

Minutes of Meeting

Document No CO-1459-19

Subject	CO Sub Group	Circulation	All members
Date	11 th June 2019	Circulation Date	17 th June 2019
Location	CoGDEM offices Hitchin	Circulation by	Website & email

Attendees

Apologies

Leigh Greenham - CoGDEM	Arthur Burnley - Alphasense
John Saffell - Alphasense	Andrew Keenan - CSA Sira
Richard King - Honeywell Analytics	Chris Hole - TTP
Mike Byrne - Ei Electronics	Paul Rennie - Kidde Safety
David Richardson - Ei Electronics	Richard Hallam - Codel
Peter Murphy - Ei Electronics	Kevin Milesen - GES
Jonathan Gilby - HH60 Consultants	Kazuaki Watanabe - Figaro Engineering
Andy Curtis - CoGDEM	Andrew Yardley - City Tech
Andy Speake - Aico	Ed Matchett – Newell Brands (First Alert)
Michael Wright - Aico	
Michael Vintis - Draeger	
Doug Longstaff - Draeger	
Stewart Davison - Gas Tag	
Michael Allan - TTP	
Jason Perrins - FireBlitz	
Brendan Simpson - FireBlitz	
Simon Jones - Kidde Safety	
Damian Cairns - Anton	
Peter Philpott - TPI	
Ashley Worthington - Weatherall RKI/Riken	
Takanori Okuno - Riken Keiki	
John Walsh - FireAngel Tech	
Ian Ballinger - FireAngel Tech	
Martyn Walley - Elite Security/Scolmore	
Masahiro Uehara - New Cosmos	
Yuki Fujimori - Figaro Engineering	
Graham McKay - BSI	
John Darby - City Tech	
Theresa Berry - City Tech	
Steve Cork - CSA Sira	
Gary Fairhurst - Kane	
Jonathan Kane - Kane	
Mike Hemingway - HSE	
Adrian Keats - Honeywell Analytics	
Paul Kelling - Codel	
Mike Murley-Hughes - Testo	
Rob White - DD Scientific	
Rob Lyon - Playfair Marketing	

Agenda:

- 1) Apologies and member introductions
- 2) Approval of previous minutes and matters arising
- 3) Lobbying activities (inc. All Party Parliamentary CO Group, Landlord Regs)
- 4) Publicity update (inc. CO Awareness Week 2019, Katie Haines Memorial Trust)
- 5) CO alarms standards review (inc. choosing a test lab)
- 6) Flue Gas Analysis (inc. update to EN 50379 and separate gas pressure standard)
- 7) Electrochemical toxic gas sensor lifetime testing
- 8) AOB (inc. CO-free barbecue briquettes)
- 9) Date of next meeting – Tues 22 Oct 2019

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1 Apologies and member introductions

Dr Mike Byrne (Ei Electronics) chaired the meeting and members introduced themselves around the table. One new member company has joined since our last meeting, Elite Security Products, a Scolmore Group company represented by Martyn Walley who was a regular CoGDEM attendee when working for Aico. Smart Compliance, the Scottish company with a communicating CO alarm has decided not to renew its membership this year.

For those who hadn't met him at our February meetings, Andy Curtis introduced himself and explained that he is now CoGDEM's Company Secretary having taken over from Dave Curtis who retired from the position in January. Andy has been shadowing LG as he will be taking over the CoGDEM admin role now that LG is retiring. AC's background is in the process emissions side of gas detection and he is already running the Source Testing Association.

The above list of apologies was displayed and read out, and members were reminded of the need to not discuss any matter that could be deemed to be anti-competitive.

"Participants in this meeting shall not enter into any discussion or conduct that may infringe applicable antitrust law.

This applies not only to discussions in formal meetings but also to informal discussions taking place in the sideline of formal meetings."

2 Approval of previous minutes and matters arising

The Minutes of the previous meeting (26th Feb 2019, CO1458-19) were read and accepted. Matters arising were covered during the rest of the agenda.

3 Lobbying (inc. All Party Parliamentary CO Group)

All Party Parliamentary Carbon Monoxide Group (APPCOG):

To enable commercial organisations to be involved with relevant Parliamentary affairs, CoGDEM is a member of the APPCOG Stakeholder Forum funded by industry (including certain CoGDEM members who choose to do so) and overseen by an Advisory Board. Andy Curtis attended a Stakeholder Forum meeting with LG in February and will be at the next meeting in July.

Since our last CoGDEM meeting in February, the APPCOG secretariat has been rightly focussing on the review of the 2015 English CO and smoke alarm regulations that apply to properties in the Private Rented Sector, which has itself triggered a review of the relevant section of Building Regs, (AD J, last reviewed in 2009/10). The relevant Government department is the Ministry for Homes, Communities & Local Government, and in February it was reported that the department's cost/benefit analysis was only just showing a positive benefit, so major changes to the landlord alarm regulations were looking less likely. However, recent comments made by MHCLG suggest they have been doing work on the cost benefit analysis which is now more positive and Ministers may have an appetite to adjust the regulations to make CO alarms a requirement of all rented properties, irrespective of the type of fossil fuel (i.e. gas, oil or solid fuels) and irrespective of the landlord's status (i.e. private sector, social housing, local authority). Any changes to the regulations will not be rapid as they must wait for two green papers to emerge (energy efficiency of housing stock and healthy homes), so it is unlikely that anything will emerge through Parliament in 2019, and the landlord sector has said that they must be given more advance notice of regulatory changes than occurred in 2015.

APPCOG does much of its work through its Sub Groups. The COMed Sub Group is monitoring the research projects underway with GST funding such as the EDCO project looking into Emergency Department admissions at three London hospitals (St George's, Frimley Park, Wexham Park) and improving tests for CO poisoning, hoping to set up a clinic for the ongoing treatment of victims. A forthcoming focus will be the effects of CO in pregnancy.

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The Comms Sub Group has met several times and our PR expert Rob Lyon is the current chair, causing the Group members to be more 'communicative' in advance of the various PR initiatives that they intend to take (more data in Rob's PR update below).

The SciTech Sub Group held a virtual meeting at the beginning of June and LG heard about the various research projects happening in academia, including 'CO-free' barbecue charcoal, see AOB below. Stewart Davison gave an update on the project that Gas Tag is undertaking which will involve linking CO detectors to the internet via Vodafone's IoT network. Deployment should occur at the end of 2019 allowing data to be gathered from social housing properties, which should include occurrences of CO at pre-alarm concentrations.

Others:

Gas Safe Register

After the question was raised at our previous CoGDEM meeting, LG spoke to GSR about their procedures for checking engineers' competence and was told that every engineer received at least one site inspection visit during the last 10-year period of the Capita contract and would receive a visit during the new 5-year contract started in April. This may not apply to the larger companies (e.g. British Gas and HomeServe) who conduct their own assessments, with reports being made available to GSR. Other inspection visits or investigations are risk-based (priority to new engineers or those with a poorer track record) or occur after an incident or complaint.

GSR did a radio day with Gloria Hunniford in February about gas safety for householders and the GSR PR people were proud of the coverage, but when asked how much mention of carbon monoxide was made and could we hear a recording of the interviews, GSR were not able to provide these. The annual Gas Safety Week will be 16th – 22nd September 2019, CoGDEM members may be asked for CO alarm donations again.

GISG (Gas Industry Safety Group) is still awaiting the fully costed proposal from Martin Brown of DNV/GL for the agreed research project to investigate the build-up of CO in typical domestic kitchen environments. With LG's retirement, future GISG meetings after the July 5th strategy meeting will be attended by AC or RL.

Gas Safety Trust continues to fund research projects involving CO. Their funding has been more focussed since Adrian McConnell managed the Trust (under Chris Bielby's Chairmanship, a similar arrangement to GISG) but Adrian has recently left both the GST and GISG roles to start a not-for-profit organisation called 'Safety Health Environment' which will enable him to spend more time on ICORN activities amongst other projects.

IGEM (Institution of Gas Engineers & Managers) hosted their joint gas industry awards event with EUA in May in London where Ofgem gave a keynote address about the need to decarbonise the UK's gas network. Nothing has yet been heard about whether there will be a 2019 IGEN CO conference in the autumn.

Graham McKay of BSI mentioned he now chairs the IGEN Gas Utilisation Committee (GUC) so he is happy to hear of any issues from CoGDEM members that may need to be raised in that IGEN forum. A key issue is the required decarbonisation of the UK's fuel gas network, particularly by the injection of hydrogen, and there were several discussions of the effects that this might cause with instruments being used for gas leak detection or combustion gas analysis (see sections 6 and 8a below).

4 Publicity update (inc. CO Awareness Week 2019 and Katie Haines Memorial Trust)

UK:

Rob Lyon Gave a brief update on his PR activities to support the CO alarm and FGA manufacturers who are part of a separate PR working group run by him via his independent company Playfair Marketing. Rob has chaired a meeting of the APPCOG Comms Group (see above) and attended a Parliamentary meeting to raise awareness of the risk of CO from barbecues in tents at summer music festivals. He mentioned the excellent relationship with the Katie Haines Memorial Trust, who are this year commemorating what would have been Katie's 40th birthday year. This kicked off with a memorial service in a Gloucestershire church at the end of March and the filming of a new video that Rob has prepared for them. Links to the video are available from Rob, and a new documentary-style video will be launched during 'CO Awareness Week'. Some CoGDEM member companies have donated CO alarms to KHMT via Rob.

Many years ago 'CO Awareness Week' seemed to be owned by the victims' charity having a similar name, but they have not been active for quite a while so the APPCOG Comms Group has decided to relaunch this initiative

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from 18th to the 24th November 2019. It is hoped that retailers of CO alarms will be given enough notice to help with the publicity drive.

HETAS published its 2019 Guide to solid-fuel products and services, and the CO chapter includes product listings from ten CoGDDEM member companies this year, coordinated by CoGDDEM.

Europe:

The European monitoring and lobbying group run by ADS Insight is contracted by a group of six CoGDDEM member companies to raise the profile within the EU Parliament and across the European nations. Two Skype conference calls have been held recently to discuss 2019 activities, which will concentrate on media monitoring and reporting of CO incidents across Europe (but focussing on key countries decided by group members), the implementation of the Energy Performance in Buildings Directive (EPBD) and researching the new batch of MEPs to find those who may have an interest in CO. Rather than have a CoGDDEM CO Roundtable event this year, the group hopes to play a small part in the EU Fire Safety Week events in November, introducing CO at a relevant meeting. There is also the possibility of the medical event in Lille mentioned at our previous CoGDDEM meeting (see France below). Jonathan Kane and Shane Lyons are the key co-ordinators of this group.

Netherlands:

The Dutch government is pressing ahead with its plans to introduce new licensing requirements for gas engineers, and recommendations for Dutch consumers to fit domestic CO alarms. The regulations may not now be implemented until 2021. Our Dutch group is keeping watch, but no other activities are needed at present.

France:

'OPRIM' now has a part-time secretarial resource to spread CO messages to relevant stakeholders throughout France. Shane Lyons of Ei set the group up and is trying to pursue the idea of a health CO event proposed to be held at the Lille 'Anti-Poisons Unit' in the autumn. This could provide a major opportunity for generic awareness-raising and French media interest prior to the coming winter heating season.

Global:

With Adrian McConnell's involvement (mentioned in the GST notes above) it is hoped that the International CO Research Network's (ICORN) can follow up on its two-day conference and workshop in Minnesota in September 2018. A meeting with Washington State University and hopefully the World Bank is planned for September 2019 in order to highlight the global CO issue.

5 CO alarms Standards Review (including choosing a test lab)

The UK's gas detection committee EXL/31/1 had its annual meeting on 20th March at BSI Chiswick, and the CENELEC committee TC216 met in Holland on 29th May 2019, both chaired by Tony Banfield who couldn't be with us today.

EN50291-1 is now stable and products will soon be appearing on the market showing compliance with the 2018 version, which Graham McKay confirmed BSI are now using successfully. EN50291-2 contains additional tests and performance requirements for CO alarms intended for use in recreational vehicles, and the updated version is now complete and should be published this year.

The three items mentioned at the February CoGDDEM meeting were raised by LG at the EXL/31/1 meeting and the secretariat ensured they were mentioned at the European meeting for delegates to take back to their national committees for discussion:

- the 2013 version of the guidance standard EN 50292 should be updated and perhaps widened to include interlinked alarms, to address the lack of consistency with how CO alarm manufacturers show the 'replace by' date, and deal with the location of combined smoke/CO alarms
- the grey area that exists between the standards for domestic CO alarms and the standards for industrial workplace gas detectors (EN 45544).
- new innovative products for domestic Indoor Air Quality appearing on the market often include sensors for low concentrations of CO, CO₂ and VOCs, but there is no consistency over activation levels, detection limits, ranges, accuracy and siting guidance. Is a standard feasible? (to be checked with the BSI Environmental Health committees)

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LG mentioned that a Boat Safety Scheme Examiner had spotted a Nest Protect CO/smoke alarm on a UK boat no longer carrying the BSI Kitemark but bearing the UL mark to demonstrate compliance with EN 50291-1 (although not-2 for boats). LG had not been aware prior to this that UL UK had this standard in their UKAS scope, although the test work may have been conducted in the US alongside the UL 2034 compliance testing. This led to a discussion on available test houses in the UK for CO alarm manufacturers to choose, and it was stated there are four that can certify CO alarms to EN 50291 (BSI, LPCB/BRE, Intertek and UL UK) with CSA/Sira having UKAS accredited test facilities.

The new standard for CO (and NO etc) in road-tunnels, EN 50545-2, would be covered in the afternoon meeting, but John Saffell said the Working Group was meeting regularly, and calibration/validation was a key focus.

At our February meeting CoGDEM members discussed the possible Brexit outcomes after 29th March, this obviously didn't happen and it remains unclear what might be the outcome after the new leaving date of 31st October. No new concerns were tabled, but the markings for safety products remain a key concern.

Smoke alarm manufacturers are moving to change their standard so that harmonisation under the Construction Product Regulations can be achieved, although it will be a difficult process involving various new classifications of devices. If successful, the CO alarm standard might benefit from a similar approach, but it was cautioned that this could be years away.

6 Flue Gas Analysis (update to EN 50379 and separate gas pressure standard)

There has yet to be a meeting of CENELEC TC216 Working Group 13, established to revise the FGA performance standard EN 50379 to allow for 'smart' devices such as those that don't have built-in displays but use the engineer's smartphone's display. It is hoped that the convenor Holger Schubert will organise a meeting soon.

Gary Fairhurst updated us that he will be the convenor of the reinstated Working Group 14 to create a separately numbered stand-alone standard for gas pressure meters ('tightness testers') rather than it becoming part 4 of the FGA standard EN 50379. The draft that was first proposed and circulated some two years ago will form the starting point for the WG's work.

Due to ill-health, Kevin Milesen could not attend the HHIC (Heating and Hotwater Industry Council) Boiler Technical Panel meeting in May as planned, to discuss how FGAs will measure combustion products when appliances are fed with fuel gas of various compositions and a potentially wider Wobbe index. This subject has been postponed until their next meeting in August.

This led to more discussion of the related subjects of Wobbe index, decarbonisation of the gas network and the injection of hydrogen to achieve this. Graham McKay stated that IGEM has an active project looking at the implications of widening the UK's existing tight tolerance of allowable Wobbe index (calorific value) of our fuel gas. The UK government is very keen on hydrogen injection, and the HyDeploy project at Keele is using a max of 20% hydrogen in methane as this is said to have negligible impact on the existing base of gas-burning appliances throughout the UK. Issues of concern to IGEM include how to control the mixture and injection rates, as well as leakage rates, considering the smaller molecular size of hydrogen compared with methane. Graham reminded the meeting that town-gas used as our piped gas in the decades up to the 1970s contained large concentrations of hydrogen (and CO). Mike Hemingway of HSE added more comments about the hydrogen projects, see 8a below.

Graham (and Mike) also mentioned the Hy4Heat project that will look at using pure hydrogen as a fuel to drastically reduce the UK's CO₂ emissions to atmosphere. BSI has started to develop a new standard for hydrogen-fuelled appliances, PAS 4444, and the next meeting will be on 9th July 2019. Doug Longstaff and Gary Fairhurst said they would be attending. Jonathan Kane raised a concern that if newly developed appliances had no scope for adjustment by gas engineers (perhaps being factory-sealed), then home-servicing might not happen and safety checks could be missed, leading to a possible decrease in the safety of the UK appliance stock. Jonathan Gilby added that it shouldn't be forgotten that the FGA standard EN 50379 may need amendment in light of the different combustion products from hydrogen-rich fuels.

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7 Electrochemical toxic gas sensor lifetime testing

John Saffell and Jonathan Gilby gave a brief overview of the outcome of the sixth and final meeting of the sensor group that had been held the day before this CoGDEM meeting. The 'Technical Specification' for a series of tests that sensor manufacturers can apply to relevant sensors has reached its final stage and should be ready for circulation within a week. Some early test results were presented at yesterday's meeting, showing how accelerated lifetime testing might be successfully achieved. LG requested that this final version of the TS should be reviewed in detail by BSI, possibly at a meeting with domestic CO alarm manufacturers to see if it might lead to a 'pre-authorisation' of CO sensors that are to be used in BS EN 50291-compliant products. The TS will be made available to all CoGDEM member companies, and other non-CoGDEM organisations on request to AC.

8 AOB (inc. CO-free barbecue briquettes)

a) HSE

Mike Hemingway of HSE gave us a further update on his involvement with the HyDeploy hydrogen injection project at Keele University mentioned in Item 6 above. There was no update on the project itself, but the HSE still has concerns about the cross-sensitivity of CO sensors (used in domestic CO alarms and Flue Gas Analysers) to hydrogen. Recent tests have shown that a typical leak of fuel gas into a domestic setting could cause an average room concentration of 400ppm hydrogen to exist if the fuel gas contained 20% hydrogen. With CO sensors used in domestic CO alarms having a typical cross-sensitivity of 15%, the hydrogen might cause an output from the sensor equivalent to around 60ppm CO, enough to trigger the alarm after an hour. In theory, an engineer attending a property after a CO alarm activation might look for a CO problem rather than a fuel gas leak.

Hydrogen-immune or hydrogen-compensated CO sensors would help, these are already used in many FGAs, but Jonathan Gilby cautioned that high concentrations of hydrogen could cause a breakthrough output from such sensors.

HyDeploy 1 at Keele is intended to be complete by 2020, and will be followed by HyDeploy 2, where 2 million homes are to be powered by hydrogen-enriched fuel gas by 2026. Mike reminded the meeting that such fuel gas will not be permanently injected with 20% hydrogen, but the content could be anywhere between 0 and 20% hydrogen. The source of the hydrogen is yet to be determined.

Mike also discussed the potential need for sensitive flammable gas sensors for hydrogen fuel, as the 400ppm he mentioned previously is only 1% LEL (Lower Explosive Limit). Such high-sensitivity sensors are in use in sophisticated hydrogen leak seeking instruments used (for example) in the aerospace industry for checking the integrity of pipeline welds, but the UK's gas industry needs to realise that this will not be a simple add-on to existing leak detectors in common use.

b) CO-free barbecue briquettes

Antony Nyombi is the PhD student at Cranfield University (Shrivenham campus) recruited by Roland Wessling to conduct research into the CO emissions of solid fuels, particularly charcoal used in domestic barbecues. LG has kept CoGDEM members up to date with his progress, and he is now only months away from submitting his thesis. As a practical result of his studies, he has formulated a charcoal blend that produces a small fraction of the CO that would come from normal charcoal, achieved by impregnating the mix with catalytic materials such as copper, manganese and palladium. It remains to be seen whether this can become a practical and affordable fuel, but he has produced briquettes in the shape of the letters 'C' and 'O' which although it is a gimmick, will probably help their publicity drive later this summer.



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c) Boat Safety Scheme

LG briefly updated the meeting on the ongoing project to assess the third-party risk of CO exposure to BSS Examiners when they board an inland waterways boat to conduct various safety inspections. Since December 2017 there have been over 80 occasions where a workplace portable gas detector has warned its user of CO concentrations greater than 10ppm, and several occasions where the flammable gas alarm has activated after a propane-fuelled appliance was reluctant to ignite.

From April 2019 the BSS has made CO alarms a mandatory requirement on all boats with sleeping accommodation that are inspected as part of the scheme. Much publicity has been put out into the boating sector, including articles and videos created by Rob Lyon, who can share these with interested parties on request. The CoGDEN/BSS list of 'approved' CO alarms only includes those products compliant with -2 of the EN 50291 standard, but if Examiners find a -1 alarm installed on board a boat, they will make a note that this is providing adequate protection but should be replaced with a -2 version when it is next replaced.

d) GASG

The April colloquium of the Gas Analysis and Sensing Group was titled "Vapour tales: gas detection and transportation" held at Brooklands and was successful. The next colloquium will be held at Warwick University on 27th June, titled 'Detection & Analysis of complex gas mixtures' covering VOCs and breath analysis. Details of the group and its activities and membership list can be found at www.gasg.info.

e) Helpline

LG said that there had been only a few calls during the spring so far (including 1 during the fortnight that AC had the helpline) including interesting calls from an engineer asking about gas cooker CO emissions, and a commercial company with a fuel gas leak discovered when a Smart Meter was installed.

f) Gas Engineer's PAMs (Personal Ambient Monitors)

Jonathan Kane mentioned that for several years the four gas distribution companies had equipped their First Call Operatives (emergency response engineers) with instruments capable of detecting CO (as well as flammable gas leaks), but no data was forthcoming about how many activations were occurring. LG suggested that GISG was in the best position to facilitate some form of data collection and he would ask this at the meeting on 5th July (also being attended by Andy Curtis). JK suggested that the GDN's CO collaboration network might be another group who could arrange to receive and disseminate such data.

g) LG's retirement

LG thanked members of the CO Sub Group and particularly the Chair Mike Byrne for their support over the years that he has been Administrator of CoGDEN and wished everybody well in the future. He encouraged members to be ready to help the new Administrator Andy Curtis if he needed assistance with queries from the helpline or email correspondence.

9. Date of next meeting – Tues 22 Oct 2019