

CARBON MONOXIDE ALARMS:

TENANTS SAFE AND SECURE IN THEIR HOMES

In collaboration with:



CONTENTS

Foreword.....	2
Executive summary	3
Key findings	4
Recommendations	4
1. Making regulations simpler for landlords	5
2. An updated cost-benefit analysis	7
3. Delivering the Government’s commitments to vulnerable households	10
4. The greater risks of CO poisoning to low income households	12
Conclusion	13
Acknowledgements	13

Foreword

One in five of all households live in private rented accommodation and the numbers are increasing^{1,2}. They rightly expect to be safe and secure in their homes. But we should not assume that is the case. The dangers from carbon monoxide (CO) poisoning - whether from faulty stoves or poorly maintained gas boilers - are very real. CO is a silent killer; it is colourless and odourless and can travel through walls, floors and ceilings. We are increasingly aware of the danger to life and health from toxins and pollutants in the air outside our homes and action is being taken. Action also needs to be taken to protect families where they live and work.

Since 2011, the All-Party Parliamentary Carbon Monoxide Group (APPCOG) has been working with a broad range of stakeholders from industry, academia, the public sector and charities. The Group has held seminars and roundtables, and conducted inquiries into ways of preventing CO poisoning. Its most recent report, launched on 11th October 2017 (*Carbon monoxide poisoning: saving lives, advancing treatment*), concludes that CO alarms should be required in all homes with a fuel-burning appliance. In order to achieve this objective an early priority is to tackle the situation in the private rented sector - this will also help deliver the Government's commitment to safeguard the more vulnerable in our society.

We thank all those who have supported and sponsored this important work over the last few years. This has allowed us to reach this seminal point in our campaign to save our citizens from the threat of CO poisoning. This report - a major input to the Government's review of the 2015 regulations - is a cornerstone in our campaign, and is supported by all bodies across the sector, from landlords to those who supply and service appliances. We commend the findings and recommendations to the Government, and call for early action to protect people as they start to put on their heating during the winter months.



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¹ DCLG (2016) 'English Housing Survey 2015-16: headline report'.

² Knight Frank (2017) 'The UK Tenant Survey 2017'.

Executive Summary

Since 2015, landlords in the private rented sector in England have been legally required to provide carbon monoxide (CO) alarms in all properties containing a solid fuel-burning appliance such as a wood burning stove or log fireplace³. This legislative change (*The Smoke and Carbon Monoxide Alarm (England) regulations 2015*) brought properties built before October 2010 in line with new builds, which since 2010 have been required to have a CO alarm where a solid fuel appliance is installed.

The focus on solid fuel appliances in 2010 (and hence 2015) was based on the greater assessed risk by comparison with other types of appliance and a cost-benefit analysis which showed it would not be cost effective to include all fuel-burning appliances⁴. However, a number of factors have changed since 2010 including the cost and lifespan of a CO alarm.

In 2014, the Scottish Government passed the *Housing (Scotland) Act* which required Scottish landlords to provide CO alarms in properties containing any fuel-burning appliance. In contrast to England this includes boilers, water heaters and all solid fuel appliances.

In its 2015 report, *CO: From Awareness to Action*, the All-Party Parliamentary Carbon Monoxide Group (APPCOG) established CO detection as a key area of focus and recommended that households should own an alarm and be educated on its vital purpose in saving life⁵. Nonetheless, there are still over 30 accidental deaths from CO poisoning a year and over 200 people hospitalised⁶. It is not known how many people are misdiagnosed and go home to suffer further illness or death.

A strong driver for action is the plight of some tenants in the private rented sector. This was recognised in the Government's 2017 White Paper *Fixing our broken housing market*, which stated the need to "improve safeguards in the private rented sector"⁷. Research on the link between low income households and the risk of CO poisoning⁸, and tragic events such as the Grenfell Tower fire, emphasise the need for a fundamental health and safety review to protect low-income tenants. That review must include CO alarms.

This report brings together experiences and input from Parliamentarians and policymakers, landlords, the gas and solid fuel industries, local government and CO alarm manufacturers. It identifies current issues for landlords and the industry, and the implications in particular for low income households. The report shows that the cost-benefit analysis has now changed to make the fitting of CO alarms a cost-effective measure to save lives. The work also demonstrates that extending the 2015 CO alarm regulations - to require CO alarms in privately rented homes with any form of fuel-burning appliance - will be of benefit to landlords through simplifying and removing ambiguity. Finally, it provides data from research showing that the poorest in society are the most vulnerable to CO poisoning and that this risk needs to be addressed urgently.

In summary, this report provides the Government with the evidence it needs to amend the 2015 regulations to cover all fuel-burning appliances in the private rented sector, thereby helping to protect the health and lives of the 10 million^{9,10} people living in rented homes, of which at least 2.7 million have been identified at risk of unsafe gas appliances¹¹.

³ DCLG (September 2015) 'The smoke and carbon monoxide alarm (England) regulations 2015: explanatory booklet for landlords'.

⁴ BRAC and DCLG (2010), 'Building Regulations 2010'.

⁵ All-Party Parliamentary Carbon Monoxide Group (January 2015) 'Carbon monoxide: from awareness to action — bringing behavioural insights to poisoning prevention efforts'.

⁶ All-Party Parliamentary Carbon Monoxide Group (September 2017) 'Carbon monoxide poisoning: saving lives, advancing treatment'.

⁷ DCLG (2017) 'Fixing our broken housing market', PM Foreword p. 6., "Finally, because building the homes we need will take time, we will also take more steps to continue helping people now, including by improving safeguards in the private rented sector".

⁸ UK Parliament (April 2017) Early day motion 1141 <https://www.parliament.uk/edm/2016-17/1141>. Accessed 24th October 2017.

⁹ DCLG (2016) 'English Housing Survey 2015-16: headline report'.

¹⁰ ONS (2017) 'Overview of the UK population: July 2017'.

¹¹ Gas Safe Register (October 2016) '27 million renters at risk from dangerous gas appliances' <https://www.gassaferegister.co.uk/news/news-2016/27million-renters-at-risk-from-dangerous-gas-appliances/>. Accessed 12th September 2017.

Key Findings

1 – Making regulations simpler for landlords and avoiding financial burdens

FINDING 1: The current regulations are too complicated and make communication to landlords difficult. This is exacerbated by singling out solid fuel-burning appliances.

FINDING 2: A CO alarm is a low-cost improvement for landlords, especially by comparison with other regulatory costs such as hardwired smoke alarms.

2 – An updated cost-benefit analysis

FINDING 3: The factors and methodology used for the cost-benefit analysis in “Combustion appliances and fuel storage systems: Approved Document J”, including the price of a CO alarm and the average life of an alarm, have significantly changed since 2009.

3 – Delivering the Government’s commitments

FINDING 4: A requirement on private landlords to fit CO alarms in properties containing any fuel-burning appliance would help protect vulnerable families and individuals. Updating the regulations would help the Government fulfil its objective of “providing a safe and secure home for all” as outlined in its 2017 White Paper.

FINDING 5: The tragic fire at Grenfell Tower reinforces the need for a fundamental health and safety review, which should include CO alarm regulations covering the private rented sector.

4 – The greater risks of CO poisoning to low income households

FINDING 6: Those living in low income households are most at risk of CO poisoning, notably those renting in the private sector.

Recommendations

RECOMMENDATION 1: The Government should as a matter of urgency update the existing Smoke and Carbon Monoxide (CO) Alarm Regulations 2015 so that landlords are legally obliged to provide CO alarms in the rooms of private rented properties containing any fuel-burning appliance, not just solid fuel appliances.

RECOMMENDATION 2: Landlords should be given adequate notice of and provided with clear guidance on future changes to the regulations. Document J should be updated to better inform decisions.

RECOMMENDATION 3: In subsequent reviews and amendments of building regulations the Government should widen the requirement to fit CO alarms to all properties including public and social rented sector properties, and owner-occupied homes.

1. Making regulations simpler for landlords

In 2015, when the *Smoke and Carbon Monoxide Alarm (England) Regulations* were introduced, a major concern was the financial and regulatory burden on landlords. Experience since then shows that the 2015 regulations in reality introduced complexity and confusion.

1.1. The complexity of regulations

Implementation of the 2015 regulations identified that the changes were not simple for landlords to understand and abide by.

In the first instance, distinguishing what is a solid fuel-burning appliance, such as a wood burning stove, and what constitutes another fuel-burning appliance, such as a boiler, has not proven to be straightforward. This has been identified as a problem by landlords and representative bodies such as the National Landlords Association (NLA)¹². The NLA advises that it would be simpler for landlords if the regulations were revised to cover all fuel-burning appliances, as this would avoid landlords having to distinguish between different fuel-burning sources.

An additional complexity for NLA members, who operate across the UK and therefore may own properties in Scotland as well as England, is the difference between the regulatory requirements. In Scotland, the regulations cover all fuel-burning appliances but in England the regulations are different. Complying with different and ever-complicated regulatory differences on either side of the border is an avoidable complexity.

FINDING 1: The current regulations are too complicated and make communication to landlords difficult. This is exacerbated by singling out solid fuel-burning appliances.

1.2. Avoiding financial burdens

Bodies such as the NLA have experience with the many issues facing private sector landlords, from regulatory changes, to tax reform, to energy efficiency and utility bill costs. The NLA is therefore well placed to consider the comparative benefits and burdens from different regulatory requirements.

In considering the impact of extending the 2015 regulations to all types of appliance, landlords and the NLA reviewed experience from Scotland's implementation of the Housing (Scotland) Act 2014. This Act required Scottish landlords to install both battery powered CO alarms and hardwired smoke alarms in all properties.

The Scottish Association of Landlords (SAL) advised that the cost of a CO alarm (at the time the average price was considered to be £23.62¹³) was low compared with that of installing hardwired smoke/heat alarms in all kitchens, living rooms and circulation areas, costing approximately £115 per detector¹⁴. The NLA take the view that the cost of a CO alarm is minimal and would only be of concern as a cumulative cost, such as when considering other necessary financial costs to landlords.

In summary, the strong view of leading bodies representing the interests of private sector landlords is that the financial burden of a CO alarm is of little significance. The NLA therefore supports the recommendation to update

¹² National Landlords Association (September 2015) 'Parliament approve Smoke and Carbon Monoxide Alarm (England) Regulations 2015 in time for 1 Oct deadline' <https://landlords.org.uk/news-campaigns/news/parliament-approve-smoke-and-carbon-monoxide-alarm-england-regulations-2015-in-t>. Accessed September 15th 2017.

¹³ DCLG (September 2009) 'Study on the provision of carbon monoxide detectors under the building regulations BD 2754'.

¹⁴ Scottish Government (September 2017) 'Consultation on fire and smoke alarms in Scottish homes' <http://www.gov.scot/Resource/0052/00524309.pdf>. Accessed 1st October 2017.

the regulations to cover all fuel-burning appliances as this would not only simplify the regulations for landlords without adverse financial impact, but would help promote best practice amongst landlords who place tenant safety as a priority.

FINDING 2: A CO alarm is a low-cost improvement for landlords, especially in comparison with other regulatory costs such as hardwired smoke alarms.

However, the NLA cautions that lessons should be learnt from the difficulty landlords faced in implementing the 2015 regulations over a period of just 3 weeks¹⁵. The lack of adequate notice, coupled with poor information flow from Government, apart from a regulatory guidelines handbook that was produced by the Department for Communities and Local Government (DCLG)¹⁶, made it harder for landlords and the NLA to implement these changes. Landlords should be given adequate notice and provided with clear guidance on the proposed changes when the regulations are changed.

¹⁵ UK Parliament (September 2015) 'Smoke alarms, carbon monoxide detectors and Legionella: landlords' responsibilities', briefing paper number 07307, 23rd September 2015. Parliament announced the new regulations on 15 September, 17 days ahead of the deadline for implementation.

¹⁶ DCLG (September 2015) 'The smoke and carbon monoxide alarm (England) regulations 2015: explanatory booklet for landlords'.

2. An updated cost-benefit analysis

The cost-benefit analysis¹⁷ was carried out prior to the introduction of the Building Regulations 2010, as the work leading up to the 2015 regulations was not intended to review the costs and benefits but simply to align the regulations to apply to properties built before as well as after 1st October 2010.

2.1. The factors in the 2009 cost-benefit analysis and subsequent changes

The 2009 cost-benefit analysis - which drove the DCLG decision to limit the regulation to solid fuel-burning appliances - looked specifically at the financial cost to landlords versus the potential benefit of greater regulation.

The factors used in the cost benefit analysis are set out in Table 1¹⁸:

Table 1: Factors considered in the cost-benefit analysis

Costs	Benefits
Initial installation	Lives saved
Maintenance and operation	Injuries prevented

There are some question marks over the methodology. In 2009, the Council of Gas Detection and Environmental Monitoring (CoGDEM), which represents the gas detection and environmental monitoring industry, raised concerns that the price of a CO alarm had been overstated in the analysis. Instead of using the average price of the range of CO alarms available on the market, i.e. including the most sophisticated (and therefore expensive), CoGDEM proposed that the analysis should have used the average price paid for an alarm: this would have reduced the average price per alarm from £23.62 to £15.00¹⁹.

Since 2009, technological developments and a wider availability of CO alarms on the market have further changed the factors used in the cost-benefit analysis. In the eight years since the 2009 cost-benefit analysis, CoGDEM estimates that as well as the price of a CO alarm having reduced, the life expectancy of an alarm has increased from five years to 7-10 years²⁰, further changing the figures used for the factor of “maintenance and operation”.

2.2. Appliance types

The other factor in the decision to cover only solid fuel appliances in the 2010 Building Regulations was the concern that they are more dangerous than other fuel-burning appliances. This was partly because the solid fuel industry is considered less well-regulated than the gas industry, and also because the emission of CO does not stop immediately once detected - unlike when turning off a gas appliance. However, there are other critical factors. CoGDEM advises that in their experience it is the installation and maintenance of appliances, rather than the appliance itself, which causes the problem. This is supported by figures from the Gas Safe Register (GSR) that one in six gas appliances in the UK are unsafe²¹. According to the GSR²³, in 2016 2.7million renters were at risk from dangerous gas appliances.

¹⁷ DCLG (2010) 'Combustion appliances and fuel storage systems: Approved Document J'. Accessed September 19th 2017.

¹⁸ DCLG (2010) 'Combustion appliances and fuel storage systems: Approved Document J'. Accessed September 19th 2017.

¹⁹ Macdonald S. & Chevin D. (June 2016) 'Fire, Gas and Carbon Monoxide Safety Regulations: what English social landlords need to know'.

²⁰ DCLG (2010) 'Impact Assessment of amendments to building regulations part J – Combustion appliances and fuel storage systems' http://www.legislation.gov.uk/ukia/2010/88/pdfs/ukia_20100088_en.pdf. Accessed 21st September 2017.

²¹ SGN, 'We've pledged our support for Gas Safety Week 2017' (September 2017) <https://www.sgn.co.uk/.../2017.../SGN-pledges-its-support-for-Gas-Safety-Week-2017>. Accessed 28th September 2017.

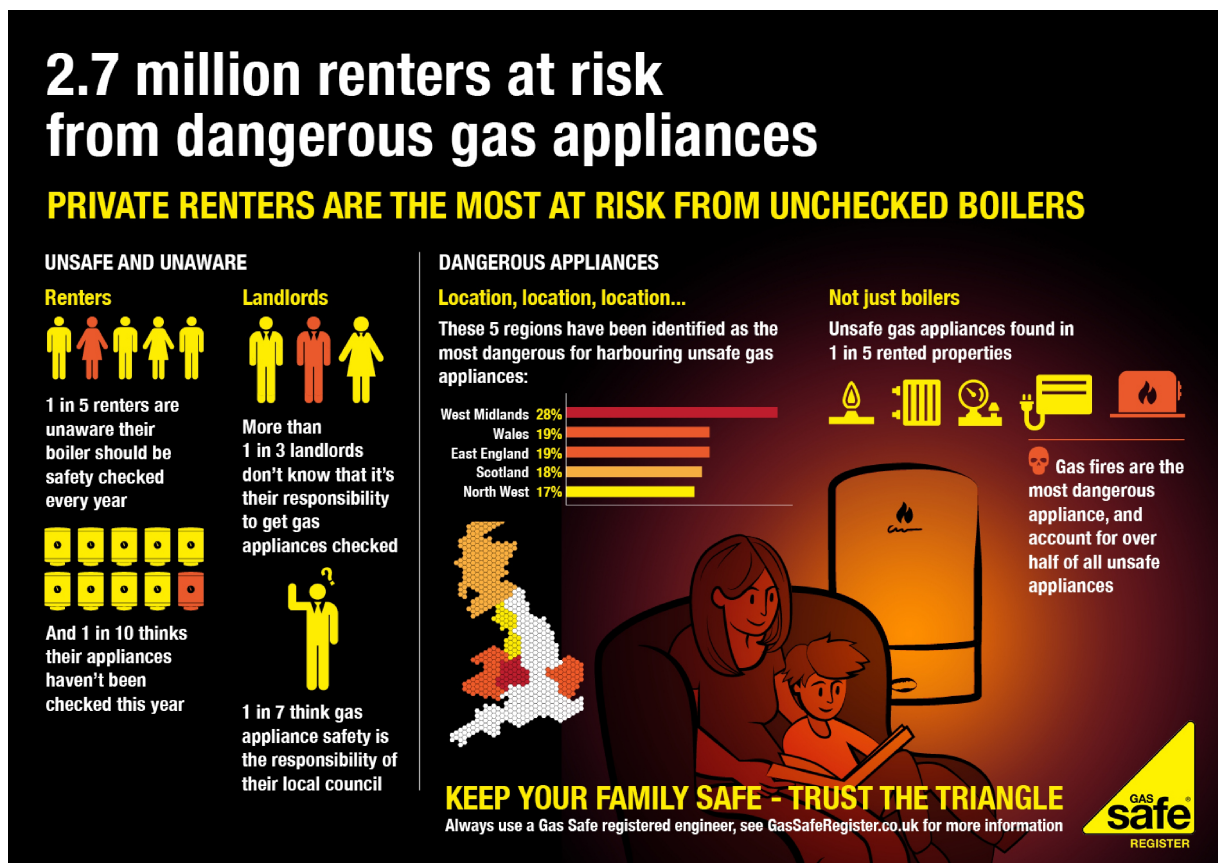
²³ Gas Safe Register (October 2016) '27 million renters at risk from dangerous gas appliances' <https://www.gassaferegister.co.uk/news/news-2016/27million-renters-at-risk-from-dangerous-gas-appliances/>. Accessed 12th September 2017.

Given that the cost of a CO alarm is now minimal, greater weight should be put on the numbers of households at risk from different types of appliances. In 2016 it was estimated that over a million homes have a wood burner and fireplaces, with annual UK sales of more than 175,000 units²⁴. While increasing, this is a relatively small number of households by comparison with the 23 million gas consumers in the UK¹³, meaning that it is incorrectly installed or poorly maintained gas appliances that expose the majority of households in the private rented sector to the risks of CO poisoning.

In summary, there has been a significant shift in the price, life span and availability of CO alarms since the DCLG's original consultation in 2009. The cost-benefit analysis should be updated to reflect this and the much greater opportunity to save lives through prevention of poisoning, if the regulations were to cover all fuel-burning appliances. The cost-benefit analysis should also address the number of people who attend the emergency department (ED) with CO poisoning, are misdiagnosed and then return home, either to return to ED again because of re-exposure, or who die from fatal exposure.

FINDING 3: The factors and methodology used for the cost-benefit analysis in "Combustion appliances and fuel storage systems: Approved Document J", including the price of a CO alarm and the average life of an alarm, have significantly changed since 2009. Document J should be updated to better inform decisions.

Diagram 1: Research finds 2.7 million renters at risk from dangerous gas appliances



Source: Gas Safe Register

²⁴ Environmental Times, 'The green wonders of the British wood burning stove industry' (15th June 2016) <http://www.environmenttimes.co.uk/news/item/384-stoves>. Accessed 24th October 2017.

Case Study 1: Dominic Rodgers

In 2004, Stacey Rodgers came into her son's room one morning to wake him up for school. Stacey found Dominic, aged 10, in bed covered in sick and unresponsive, and called an ambulance immediately.

After rushing to Dominic's aid, the paramedics started opening the windows and doors at the rental property, telling Stacey to evacuate the house. Not knowing why, Stacey was convinced her son had frozen to death.

The paramedics mentioned that gas could be involved and told her she couldn't return to her home for her own safety. Later blood tests showed that carbon monoxide was in Dominic's bloodstream.

Following an investigation, it was announced that carbon monoxide had seeped through the brick work from a neighbouring property whilst they slept, and that Dominic would have been overcome with the poisonous gas within 5 minutes.

Upon hearing this, Stacey asked what CO poisoning was, as she had never heard of it or purchased a CO alarm to alert her family to the danger posed by the odourless gas.

"The neighbour had only been in the house six weeks... she must have been devastated to find the fumes had killed Dominic while her children were fine, despite the danger. She'd put her trust in the landlord to maintain the property" she said.

Stacey has since set up the *Dominic Rodgers Trust* to help raise awareness of the dangers of carbon monoxide poisoning.

Case Study 2: Jade Ullrich

Jade Ullrich had just moved into a new rental house three months into her second pregnancy. With a five-year-old to look after and a baby on the way she put her tiredness down to morning sickness.

"I'd get up, wash my face, feel shaky and stumble back to bed," she said. "Some mornings I was too exhausted to get out of bed at all."

It wasn't until her son also began to show unusual symptoms that Jade realised that something else was affecting her family.

Jade's mother called an engineer to check their boiler, after which he found the boiler was leaking dangerously high levels of carbon monoxide as well as another fault which she could smell, and immediately evacuated the family.

The GP had to tell Jade exposure can cause stillbirth, miscarriage and birth defects including brain damage, as the gas can cross the placenta from the mother's bloodstream. Luckily, her baby was healthy.

In 2015, the landlords of Jade's property were prosecuted by the Health and Safety Executive. The boiler was more than 11 years old and had not been serviced for 18 months. Andrew and Deborah Hopkinson pleaded guilty and were fined £14,000.

3. Delivering the Government's commitments to vulnerable households

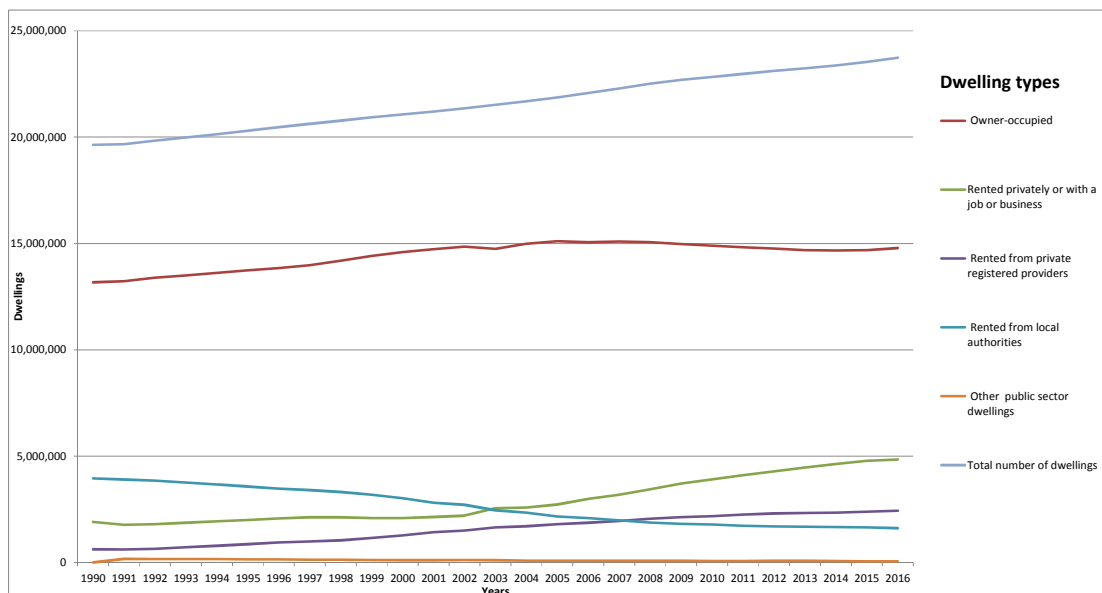
3.1. Fixing our broken housing market

Developments in the housing market - house prices, housing shortages, lack of affordable housing - have led to a greater number of people turning to renting than ever before. This trend is predicted to continue with the greatest increases being seen in the private rented market (see Diagram 2)²⁵.

In the 2017 White Paper *Fixing our broken housing market*, the Government recognises the need to address the issues around housing availability and affordability. As well as setting out a long-term goal of building more housing, the Government promised to take steps to improve safeguards in the private rented sector²⁶.

There is a clear demand for housing, particularly for vulnerable people - with Shelter reporting that 150 families across the UK are made homeless every day²⁷. As evidenced by Diagram 2, local authority rental types are falling, whereas private rentals and rentals from private registered providers are steadily growing. The White Paper noted that "areas where the housing shortage is most acute... [create] opportunities for exploitation and abuse"²⁸.

Diagram 2: Growth of the Private Rented Sector



Source: DCLG - Live Table 104; Overview of the UK population: February 2016; DCLG English Housing Survey.

²⁵ DCLG 'Live Table 104' (October 2017) https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/609290/LT_104.xls. Accessed October 20th 2017.

²⁶ DCLG (2017) 'Fixing our broken housing market' p. 6., <https://www.gov.uk/government/publications/fixing-our-broken-housing-market>. Accessed 12th September 2017.

²⁷ Shelter (2017) 'You can make a difference for the thousands of families facing homelessness' <https://england.shelter.org.uk/donate/150homelessfamilies>. Accessed 24th October 2017.

²⁸ DCLG (2017) 'Fixing our broken housing market' p. 10., <https://www.gov.uk/government/publications/fixing-our-broken-housing-market>. Accessed 12th September 2017.

FINDING 4: A requirement on private landlords to fit CO alarms in properties containing any fuel-burning appliance would help protect vulnerable families and individuals. Updating the regulations would help the Government fulfil its objective of “providing a safe and secure home for all” as outlined in its 2017 White Paper.

3.2. The Grenfell Tower fire

The Government’s concerns in the White Paper have been highlighted recently by this most tragic event, estimated to have killed around 80 people³². This devastating fire has brought to the fore tenant safety in their homes and the need to protect vulnerable people in the rented sector.

Although most tenants in Grenfell Tower lived in social housing, the events highlight the need for a fundamental review of health and safety regulation in the UK. In the meantime, the increase in renters in the private sector, and the limited demand of housing, means that some of the worst living conditions in the country are in the private sector³³, making tackling the risk of CO poisoning in the private rented sector a high priority. This has already been acknowledged by Ministers, with Nick Hurd MP, Minister for Policing and the Fire Service, describing Grenfell as a “game changer”³⁴.

Ministers will be very conscious that prior to the Grenfell Tower fire there had been a concern that previous recommendations had not been followed through, such as from the inquiry following the Lakanal House fire in Southwark in 2009. The All-Party Parliamentary Fire Safety and Rescue Group, in a report predating Grenfell, warned of a “tragedy waiting to happen”³⁵. The feeling that these recommendations were not implemented has increased residents’ anger and resentment. The Government can help avoid further tragedies by acting pre-emptively to protect those most vulnerable from CO poisoning.

FINDING 5: The tragic fire at Grenfell Tower reinforces the need for a fundamental health and safety review, which should include CO alarm regulations covering the private rented sector.

Case Study 3: London Borough of Redbridge

One evening, a number of social housing flats in the London borough of Redbridge, saw the carbon monoxide (CO) alarms go off. Occupants of the building included couples, families and elderly people. All tenants were evacuated and the fire and rescue service were called.

On arrival, the fire service noticed that the flats were located above a Turkish restaurant, which used a large charcoal grill to cook most of its food on. At night, the restaurant would leave the charcoal to burn out, whilst also turning off the extractor fan. However, the CO was still being produced by the hot charcoal and was emitted and had seeped through the walls and ceilings of the restaurant, flooding the flats above. Thankfully the Council had installed CO alarms in the flats which spared approximately 20 people from being poisoning and potentially having fatal consequences.

³² BBC news, ‘Four ministers were warned about tower block fire risks’ (21 June 2017) <http://www.bbc.co.uk/news/uk-40330789>. Accessed October 10th 2017. A dozen letters were obtained by BBC One’s Panorama, sent by the All-Party Parliamentary Fire Safety and Rescue Group, to Government ministers warning post the Lakanal House fire.

³³ DCLG (2017) ‘Fixing our broken housing market’ p. 6., <https://www.gov.uk/government/publications/fixing-our-broken-housing-market>. Accessed 12th September 2017.

³⁴ National Fire Chiefs Council (2017) https://www.nationalfirechiefs.org.uk/.../NFCC_chair_blog_NFCC_Conference.pdf. Accessed 22nd September 2017.

³⁵ BBC news, ‘Four ministers were warned about tower block fire risks’ (21 June 2017) <http://www.bbc.co.uk/news/uk-40330789>. Accessed October 10th 2017. A dozen letters were obtained by BBC One’s Panorama, sent by the All-Party Parliamentary Fire Safety and Rescue Group, to Government ministers warning post the Lakanal House fire.

4. The greater risks of CO poisoning to low income households

The public perception that poorer people are more vulnerable to health and safety risks is evidenced by recent research into CO poisoning. Research carried out by Dr Andy Shaw from Liverpool John Moores University, which looked at the data collected by the fire and rescue services from the West Midlands and Merseyside, found that deprived areas were less likely to own an audible CO alarm than homes in non-deprived areas³⁶.

This has been supported by research carried out by National Energy Action (NEA), a fuel poverty charity, and the Gas Safety Trust (GST), who interviewed 90 low-income and vulnerable households about their heating and cooking appliances, including testing carbon monoxide levels in the home. They found that 35% of properties exceeded the 10ppm (the threshold at which prolonged exposure can have adverse effects on the body and brain). Working-age households, which suffer from the highest fuel poverty rates in England, recorded the greatest number of spikes in CO levels.

Protecting the most vulnerable households in England should be a priority outcome from DCLG's review of the Smoke and Carbon Monoxide Alarm (England) Regulations 2015.

Our recommendation for urgent action by the Government is therefore focussed on extending the 2015 regulations (which cover private rented property) so that there is a legal requirement for CO alarms to be fitted to all private rented properties with any fuel-burning appliance.

We further recommend that this critical first step be considered for wider application in England when the Building Regulations 2010 are reviewed, with a view to:

- i. Requiring all landlords in England (and Wales) to install CO alarms in all private and public rented sector properties that contain a fuel burning appliance of any kind, including social housing³⁷.
- ii. Requiring the installation of CO alarms in all properties including owner-occupied properties.

FINDING 6: Those living in low income households are most at risk of CO poisoning, notably those renting in the private sector.

³⁶ Kokkarinen N, Shaw A, Cullen J, Pedrola MO, Mason A, Al-Shamma A A. (2014) 'Investigation of audible carbon monoxide alarm ownership: Case study Smart and Sustainable Built Environment' 3:72-86.

³⁷ All-Party Parliamentary Carbon Monoxide Group (2017) 'Carbon monoxide poisoning: saving lives, advancing treatment', Recommendation 2.

Conclusions

The Government is understandably concerned about potentially increasing the regulatory and cost burdens on businesses. However, practical experience since the change in the regulations in 2010 and 2015, requiring private landlords to install CO alarms only where a solid fuel appliance is fitted, has shown that these restricted regulations have introduced confusion. Furthermore, technological developments in the design of alarms mean the financial cost of extending the regulations to apply wherever a fuel-burning appliance is installed is now significantly lower.

Given the significant risks from CO poisoning, most recently documented in *Carbon monoxide poisoning: saving lives, advancing treatment*³⁸, there is firm agreement across the sector, including from landlords and the gas and solid fuel industries, that the regulations should be extended in this way. This will help deliver the Government's commitments on protecting tenants, especially the most vulnerable households and those in fuel poverty. It will have a positive effect on the one in five families that live in private rented accommodation.

This report is intended to contribute to the forthcoming consultation on the 2015 regulations, and to provide the basis for a revised cost-benefit analysis, allowing the Government to amend the regulations to require - as a priority first step - CO alarms to be fitted and maintained by landlords in the private rented sector wherever any fuel-burning appliance is installed. The contributors to this report urge the Government to act decisively on these findings and recommendations, thereby making the commendable intent of the 2017 White Paper a reality.

³⁸ All-Party Parliamentary Carbon Monoxide Group (2017) 'Carbon monoxide poisoning: saving lives, advancing treatment', Recommendation 2.

GLOSSARY & ABBREVIATIONS

APPCOG	All-Party Parliamentary Group on Carbon Monoxide
CO	Carbon Monoxide
CoGDEM	Council of Gas Detection and Environmental Monitoring
DCLG	Department for Communities and Local Government
GSR	Gas Safe Register
ED	Emergency Department
GST	Gas Safety Trust
NEA	National Energy Action
NLA	National Landlords Association
PPM	Parts per million
SLA	Scottish Association of Landlords

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About the APPCOG Stakeholder Forum

Formerly known as the Carbon Monoxide All Fuels Action Forum, the APPCOG Stakeholder Forum (the Forum) is a coalition of energy industry representatives, healthcare professionals, researchers, campaigners, and others committed to tackling CO poisoning in the UK. It is a leading, cross-party forum for Parliamentarians to discover, discuss and promote ways of tackling CO poisoning in the UK alongside the All-Party Parliamentary Carbon Monoxide Group.

The Forum promotes collaboration and knowledge sharing between industry, charities, parliamentarians and policymakers, as well as coordinating awareness-raising campaign activities across the sector. It provides a platform for key stakeholders to inform and influence public policymaking, improve safety standards, develop effective regulation, raise public awareness and, ultimately, help eradicate CO poisoning in the UK.

The Forum is administered by Policy Connect. Policy Connect is the collaborative, go-to cross-party think tank, successfully delivering new policy ideas through research, evidence, political meetings and sector engagement. With no set ideology, we recommend the best approach from facts and data, and help influence policy decisions and law-making.

We find the common ground and build consensus to improve public policy. We do this by running forums, commissions and All-Party Parliamentary Groups. We have overseen the research and delivery of more than 50 key publications.

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