants and improve servicing outcomes.
- Annual awareness campaigns such as Gas Safety Week and Carbon Monoxide Awareness Week have a vital role to play in reminding the public of carbon monoxide dangers and how to stay safe. Public education and awareness are key to reducing risk and ensuring that emergencies or unsafe situations are identified and responded to correctly.
- Eligible individuals and households should be encouraged to sign up to the Priority Services Register, so that they may be considered for more substantial support and pilot schemes to improve carbon monoxide safety.
- There may be more to learn from the ventilation policy and best practices for commercial kitchens, where regulations are extensive.

Event Summary

Chairs Introduction and opening remarks

Sir Peter opened the roundtable and thanked all present for attending. Sir Peter welcomed a useful and progressive discussion, looking at opportunities across the board to improve carbon monoxide safety in the home and embed safe practices. Sir Peter noted that accurate data is key to understanding the problem of carbon monoxide poisoning, and finding suitable, long-term solutions. This has been a challenge in recent years and the APPCOG is keen to hear of any advances in practice and technology that can assist with providing evidence of carbon monoxide and the prevalence of exposure in society.

Panellists' introduction

Andy Speake (AS), National Technical Manager, Aico

AS is the National Technical Manager at Aico, his work is focussed purely on domestic alarms and data. Recent advances in technology have enabled Aico alarms to provide a range of data in real time. The data can be uploaded to 'the Cloud' or directly accessed via a smart phone or similar device which wirelessly connects with the alarm. It is a useful tool for landlords to identify properties at high risk, and can also be used by any tenant, responder, or healthcare professional to check previous carbon monoxide readings. AS is a convener for the BS EN 50292 standard and sits on several national committees to provide expert advice on domestic alarm policy.

Scott Darroch (SD), Director of Marketing & Communications, Gas Safe Register

SD explained that the Gas Safe Register is the mandatory licencing and registration scheme for gas workers in the UK. The Gas Safe Register has two main functions, the operation of the list of Gas Safe registered engineers who are legally allowed to carry out gas work in homes, and secondly the campaigning work that is carried out every year for the nationally recognised Gas Safety Week. SD notes that gas safety is often low on the public agenda until something goes wrong – then it suddenly becomes a very high priority. The Gas Safe Register works in partnership with other organisations to raise awareness and keep the public safe.

Ian Palmer-Smith (IPS), Supplier and Heating Services Director, Domestic & General

IPS explained that Domestic & General is an insurance company that provides the service and repair arm for EDF and Scottish power. They have undertaken soft skills and customer awareness training with their engineers to help them speak with consumers about carbon monoxide safety effectively on the job. Engineers are also supplied with devices to detect carbon monoxide, whether they are visiting a property to service a gas or electrical or another appliance. This helps to keep consumers and workers safe at all times.

Sam Graham (SG), Technical Manager, Social Programs, Cadent

SG explains that Cadent are one of the UK's four Gas Distribution Networks, and this year they have supplied over 250,000 alarms to consumers. Cadent has a team of engineers that respond to carbon monoxide incidents, 45 of which are trained in CMDDA1 (see ref below). Cadent have carried out 500 investigations this year following carbon monoxide incidents where homes were disconnected from the gas grid, 481 of these homes have now been re-connected. Both Gas Distribution Networks Cadent and Northern Gas Networks have been undertaking a project 'Services Beyond the meter' to try and ensure vulnerable consumers are not left without gas. The first step for the emergency engineer is always to make the property safe by disconnection, the investigation to locate the source of carbon monoxide which follows take approximately three hours to test each appliance and thoroughly check for potential sources of carbon monoxide.

Martin Garbutt (MG), IEng MIGEM, Head of Technical Governance at HomeServe, representing IGEM

MG has been leading on the development of the new G-11 IGEM supplement, which provides guidance to competent engineers when dealing with reports of carbon monoxide, if they do not hold CMDDA1.

Panel and roundtable discussion

A: Managing carbon monoxide risks

Sir Peter noted that the best ways to manage carbon monoxide risks are regular servicing of appliances, education of carbon monoxide exposure symptoms, and installing carbon monoxide alarms.

SD agreed, under reporting is probably one of the biggest issues; as people may not be managing risks, but may be completely unaware that they are being exposed to carbon monoxide. When there is a fire or an explosion there is a very clear problem; even with the smell of gas, people generally act quickly to resolve these issues and mitigate the risk; however, the same cannot be said for carbon monoxide, which is why prevention is vital.

SG noted that poor ventilation causes incomplete burning, which in turn produces carbon monoxide. Incomplete combustion and lack of oxygen are intertwined, which is why un-flued appliances such as camping stoves are so dangerous inside, and why it is important to keep vents and ducts unblocked and flues in good working order to prevent carbon monoxide forming.

AS shared that an unexpected source of carbon monoxide can be wooden fuels that are in storage for a time. It may be advisable to install alarms in areas where large amounts of wooden fuels are stored over time as a precaution.

SD noted the registration regime for engineers working with solid fuel is overseen by HETAS, and the regime for oil and liquid fuel is overseen by OFTEC. However, registration in these fields is not mandatory as it is for gas engineers.

ST raised that the annual gas safety check required by landlords does not include a mandatory check for carbon monoxide. This appears to be a missed opportunity to reduce risk.

SG explained that the gas safety check is carried out under a specific regulation. There are four key elements that need to be checked: combustion performance has to be checked, and flue gas is checked and recorded.

If the level of carbon monoxide is above safety threshold, then the engineer will need to strip the machine down and service it.

MG added that the legislation states that the equipment must be checked 'in accordance with the manufacturer instructions' which will include mandatory checks for carbon monoxide safety.

ST stated that as an engineer attending rented property is picked by the landlord and paid for by the landlord, they may be motivated to ignore risks so they can provide a cheaper service and stand to get more repeat business.

Sir Peter wished for further information to be providing regarding registered gas engineers practices on flue gas testing. Sir Peter suggested that it would also be helpful to see research where three tests are carried out in a range of properties, to see if there are markedly different results for sweep testing, under CMDDA1 and under a full test.

IPS explained that Domestic & General engineers are encouraged to speak to customers about carbon monoxide safety at every visit, whether they are attending to service a gas or other appliance. D&G have developed a simple tool called Nico's story, which tells the story of a carbon monoxide incident and brings relevance to the consumer. Giving engineers and others in the home the time to speak to customers can help reduce carbon monoxide risks by passing on lifesaving information and safety advice.

Servicing contracts on home appliances can reduce risk, as there is greater certainty that appliances will be serviced regularly, and the history of the appliance will be available to the engineer. This can improve safety outcomes and prevent carbon monoxide exposure, as well as assisting the engineer.

AS shared that the alarm standard, currently BS EN 50291, is due to be reviewed. The threshold at which alarms sound (minimum 30ppm over an eight-hour period) has been considered, and in light of further information and medical research it is conceivable that this may need to be lowered, particularly for groups with higher risk or exacerbated sensitivity. There is a balance in sensitivity, as if the alarm sounds overly frequently, there is a greater risk that it will be viewed as 'nuisance alarming' and may be deactivated. On the other hand, alarms must provide adequate protection from harm incurred at sub-lethal levels of exposure.

Sir Peter requested a note from AS on alarm standards and potential revisions.

All agreed that public awareness of carbon monoxide is generally low and campaigns such as Carbon Monoxide Awareness Week and Gas Safety Week are important to reinforce these risks and how to stay safe. Simple Do's and Don'ts messaging can work well and be impactful.

B: Responding to emergency carbon monoxide situations

SG explained that when an engineer responds to an emergency carbon monoxide situation, the first priority is always to make the property safe. This is done by isolating the supply to the property and temporarily disconnecting from the network. A second visit will then likely be required to reconnect the supply.

Sir Peter asked if both these visits are arranged free of charge as part of the national emergency response?

SG responded that the first visit is always free of charge, to prevent further harm. At present, Cadent and NGN are piloting a project which offers vulnerable consumers reconnection without fee, so in these cases both visits are free of charge. The Gas Distribution Networks (GDNs) are prioritising vulnerable consumers in this project, such as those on the Priority Service Register (PSR) in order to manage resource and to address the risk of such consumers self-reconnecting to the gas network, which would create a dangerous situation.

MG added that the new standard that IGEM has produced IGEM/G11 Supplement 1 will help the engineer know what to do and when to escalate to CMDDA1 – which fills a gap between the Emergency and then Gas engineer going on to site – there is a clear procedure to follow which wasn't in place before.

ST pondered if people who have been exposed to carbon monoxide may be suffering from cognitive difficulties, and hence perhaps they are not in the best state of mind to be arranging engineer visits.

IPS contributed that in their role as an insurer, Domestic & General have a commitment to return to the property with a view to reconnect within six hours of the alarm sounding. This would likely be the second visit, after the property has been made safe by an emergency responder.

SG noted that once there has been an incident and it has been made safe; it is hard to know what happened in the property before. A full test can take around three hours.

AS raised that alarm data could potentially provide engineers with some useful evidence, if there is a memory function within the alarm in the home they are attending. Education is also key, as alarms can be triggered if there is inadequate ventilation for example when cooking. This may not indicate an emergency gas situation, but action still needs to be taken to disperse the carbon monoxide.

C: Challenges

Sir Peter opened the floor for attendees and panellists to consider any challenges in improving carbon monoxide safety in homes.

Timothy Douglas (TD) from Property Mark stated that it can be a challenge for landlords and their agents to comply with the new rules for carbon monoxide alarms, as in rented homes in England, the alarm(s) needs to be tested on the first day of occupancy. Often the new tenant may collect the keys from an office, so the first day of occupancy would not necessarily be the same day and requiring an agent or landlord to physically attend the property can be quite a challenge. Even adding 24 hours either side would be helpful.

TD noted that the regulations for carbon monoxide alarms in England have explicitly excluded gas cookers; which has been confusing as this is not the case in Wales. Scottish regulations have been quite detailed and have included specific requirements around the type of alarm – so it hasn't been simple for landlords with properties in different nations.

AS noted the regulations for alarms in Scotland include rooms which have flues running through them. The legislation across the nations differs massively and it would be extremely helpful if this could be aligned. In commercial cooking there are different regulations for ventilation, there is much more legislation on commercial capability standards which we could seek to learn from.

Sir Peter requested further detail on the differences in the alarm regulations, to be provided by the Secretariat.

Sir Peter noted that many households may be finding it challenging to continue the upkeep on their appliances due to cost of living concerns. National Energy Action have highlighted the connection between fuel poverty and carbon monoxide risks, which is surely a great challenge for us to be aware of as unfortunately fuel poverty is increasing. Sir Peter suggested that it would be informative to have a household survey of homes in Britain showing:

- What homes have an appliance that could pose a potential carbon monoxide risk
- How many/what percentage of these have an active and working carbon monoxide alarm
- How many/what percentage of these have had their appliance(s) serviced in the last 12 months
- What nation each home is in

If available, this information could be used to guide efforts to improve risk more effectively.

AS shared that data from alarms can be helpful to guide efforts to improve risk as well, one of the challenges is educating the public and landlords that the data function exists, and can be accessed via a simple phone app. Once people become more familiar with advances in alarm function, then there will be a wealth of data on carbon monoxide available.

Sir Peter recalls the Cross Government Group On Gas Safety And Carbon Monoxide (CO) Awareness, which the Health and Safety Executive (HSE) oversees. It is not known if the group is still active, the last published report covered Autumn 2020 – Autumn 2021.

Conclusions and closing remarks

Sir Peter thanked all contributors for a highly informative meeting.

In AOB, LF noted that the Clean Air (Human Rights) Bill has entered the Commons. The Bill would create a duty to improve outdoor and indoor air quality and includes proposals for developers to monitor and report on indoor air quality or the first twelve months in newly built properties, and for indoor air in public buildings and places of work to be subject to monitoring and reporting. LF highlighted EDM 679 which MPs can currently sign to show their support for the Bill.

Sir Peter thanked all attendees and closed the meeting.

Policy Background

Carbon Monoxide Alarms

In 2022, new rules for carbon monoxide alarms in homes came into force in England (under the Smoke and Carbon Monoxide Regulations Amendment 2022), Scotland (under the Tolerable Standard), and Wales (under The Renting Homes (Fitness for Human Habitation) (Wales) Regulations 2022). A welcome development, these regulations specify that carbon monoxide alarms must be supplied for millions of homes which had previously been outside the protection of the law. Once homes have alarms in place, it is vital that residents understand what these devices do, how best to use them, and how to respond if the alarm goes off.

Alarms are the only way to detect carbon monoxide, and government guidance recommends that all models should be compliant with BS EN50291 (although this is not mandatory in England or Wales). Some alarms can provide detailed data about the levels of carbon monoxide present and may have a memory function with the ability to track exposure levels over time. This information can be vital to confirm if a carbon monoxide incident has occurred and how much exposure those in the house have been subjected to.

Managing carbon monoxide risks

Regular servicing of appliances is essential to prevent the risk of carbon monoxide exposure. Engineers and other servicing professionals such as chimney sweeps play a vital role keeping homes safe and helping the public to understand carbon monoxide risks. Each visit to a home presents an opportunity to pass on life saving information to consumers, as well as checking for potential danger, and keeping appliances running safely. Unfortunately, many homes in the UK may not be undertaking servicing as regularly as needed.

Awareness is key to action. Public awareness campaigns such as Carbon Monoxide Awareness Week, Carbon Monoxide Alarms Save Lives, and Carbon Monoxide Safe 4 Summer, have reached millions of consumers with accessible information for carbon monoxide safety online and via TV and radio. Education programs have been developed for school children, membership organisations, university students, young people, and those working with vulnerable people, to embed carbon monoxide safety messages in society and teach good practice.

Responding to emergency carbon monoxide situations

As highlighted at a previous Policy Connect workshop, there is no set protocol for responding to a carbon monoxide incident, and responses within services vary considerably. Industry advice is to contact the Gas Emergency Service on 0800 111 999 if the alarm sounds or if carbon monoxide is suspected for another reason. However, residents will often call 999; so the Fire and Rescue Service, the Police, or health services such as paramedics might be the first to respond to a carbon monoxide incident in a home.

When reacting to a suspected carbon monoxide emergency, a common response from the Gas Emergency Service is to disconnect the building's gas supply from the gas grid to isolate the source of the problem. However, there is no obligation to re-connect the supply of gas free of charge. In the current climate, many

homeowners may struggle to find the funds to arrange for a private engineer to visit and make the home safe for re-connection; and hence they could be left without gas (which often means without heat) indefinitely. As well as the risk to health posed by cold homes, being forced to turn to unconventional energy sources to heat homes can increase the risk of carbon monoxide exposure and fires. For off-grid homes, the response to a carbon monoxide incident is likely to be even more varied; as homes may use a range of heating sources such as oil, LPG, biomass, and solid fuel.

Understanding how to use data from carbon monoxide alarms and incorporating this into a response protocol would provide beneficial data and help responders to deal with carbon monoxide situations effectively. By sharing examples of best practice and exploring opportunities to learn, participants will reflect on what solutions work to improve carbon monoxide safety and outcomes in homes, and form recommendations for future improvements in policy and practice.

New technology and recent industry projects

HomeLINK (AiCO)

HomeLINK is a multi-award-winning high-tech software team within Aico that leverages cutting edge home integration and analytics technologies to address the needs of social landlords and their residents. The team has industry-leading expertise in artificial intelligence and Internet of Things (IoT), software development and integration and a track record of helping landlords reduce operating costs and carbon emissions whilst improving their residents' wellbeing and safety. Readings of carbon monoxide levels in the home can be accessed in real time, and data can be traced back for the lifetime of the alarm (ten years).

CMDDA1

CMDDA1 is a qualification required if engineers want to investigate a report of fumes or carbon monoxide alarm activation in accordance with BS7967:2015 and use an ECGA (Electronic Combustion Gas Analyser) to draw conclusions about the gas appliances in the premises. This gas safety assessment is designed to test the competence of an operative in determining ambient levels of carbon monoxide and presence of CO2 in dwellings and identifying the cause of fumes using a portable electronic combustion analyser. This will typically be any engineer who responds to the genuine report of a carbon monoxide alarm being activated or a report of fumes.

IGEM/G/11 – Supplement 1

Responding to Domestic Carbon Monoxide Alarm Activations / Reports of Fumes after attendance by the Emergency Service Provider (ESP) of for Liquefied Petroleum Gas (LPG) the Gas Supplier

Guidance as to what that engineer should do if called to a property where a carbon monoxide detector has activated is clear for those with CMDDA1 qualification through BS7967:2015; but until now there has never been any clear guidance for competent engineers who do not hold this qualification. Industry recognized this problem and work commenced on a new IGEM standard: IGEM/G11 Supplement 1 (published June 2022) provides guidance to competent engineers when dealing with reports of carbon monoxide. The standard is aimed at both domestic and non-domestic installation as to what a gas engineer should do or not do when attending a property recently visited by the Emergency Service Provider (ESP) or Gas Supplier following the activation of a carbon monoxide detector.

Services Beyond the Meter

Services Beyond The Meter (STBM) is a large-scale project within Cadent in collaboration with Northern Gas Networks, which revolutionises the services these GDNs can offer. Cadent are

pioneering the provision of SBTM activities to customers living in vulnerable situations and fuel poverty. Previously, engineers attending an emergency report or concerns about carbon monoxide, would have been required to simply isolate the supply, leaving the customer in a more vulnerable position. This placed the onus of reconnection and any subsequent costs on customers without the means to pay, leaving them cold, risking the danger of self-reconnection or pushing them further into fuel poverty.

Chair and Speaker Biographies

Sir Peter Bottomley MP, Conservative Member, Worthing West

Sir Peter contested West Woolwich in the general elections of February and October 1974. He won the seat in June 1975. This was the first by-election win under Margaret Thatcher's leadership. He has served as Secretary of the Conservative Parliamentary Committee on Health and Social Services (1977-1979) and Foreign and Commonwealth Affairs (1979 - 1981). He was Parliamentary Private Secretary to Cranley Onslow MP, Minister of State in the Foreign and Commonwealth Office (1982-83) and then Parliamentary Private Secretary to the Rt.Hon Norman Fowler, Secretary of State for Social Services.

In September 1984, Peter was Parliamentary Under-Secretary of State at the Northern Ireland Office where his responsibilities included agriculture and the environment. In the 1997 general election, Peter was elected Member of Parliament for Worthing West. In June 1997, Peter was appointed to serve on the Select Committee on Standards and Privileges. His wife, Virginia, is a former Member of Parliament for South West Surrey.

Andy Speake, National Technical Manager, Aico

Andy's role as National Technical Manager within Aico provides technical expertise on domestic Fire and Carbon Monoxide alarm production and installation. Alongside Andy's role within Aico, he is a board director of the Fire Industry Association (FIA), a member of the FIA Fire Detection and Alarm council, chair of the FIA IoT Forum as well as chair for the FIA Smoke Alarm Devices working group. Andy is an active member of the Council of Gas Detection and Environmental Monitoring (CoGDEM) for expertise in domestic Carbon Monoxide alarms and is also a member of CENELEC Technical Committee 216 for gas detection. As a participant on several National and European committees Andy is heavily involved in standardisation and is the convenor for the CENELEC working group responsible for BS EN 50292 (Apparatus for the detection of carbon monoxide in domestic premises).

Scott Darroch, Director of Marketing & Communications, Gas Safe Register

Scott is Marketing & Communications Director for Gas Safe Register and has been with the organisation since its launch in 2009, serving in a variety of communications and PR roles. In his time at the Register Scott has been responsible for delivering reviews into gas engineer competence, enforcement of gas regulations, and the Decade Review. An experienced media spokesperson and campaigner, Scott been one of the driving forces in establishing Gas Safe Register as a vital voice in consumer safety, particularly with the ongoing success of Gas Safety Week. In previous roles he has worked in the defence sector and in comms consultancy. When not working he runs very muddy trails and hills, but not as often as his training plan says he should.

Ian Palmer Smith, Supplier and Heating Services Director, Domestic & General

Ian has worked at Domestic and General since 2018 and has been employed in the heating sector for over thirty-five years British Gas and HomeServe. Ian is the Supplier and Heating Service Director for Domestic & General and joined the organisation to lead the operational delivery for ScottishPower and EDF. Together with his team, Ian also manages the operational relationships of the heating original equipment manufacturers (OEMs), John Lewis, Amazon and D&G's service network; who carry out over 500,000 repairs a year across all sectors in the UK and Éire. Ian is a strong supporter of carbon monoxide safety, and regularly attends meeting of the APPCOG Advisory Board and Stakeholder Forum. He is proud that D&G have produced 'Nico's story' as a tool for engineers to talk about carbon monoxide safety when on the job.

Sam Graham, Technical Manager, Social Programs, Cadent

Sam Graham is the Technical Manager within the Social Programmes team at Cadent, managing the implementation of Cadent's Services Beyond The Meter (SBTM) projects, which are committed to never leaving a customer vulnerable without gas. Sam works with the wider team and strategic partners to deliver a range of services supporting customers in vulnerable situations, including educating communities on the dangers of carbon monoxide, and ensuring they are aware of the steps that need to be taken to stay safe and well. Sam is the business lead for the Smart metering implementation programme; managing and minimising any Regulation or Operational impact on the Cadent Network. Sam has worked as a Network Supervisor for Cadent, managing emergency operations and domestic connections. Sam has been employed in the gas industry since leaving school back in 2004, joining Cadent Gas in 2017 after eight years working for British Gas in technical and management roles.

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Martin Garbutt IEng MIGEM, Head of Technical Governance at HomeServe, representing IGEM

Martin is a member of the Institution of Gas Engineers and Managers as an Incorporated Engineer. He joined the Institution in 2013 and holds a Higher National Certificate in Building Studies (1994). With 32 years experience within the gas industry, he is currently the Chair of the IGEM/G/11 Supplement 1 group with the Institution of Gas Engineers and Managers, a member of the Gas Utilisation Committee and actively works with other groups within the gas industry. He worked for the Regulator, CORGI, as an Inspector, Large Business Inspector and Business Support Manager from 2002 until 2009. In 2009 he moved into the private sector and has overseen matters of gas compliance on a number of high-profile Government Schemes. Always wanting to further his career Martin is an experienced Incident Investigator. He is currently employed by HomeServe Membership Ltd as Head of Technical Governance.