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# ENERGY POVERTY AND FIRE RISK

Technical Report · November 2022

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The background of the central section is a photograph of a person's hands, appearing to be of an older individual, reaching out towards a radiator. The radiator has a metal mesh cover. The entire image is overlaid with a semi-transparent blue filter. The text "REPORT ENERGY POVERTY AND FIRE RISK" is written in large, white, bold, sans-serif capital letters across the center of the image.

REPORT  
ENERGY POVERTY  
AND FIRE RISK

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## ABOUT FEEDS

The Forum for European Electrical Domestic Safety (FEEDS) is a think-tank and a do-tank that brings together organisations aiming to improve electrical safety in dwellings.

The Forum aims to contribute to a safe, just and ambitious Energy Transition mainly focused on electrification by:



Providing harmonized data on domestic fires from an electrical source at European level and contributing to improve data collection in each country,



Promoting proven solutions at European level to reduce fires from electrical source in dwellings,



Putting electrical safety as a pre-requisite to deep renovation towards zero emission buildings, considering the increasing role of electrification (clean heating, decentralised production, e-mobility, energy storage) and the situation of the building stock with 132 million dwellings across Europe having obsolete electrical installations.



Drawing attention to all policy levels on the close connection between energy poverty and electrical safety for vulnerable communities,



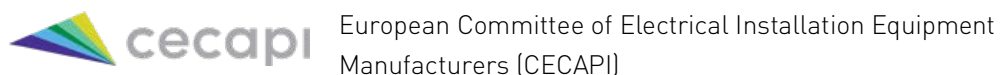
Participating in the achievement of the Green Deal targets.

The results of the work of the FEEDS Forum are available to all stakeholders involved in household electrical safety in Europe. Stakeholders are free to make use of it to support their case and facilitate action in the different Member States of the European Union.

## FEEDS MEMBERS



## European organizations



European Committee of Electrical Installation Equipment Manufacturers (CECAPI)



Europacable



European Association of Electrical Contractors (EuropeOn)



European Copper Institute (ECI)



European Fires Safety Alliance (EuroFSA)



Federation of the European Union Fire Officer Associations



International Federation for the Safety of Electricity Users



Insurance Europe – Prevention Forum



## National organizations



Confédération Nationale du Logement (CNL – France)



Electrical Safety First - The UK's Electrical Safety Experts (ESF – United Kingdom)



Groupe de Réflexion sur la Sécurité Electrique dans le Logement (GRESEL – France)



Dutch Burns Foundation (NBS – Netherlands)

## 1. INTRODUCTION

Energy poverty is a multi-dimensional phenomenon, caused by a combination of low-income, high-energy expenses, and poor efficiency of housing, effecting 34 million Europeans (Energy Poverty Advisory Hub).

In the sphere of Fire Safety, there is an opinion that the people living in energy poverty face a greater fire risk and so are exposed to a double penalty.

There is very little research on this topic.

The data regarding the link between fire safety and energy poverty is in development. As a consequence, FEEDS decided to undertake research with associations working in energy poverty.

This research started in April and closed in June 2022 by mail with an online questionnaire.

We have received 27 responses covering 13 countries which is considered to be representative.

### COUNTRIES PARTICIPATING IN THIS RESEARCH

Austria, Belgium, France, Greece, Hungary, Ireland, Italy, The Netherlands, Portugal, Spain, United Kingdom, Serbia, North Macedonia

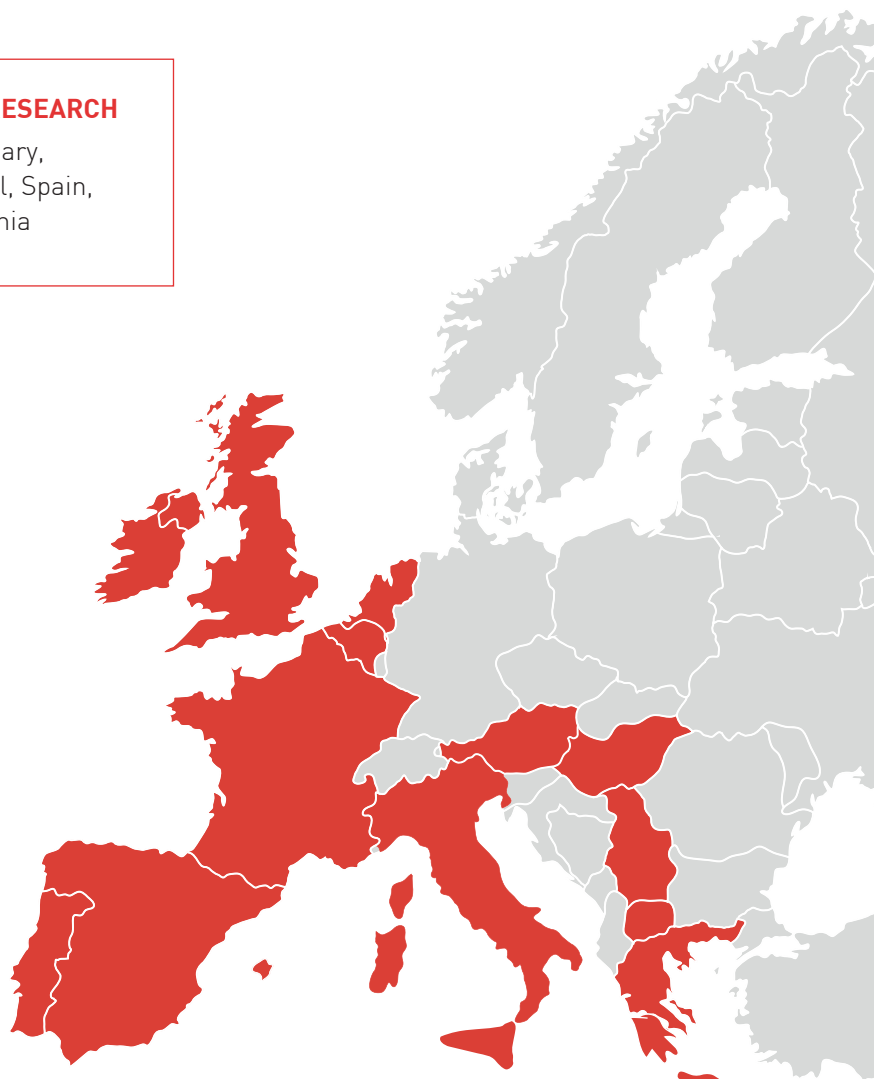


**“All legislation concerning building renovation and standards for new builds should address fire safety and risks related to intense seismic activity to keep citizens safe.**

**75% of EU buildings are deemed energy inefficient, energy poverty is a reality for at least 34 million Europeans. Our poorest live in the leakiest and, often, least fire safe housing. 132 million domestic electrical installations are obsolete. The Renovation Wave must secure decent, energy efficient and fire safe housing for every European.**











**Our poorest citizens should not have to endure the double exposure of having to choose between eating or heating or cooling their homes and living in conditions that are hazardous to fire.”**

Theresa GRIFFIN, FEEDS Chair



## 2. ANALYSIS OF THE REPLIES

The questionnaire structure was as follows:

	<b>Q1</b> Please specify your country/region/city
	<b>Q2</b> In your country/region/city, do you think that people affected by energy poverty are more exposed to fire risk than the rest of the population?
	<b>Q3</b> Do you have research, studies, references to share on the relation between people in vulnerable circumstances and fire risk (If yes, please indicate links or references to the documents)?
	<b>Q4</b> Do you want to receive existing research, studies, references on that topic?
	<b>Q5</b> In your country/region/city, when a renovation starts to tackle energy poverty, are fire prevention measures included?
	<b>Q6</b> Do those measures include the following elements: Smoke alarm Electrical safety check Electrical installation upgrade Gas safety check Evacuation plan Sprinkler Other
	<b>Q7</b> Do you think that the data on energy poverty and fires are correlated?
	<b>Q8</b> What type of measures would be the most efficient to improve fire safety of households at risk of energy poverty?
	<b>Q9</b> How can we protect vulnerable segments from facing a double penalty of energy poverty and the risk of fire?
	<b>Q10</b> Please add anything you think useful to complete your answers

Question 6, including multiple choices, will be analysed in section 3 and the three last questions (8, 9 and 10), including comments, will be analysed in section 4.





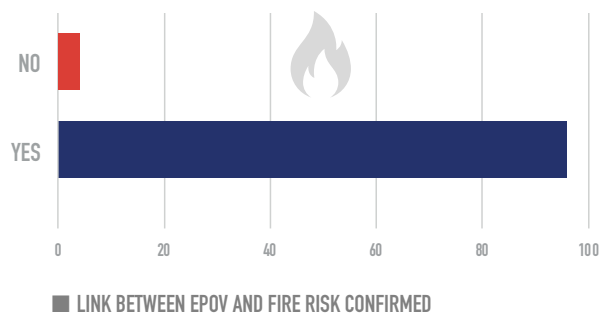
## 2.1 PLEASE SPECIFY YOUR COUNTRY/REGION/CITY

It's important to note that a lot of associations are working at the local level with sometimes a coordination at national level or EU level. For example in France: Fondation Abbé Pierre (Abbé Pierre Foundation), SOLIDAIRE pour l'HABITAT – SOLIHA (Solidarity for Housing) in various regions, Marins Pompiers de la Ville de Marseille (Marine Firefighters of the City of Marseille)

## 2.2 IN YOUR COUNTRY/REGION/CITY, DO YOU THINK THAT PEOPLE AFFECTED BY ENERGY POVERTY ARE MORE EXPOSED TO FIRE RISK THAN THE REST OF THE POPULATION?

**95%** of the respondents replied yes.

This demonstrates clearly that actors in field of energy poverty (EPOV) consider that people living in energy poverty are more exposed to fire risks. Thus, corrective measures considering the complexity of the situation have to be taken at all levels of decision-making.



## 2.3 DO YOU HAVE RESEARCH, STUDIES, REFERENCES TO SHARE ON THE RELATION BETWEEN PEOPLE IN VULNERABLE CIRCUMSTANCES AND FIRE RISKS?

The replies are in Annex 2, 13 mentions of documents. The lack of information is clear, local or anecdotal. It seems that no robust research regarding the topic at European level exists.

## 2.4 DO YOU WANT TO RECEIVE EXISTING RESEARCH, STUDIES, REFERENCES ON THAT TOPIC?

**81%** of the participants want to receive more information concerning this topic.

The conclusion is that research has to be promoted and if possible, coordinated at the European level (EU shall set up a frame work).

## 2.5 IN YOUR COUNTRY/REGION/CITY, WHEN A RENOVATION STARTS TO TACKLE ENERGY POVERTY, ARE FIRE PREVENTION MEASURES INCLUDED?

**15%** of respondents said 'no'. Whereas, according to question 2.2, **95%** consider that people affected by energy poverty are more exposed to fire risk than the rest of the population. This means that **10%** of respondents are aware of the situation but they are not able to manage this risk.

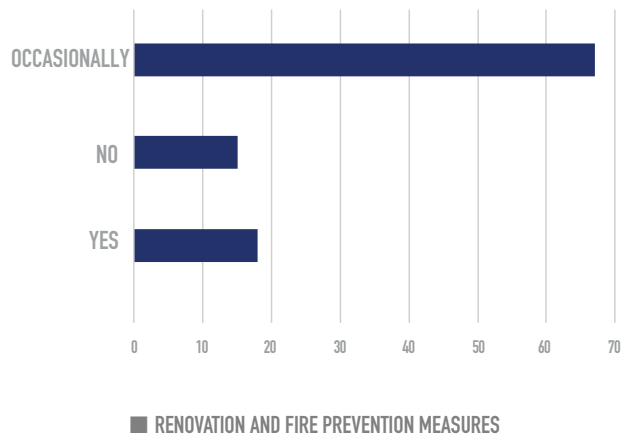


Reasons invoked are:

- No budget available
- No regulations
- Lack of information
- Not in the scope of the association/actor.

**67%** of respondents said 'occasionally'. This confirms that adapted regulation and adequate finance is needed if the EU wants to avoid the double penalty (energy poverty and fire risk) and leaving a lot of citizens behind.

**18%** of respondents said 'yes', showing that some initiatives are systematically addressing energy poverty and fire safety simultaneously. There is an opportunity to collect and share best practice at a European level.



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## 2.6 DO THOSE MEASURES INCLUDE THE FOLLOWING ELEMENTS?

This question, including multiple choices, is analysed in detail in Section 3.

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## 2.7 DO YOU THINK THAT THE DATA ON ENERGY POVERTY AND FIRE ARE CORRELATED?

**70%** of the participants replied that the data on energy poverty and fire are correlated (or have a mutual relationship or connection, in which one thing affects or depends on the other), in the sense of mutual correlation. This reinforces the need for more detailed data, not only the numbers of fires, but also how this is linked to social circumstances and energy poverty.

The need of coordinated data/statistics at EU level to the local one (cities or neighbourhoods) is confirmed.

At this time, there is no national, or European data regarding this issue, responders based contribution on local information (e.g., Fire Brigade, local research).

### 3. RESULTS OF THE MULTIPLE-CHOICE REPLIES

#### 3.1 GLOBAL ANALYSIS OF MULTI-CHOICE QUESTION 6

**Question 6: Do those measures (of fire prevention) include the following elements:**



The items listed into the multiple-choice are the main building-related fire safety measures recommended by fire brigades. For the replies 'yes' (**18%**) and 'occasionally' (**67%**) to question 5 (In your country/region/city, when a renovation starts to tackle energy poverty, are fire prevention measures included? §2.5) the results are as follows:

A reasonable number of replies included the gas safety check (**52%**), this finding should be related to the fact that this check is mandatory in a large number of European countries.

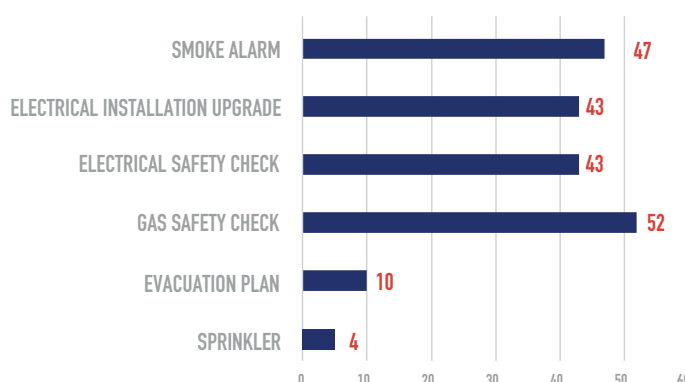
The number reached for smoke alarm (**47%**) is relatively low if we consider that this measure is already mandatory in some countries in the EU.

The replies regarding the inspection of electrical installation (**43%**) and their upgrade (**43%**) are interesting because 100% of respondents having answering yes to 'electrical safety check' have replied yes to 'electrical installation upgrade'. It means that people active in the field know by experience that after an inspection of an electrical installation an upgrade is systematically necessary for people living in poor conditions.

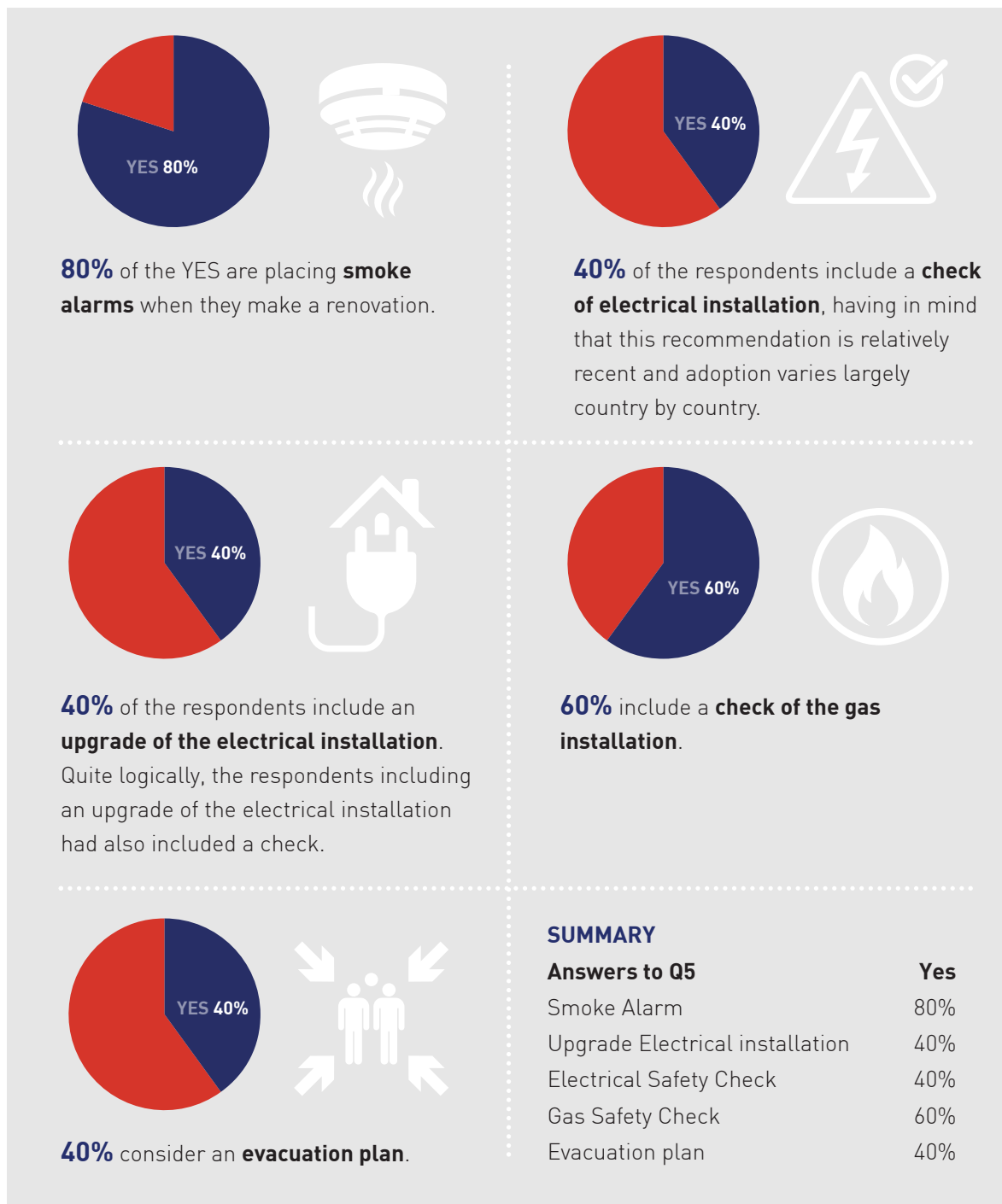
But this means also that for **57%** of respondents, renovations aiming to address energy poverty do not include a check or upgrade of the electrical installation. Considering the likelihood of obsolete electrical installation in dwellings, it means that renovations aiming to alleviate energy poverty may leave occupants with potentially unsafe electrical installation. This can be even more of a concern when the renovation includes the addition of some electrical equipment such as photovoltaic panels or heat pumps.

Overall, despite the recognition of a higher fire risk, the building related fire safety measures recommended by fire services are far from being systematically included into renovations aiming to alleviate energy poverty.

While defining an evacuation plan for occupants is a key recommendation of fire brigades, it is rarely considered in this context. Despite not proposed by respondents in the 'other' category, the check and maintenance of chimneys and the installation of fire safety equipments such as fire extinguishers and fire blankets, are also measures often recommended by fire brigades (see Annex 3)."



### 3.2 FOR THE REPLIES YES (18%) ONLY, THE RESPONSES ARE AS FOLLOW



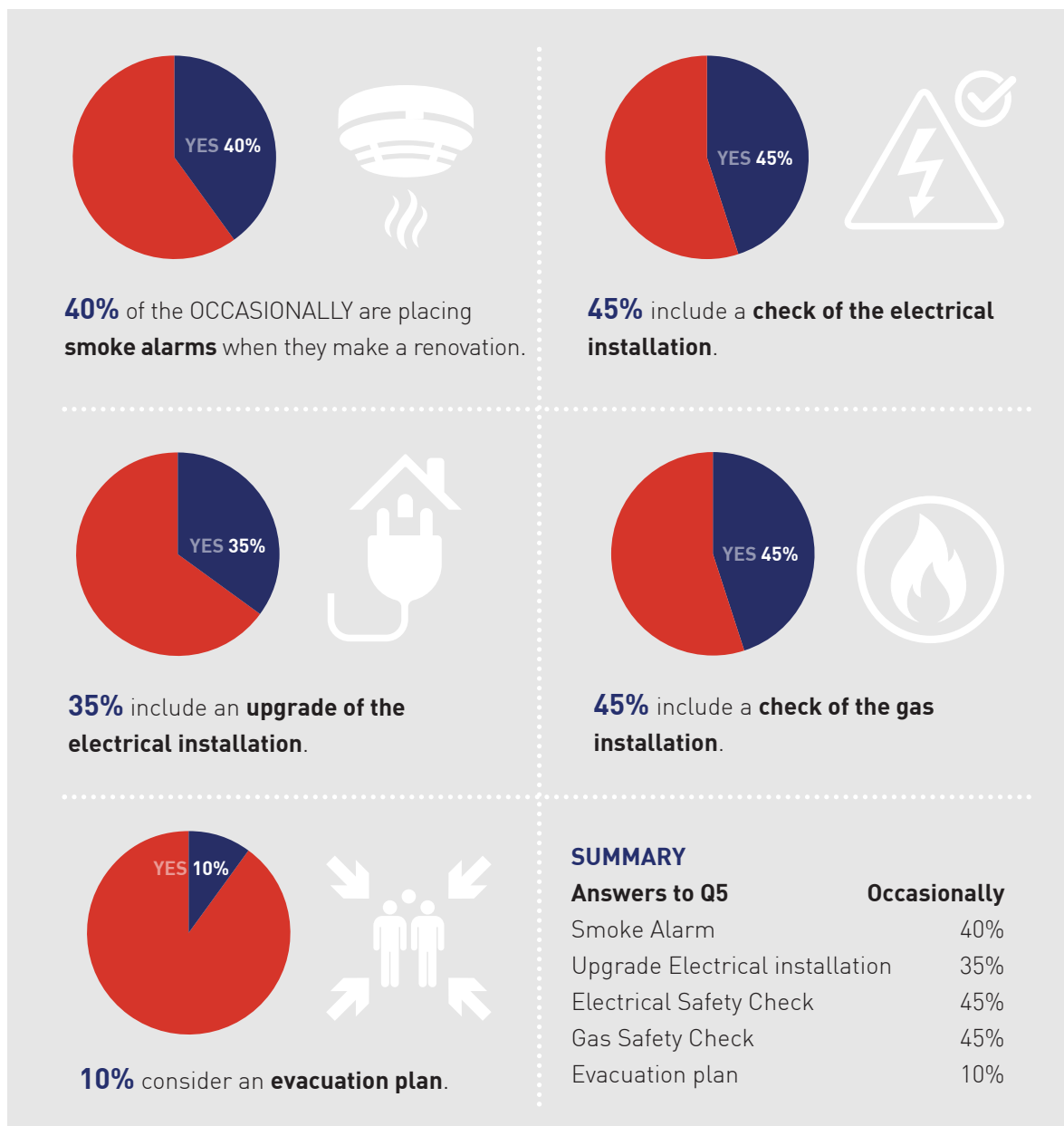
## CONCLUSIONS

Installation of smoke alarms is largely implemented,

**40%** of respondents include check of the electrical installation, and **60%** the check of the gas installation. The danger of gas is better considered than electricity. We know that **50%** of the accidental domestic fires have an electrical source (Ref. <https://www.feedsnet.org/>)

All the **40%** of respondents who ticked the check of the electrical installation ticked also the upgrade of electrical installation demonstrating that issues with electricity look systematic in energy poverty situations.

### 3.3 FOR THE REPLIES OCCASIONALLY (67%) ONLY, THE RESPONSES ARE AS FOLLOW



Respondents 'occasionally' addressing fire safety are implementing some of the recommended fire safety measures without clear systematic approach.

The figures are encouraging but not sufficient.

The real problem is in the concept of "occasionally = lottery". So, after renovation by a trusted association the citizen has no guarantee regarding the safety.

While building renovation is the best structural measure to address energy poverty, a more systematic consideration of the fire risk should be encouraged to offer safe and decent housing.

## 4. COMMENTS RECEIVED

### 4.1 ANSWERS TO Q8. WHAT TYPE OF MEASURES WOULD BE THE MOST EFFICIENT TO IMPROVE FIRE SAFETY OF HOUSEHOLDS AT RISK OF ENERGY POVERTY?

Tightening the fire safety standards in the Building Regulations and banning the use of flammable materials more successfully, in refurbishments as well as new build. Having policies that target energy efficiency improvements to fuel poor homes. For instance, post Grenfell, the flammable panels are being removed (far too slowly) and replaced with safer panels without upgrading the standard of energy efficiency and integrity of the building. A travesty as the scaffolding on the high-rise building is there. An end to all disconnections for energy debt – going to be increasingly important with the present energy crisis

*Dr. Brenda BOARDMAN, Emeritus Fellow, Environmental Change Institute, University of Oxford*

Special technical assistance, help and premium to divest insurers' money towards retrofitting

*Marine CORNELIS, Next Energy Consumer*

Increase salaries & housing benefits

*Anonymous*

Mise aux normes du système électrique (Upgrading of the electrical system)

*Anonymous*

Identification of the risks, financial schemes

*Patricia Benchenna, Schneider Electric*

Electrical installation upgrade and replacement of old energy appliances

*Catarina PEREIRA, Coopénico*

Appropriate thermal energy systems. Updating of the electrical installations to current standards.

*Fernando MARTIN CONSUGERA, Instituto Edouardo Tooraja de ciencias de la construccion*

Ensuring minimum access to heat via vouchers or minimum kWh to avoid people taking extreme measures to keep warm, e.g., using improvised candle heaters, burning scrap wood. In general, recognising the connection between deprivation and "informal" energy practices, bypassing mains meters, etc., could lead to effective policies to address both energy poverty and fire safety

*Harriet THOMSON, University of Birmingham*

Getting rid of old gas heaters

*Anonymous*

Sprinkler, smoke alarm

*Ilektra MANCINI*

Electrical installation upgrade home heating equipment safety

*Anonymous*

La première mesure que nous menons au niveau de la Ville est de faire un travail de médiation chez l'habitant pour repérer dans les familles en précarité énergétique, les problèmes relatifs à la sécurité des installations gaz et électriques. Ces actions sont menées par GRDF (civigaz) et le bataillon des marins pompiers. (The first measure that we are carrying out at the City level is to do mediation work in the inhabitant's home to identify problems relating to the safety of gas and electrical installations in families in energy poverty. These actions are carried out by GRDF (civigaz) and the battalion of marine firefighters)

*Sébastien BARLES, adjoint au maire de Marseille*

Use nonflammable insulation and other materials in retrofit solutions

*Tom WOOLEY, Ecological Design Association, NI*

Free smoke alarm from local fire brigade (<https://www.london-fire.gov.uk/safety/the-home/home-fire-safety-visits/>)

*Anonymous*

Fire risks concentrate in households irregularly connected to the electricity grid. Because of their informal housing arrangements (no property deed or proper rent/lease contract) results in electricity suppliers denying a proper electricity supply contract. Tens of thousands of people in Spain are likely living under such circumstances

*Anonymous*

Education and the topics mentioned at Q6

*Anonymous*

Alarms, temperature monitors, guaranteed heating allowance for the vulnerable

*Shane LYONS, Ei Electronics*

Awareness on attitudes when a fire appears

*Marta GARCIA, Ecoserveis Association*

Retrofitting/replacement of electricity and heating devices

*Anonymous*

Involvement of local authorities to map the worst quality of buildings and plan measures. Energy disconnection ban

*Ana STOJILOVSKA, Center for Social Sciences, Hungary*

Wiring improvement and electric cooking instead of natural gas

*Anonymous*

Smoke alarm

*Revert*

If a full renovation starts, it must meet the fire + elec + gas regulations. If it is just an upgrade to a better BER cert (Building Energy Rating Certificate) it probably doesn't. Evacuation plans have been mandatory for years. HMO (House in Multiple Occupation) must have a mains fire alarm system.

*Anonymous*

Support from the specialized units and information campaigns

*Iris ALEXE, EAPN Romania*

## 4.2 ANSWERS TO Q9. HOW CAN WE PROTECT VULNERABLE SEGMENTS FROM FACING A DOUBLE PENALTY OF ENERGY POVERTY AND THE RISK OF FIRE?

Ensuring one's home should be mandatory, for both owner-occupiers, tenants AND landlords. Energy poverty and poor household conditions should be considered a RISK (safety, health, climate) to be assessed by insurance companies, and therefore families should receive special technical assistance, help and premium to divest insurers' money towards retrofitting

*Marine CORNELIS, Next Energy Consumer*

With actions against poverty - and segments of this: house, work, etc.

*Anonymous*

By proposing specific schemes

*Patricia BENCHEMMA, Schneider Electric*

Gratuité de l'expertise et financement pour les travaux dédiés peu éligibles jusqu'alors. (Free expertise and financing for dedicated work that has not previously been eligible)

*Anonymous*

Through the inclusion of facility improvement programs in energy rehabilitation subsidies

*Fernando MARTIN CONSUGERA, Instituto Edouardo Tooraja de ciencias de la construccion*

Regular gas safety check (installation and equipment), increasing the household energy efficiency and electrical installation upgrade, as we are quite addicted on energy devices

*Catarina PEREIRA, Coopénico*

Require the electrical diagnosis and the Energy Performance Diagnosis

*Loïc DEBRAY, SOLIHA JURA*

As noted above, ensuring minimum access standards as a first emergency measure, and thereafter focusing efforts on addressing housing quality with deep retrofits

*Harriet THOMSON, University of Blrmingham*

Mass Energy renovation action

*Ilktra MANCINI*

Implement additional financing mechanism and instruments to help low-income households overcome the investment barrier. Energy efficiency policies could be more addressed to the problems low-income householder face

*Anonymous*

Good idea to link the renovation to taking fire safety measures

*Anonymous*



En couplant les travaux de rénovation avec ceux de sécurisation du bâti et des réseaux énergétiques (By coupling renovation work that of securing buildings and energy network (domestic))

*Sébastien BARLES, adjoint au maire ville de Marseille*

Better education of professionals and builders and energy poverty "experts"

*Tom WOOLLEY, Ecological Design Association, NI*

Enable legal electricity supply contracts and ban disconnections for households in irregular housing or unable to pay

*Anonymous*

Raising awareness is essential as some deaths of fire are reported for not knowing how to act

*Marta GARCIA, Ecoserveis Association*

Better fire safety regulation, financial support for the vulnerable to ensure minimum level of heating is guaranteed, renovate to ensure correct level of insulation and minimize risk of fire or harm

*Shana LYONS, Ei Electronics*

Including Electrical and gas installation upgrade in building retrofitting interventions and raising their risk awareness with information campaigns. Energy disconnection ban, utility-based and social center-based help/information centers

*Anonymous*

Energy disconnection ban, utility-based and social center-based help/ information centres

*Ana STOJLOVSKA, Center for Social Sciences, Hungary*

Calibrating incentives to the degree of vulnerability (measured by income, share of energy expenditure, structural and energy status of the building)

*Anonymous*

Information / prevention

*Revert*

Deep renovation and refurbishment

*Anonymous*

More information and resources available

*Iris ALEXE, EAPN Romania*

### 4.3 ANSWERS TO Q10 PLEASE ADD ANYTHING YOU THINK USEFUL TO COMPLETE YOUR ANSWERS

Too many homes are unsafe for other reasons, e.g., poorly lit stairs, which create a risk of falling down. In the UK, the Housing, Health and Safety Rating Scheme (HHSRS) is an excellent set of standards to avoid problems. It is a duty on local authorities to implement this standard, but many do not, because of financial constraints. It would take one Government edict to re-inforce this duty and activate every local authority

*Dr. Brenda BOARDMAN, Emeritus Fellow, Environmental Change Institute, University of Oxford*

Energy poverty needs to be assessed globally. Many people in vulnerable circumstances can't purchase more recent/fireproof appliances and rely on creative albeit dangerous solutions to cope with their situation. I'm strongly in favour of a right to repair, but there should also be a right to replace...

*Marine CORNELIS, Next Energy Consumer*

The problem of energy poverty is almost a problem of poverty. And I'm afraid that the problem of energy poverty focus actions on technical approaches without act on poverty.

*Anonymous*

I'm fairly certain that bad quality of housing and fire hazards go hand in hand. We also see that there are many elderly people that live in energy poverty. They cook on natural gas and fires ensue due to through forgetfulness

*Anonymous*

European countries need fundings for residential energy efficiency renovations

Sorry that my response is not very helpful to you as I have no expertise in the area of fire and electrical safety. However, I will be very interested to learn more and to report on your findings for the COLD@HOME website ([www.coldathome.today](http://www.coldathome.today))

In my understanding fire risk could be another consequence of energy poverty, such as winter excess death is

*Ana STOJILOVSKA, Center for Social Sciences, Hungary*

### 4.3 KEY POINTS

From the comments, we can extract the following elements:

- Need for information, awareness, education
- Prevention is key
- Deep renovation
- Ban energy disconnection (a case of a death is documented in Spain after disconnection of electricity and the use of candles for lighting)
- Importance of local authorities as key actors
- Better regulation
- Renovation has to include energy, fire electricity and gas as a whole
- Importance of Fire Brigades
- Education of the professional
- Key importance of financial support to energy poor citizens
- Implications for owners, tenants (public and private) and occupants

## 5. CONCLUSIONS

The link between fire safety and energy poverty is supported but there is a lack of data and good practice.

With the objective of "leaving no one behind", it must be acknowledged that energy poverty is often related to inadequate housing conditions that not only have poor energy performance but are also likely to be in bad condition for other aspects such as fire risks.

As fire discriminates, we strongly encourage a more consistent approach to integrate fire safety considerations into initiatives addressing energy poverty and energy efficiency, or more generally to address inadequate housing from all angles, including energy and safety. This could be done by connecting energy poverty professionals with fire safety professionals such as fire brigades.

Data should be collated in a harmonized model at EU level and the introduction of fire safety measures must be included in the energy poverty Advisory Hub.

Regarding best practice,

- The basics of the management of fire (smoke alarm and evacuation plan) need to be strongly promoted
- There should be mandatory and free gas and electrical checks before all renovations
- The gas or electrical upgrades will to be integrated into energy renovation support, both financially (subsidies) and technically (one-stop-shops and other technical assistance).

For the renovation practitioner, there is a need for standardized training in fire risk, to include fire safety in their documentation and gas and electricity installation checks by an industry expert. The development of cross European fire safety checks recommendations would also be a way to better equip energy poverty professionals to address this issue.

There should be a forum established for regular exchanges.

Sustainable Development Goal SDG 7, "access to sustainable, safe, efficient and affordable", is not applying validly for people in energy poverty.

It's encouraging to see the European Parliament taking actions to address this important issue.

### **Amendments adopted by the European Parliament on 22 June 2022 on the proposal for a regulation of the European Parliament and of the Council establishing a Social Climate Fund:**

#### **AMENDMENT 53**

#### **ARTICLE 2 – PARAGRAPH 1 – POINT 1**

(1) 'building renovation' means any kind of energy-related building renovation and accompanying **safety measures**, including by contributing to the renovation requirements established in Directive .../... [on the energy performance of buildings (recast)]

[2021/0426(COD)], aimed to reduce the building's energy consumption, including: the insulation of the building envelope, that is to say walls, roof, floor, the replacement of windows; passive ventilation; the installation of heat pumps and cooling systems; the replacement of heating, cooling and cooking appliances; **the upgrade of electrical installations** and the installation of on-site production of energy from renewable sources, heat recuperation systems or the connection to nearby systems using energy and storage from renewablesources;

#### **AMENDMENT 62**

##### **ARTICLE 3 – PARAGRAPH 3 – POINT A**

(a) finance measures and investments to increase energy efficiency of buildings, to implement energy efficiency improvement measures, to carry out building renovation and **accompanying safety measures, where appropriate in combination with improvements in line with fire and seismic safety standards**, and to decarbonise heating and cooling of buildings, including the integration of energy production and storage of energy from renewable sources in accordance with Article 6.

#### **European Parliament resolution of 15 December 2021 on the implementation of the Energy Performance of Buildings Directive (2021/2077(INI):**

**[https://www.europarl.europa.eu/doceo/document/TA-9-2021-0503\\_EN.pdf](https://www.europarl.europa.eu/doceo/document/TA-9-2021-0503_EN.pdf)**:

The European Parliament:

16. Believes that renovations and standards for new builds should address fire safety and risks related to intense seismic activity, which affect the energy efficiency and the lifetime of buildings, as well as with high health standards; **calls on Member States to develop an electrical inspection regime, since 30 % of domestic and 50 % of domestic accidental fires have an electrical source\***; **believes that the European building stock renovation should integrate electrical safety checks and upgrades** and ensure sufficient ventilation for smoke in case of fire; underlines that LTRs should also contribute to the static and structural reinforcement of the building stock;

\* Forum for European Electrical Domestic Safety



# ANNEX 1

## QUESTIONNAIRE

https://docs.google.com/forms/d/1eaNM1N0SIImrWzkymO6yiZ9hg2I7kM2fC9\_kzZfz7TXk/prefill



### The EU Green Deal will help to ensure a safe and inclusive transition. Alleviating energy poverty is part of the challenge and is closely related to electrical safety.

Fire safety is a concern for all European citizens. We all want our families and constituents to live in a comfortable and safe place.

The Forum for European Electrical Domestic Safety (FEEDS, <https://www.feedsnet.org/>) and its members, comprising firefighters' organisations (EuroFSA, FEU), The Dutch Burns Foundation and professional organisations, are supporting work on fire safety and electrical safety. Our findings are demonstrating a strong link between fire safety and energy poverty (EPOV): the poorest live in the leakiest and least fire safe buildings.

For instance, the most degraded houses are the most likely to have obsolete electrical installations that can be a fire risk. FEEDS has demonstrated that 30% of domestic fires and 50% of domestic accidental fires have an electrical source and that around 132 million European dwellings have obsolete electrical installations, this represents half of the building stock where vulnerable people in energy poverty are potentially living.

As fire discriminates, we strongly encourage a more consistent approach to link initiatives addressing energy poverty and energy efficiency to initiatives to make households fire safe.

#### Energy poverty in the EU

According to the European Commission ([https://energy.ec.europa.eu/topics/markets-and-consumers/energy-consumer-rights/energy-poverty\\_en](https://energy.ec.europa.eu/topics/markets-and-consumers/energy-consumer-rights/energy-poverty_en)), about 34 million Europeans reported an inability to keep their homes adequately warm in 2018, and 6.9% of the EU population have said that they cannot afford to heat their home sufficiently in a 2019 EU-wide survey (<https://ec.europa.eu/eurostat/en/web/products-eurostat-news/-/ddn-20210106-17redirect/eurostat/en/news/whats-new>). Energy poverty therefore remains a major challenge and lifting vulnerable citizens out of it is an urgent task for the EU and Member States.

Energy poverty results from a combination of low income, high expenditure of disposable income on energy and poor energy efficiency, especially as regards the performance of buildings. People in inefficient buildings are more exposed to the impacts of climate change, high energy costs and to inadequate comfort and sanitary conditions in housing and work environments.

For decades, the EU has been facing an acute and persistent housing affordability challenge with an alarming number of Europeans being unable to afford rents or cover basic housing costs. Given the wide range of socioeconomic factors surrounding general poverty, and challenges around housing tenure systems, the issue calls for a multi-faceted approach.

#### Questionnaire

We would be delighted if you would take the time to complete this questionnaire to help us in our research for data in this field (closing date for responses by the end of June). FEEDS and its members will edit a report based on your input. It will be shared with contributors and presented at the Fire Information Exchange Platform (FIEP) which was established by the European Commission following the Grenfell fire disaster in the UK and during the 2022 European Fire Safety Week. With the minimum of effort, we can protect thousands of vulnerable people in Europe against fire, your help is crucial and highly appreciated.

Q1. Please specify your country/region/city:

\_\_\_\_\_

Q2. In your country/region/city, do you think that people affected by energy poverty are more exposed to fire risk than the rest of the population?

- YES
- NO

Q3. Do you have research, studies, references to share on the relation between people in vulnerable circumstances and fire risk (if yes, please indicate links or references to the documents)?

\_\_\_\_\_

Q4. Do you want to receive existing research, studies, references on that topic?

- YES
- NO

Q5. In your country/region/city, when a renovation starts to tackle energy poverty, are fire prevention measures included?

- YES
- NO
- Occasionally

Q6. Do those measures include the following elements:

- Smoke alarm
- Electrical installation upgrade
- Electrical safety check
- Gas safety check
- Evacuation plan
- Sprinkler
- Other

If you ticked 'Other' at Q6, please elaborate:

\_\_\_\_\_

Q7. Do you think that data on energy poverty and fires are correlated?

- YES
- NO

Q8. What type of measures would be the most efficient to improve fire safety of households at risk of energy poverty?

\_\_\_\_\_

Q9. How can we protect vulnerable segments from facing a double penalty of energy poverty and the risk of fire?

\_\_\_\_\_

Q10. Please add anything you think useful to complete your answers

\_\_\_\_\_

Your details (Please specify your organisation as well as your name, surname, email)

\_\_\_\_\_

Please indicate if you or your organisation agree to be mentioned into the report

- YES
- NO

## ANNEX 2

### DETAILED RESPONSES TO THE QUESTION OF EXISTING DOCUMENTATION

The analysis of the replies clearly demonstrates that there is no national or pan-European report focused on this topic. Data is coming from local sources and energy poverty experts/actors.

1. The Grenfell Fire disaster showed the risks the fuel poor and disadvantaged face.  
See Fuel Poverty Action website and contact Ruth London, the chair. In Transforming the Cold Market, see Chapter 5, p55 etc. this examined the energy penalties of old, inefficient fridges and freezers (cold appliances).  
Did not look at fire risks per se, but old appliances are bound to be more at risk of electronic failure. I think it was a faulty fridge/freezer that caused the Grenfell fire.  
<https://www.eci.ox.ac.uk/research/energy/downloads/decade-transforming.pdf>  
Any household that is disconnected from their energy supply, will be at risk, particularly with electricity, because, for instance, using candles for lighting. There was a well-known case in Spain, with Rosa (?) a pensioner.  
Similar cases in the UK, don't know where they are documented, try National Energy Action. There should be no disconnections for energy debts, instead the household should be given a prepayment meter or a smart meter, so the debt can be repaid slowly, while supply maintained.  
Some countries, Spain (?), do not have prepayment meters. This is a major failing by the utility
2. Yes, but this research, studies, references illustrate the link between unfit habitation and fire risk. The energy poverty is not a physical problem, it's just a situation who link often with unfit habitation.
3. No, only observation
4. Local Fire reports
5. I think that only press releases relate energy poverty and fire risk, usually when there are mortal accidents, for example:  
<https://pobresaenergetica.es/es/2021/11/30/la-pobreza-habitacional-se-perpetua-los-incendios-no-se-paran/>  
[https://www.lasexta.com/noticias/sociedad/la-pobreza-energetica-es-la-culpable-de-seis-de-cada-ocho-muertos-en-incendios-de-viviendas\\_202001085e15ff660cf2a05e0f356380.html](https://www.lasexta.com/noticias/sociedad/la-pobreza-energetica-es-la-culpable-de-seis-de-cada-ocho-muertos-en-incendios-de-viviendas_202001085e15ff660cf2a05e0f356380.html)  
[https://cadenaser.com/emisora/2014/04/10/radio\\_barcelona/1397083447\\_850215.html](https://cadenaser.com/emisora/2014/04/10/radio_barcelona/1397083447_850215.html)
6. A lot of indecent houses have electrical risk
7. I am not aware of formal studies or documents, but have seen various news articles e.g.,  
<https://www.london-fire.gov.uk/news/2013-news/fire-chiefs-express-concern-over-viral-video-of-tealight-flower-pot-heater/>

8. Oui le bataillon des Marins pompiers de la Ville de Marseille a recensé une liaison directe entre précarité énergétique et sécurité des installations électriques et gaz.  
(Yes, the Marine Fire Brigade of the City of Marseille has identified a direct link between energy poverty and the safety of electrical and gas installations.)
9. My book Building Materials, Health and Indoor Air Quality, Routledge Tom Wooley  
ECOLOGICAL DESIGN ASSOCIATION
10. Firefighters in Catalonia have reported about fires linked to irregular connections to the grid, which are a symptom of deep energy poverty and lack of access to affordable housing:  
<https://drive.google.com/file/d/13xXUYqyWQfqsTvYW2eHIDMR44wAFYoVj/view> (not internet)  
<https://www.lavanguardia.com/vida/20190108/454020787283/vecinos-de-badalona-atribuyen-elincendio-de-sant-roc-a-la-pobreza-energetica.html>
11. Human Factors in the Model of Urban Fire Spread in Madrid (Spain) Focused on the Poor Population by Alexis Cantizano et al.  
<https://www.mdpi.com/2071-1050/14/8/4486>
12. Ombudsperson of North Macedonia/ Annual report 2018 (in Macedonian), page 15  
<https://ombudsman.mk/CMS/Upload/NarodenPravobranitel/upload/Godisni%20izvestai/GI-2018/GI2018.pdf>.  
It does not directly link energy poverty to fire risk but mentions that the victim is a socially disadvantaged family without access to electricity and water in an illegal dwelling. This example has been referenced in English in the chapter on North Macedonia here:  
[https://www.routledge.com/Perspectives-on-Energy-Poverty-in-Post-Communist-Europe/Jigla-SineaDubois-Biermann/p/book/9780367430528?fbclid=IwAR1ISJv7lINLsqI2AS\\_UMFyCFGwdQUcSB0uOMnNj5iudSvtAXYyTgT5uV8](https://www.routledge.com/Perspectives-on-Energy-Poverty-in-Post-Communist-Europe/Jigla-SineaDubois-Biermann/p/book/9780367430528?fbclid=IwAR1ISJv7lINLsqI2AS_UMFyCFGwdQUcSB0uOMnNj5iudSvtAXYyTgT5uV8)  
I copy the reference in the book chapter: The Ombudsman's latest report also highlights that the current social protection system does not respond in a timely manner to the needs of citizens at risk, giving the example of a social welfare recipient family in the city of Veles living in an unsafe illegal dwelling where a fire killed three children (Ombudsman, 2019).
13. Studies and cases reported by Fire Departments Romania.



## ANNEX 3

# 10 STEPS TO IMPROVE FIRE SAFETY IN THE HOME ACCORDING TO THE LONDON FIRE BRIGADE

**NOTE:** we are not aware about a European reference document of recommended fire safety check at home. As an example of recommendations, we extracted these recommendations of the London Fire Brigade that is very similar to other local recommendations and indicated the link with the questionnaire.

## 1. FIT A SMOKE ALARM

→ Q6 SMOKE ALARM



Fitting smoke alarms in your home is the simplest step you can take to help prevent tragedies. If the previous owners didn't take theirs, ensure it conforms to British Standard 5446, Part 1 (BS 5446-1), if not buy a new one. Arriving with a couple of smoke alarms just in case is the best policy.

## 2. STORE MATCHES AND ELECTRICAL ITEMS SAFELY ON MOVING DAY

→ Q6 ELECTRICAL SAFETY CHECK



Make sure matches and small electrical items are packed in clearly marked boxes and out of the reach of small children. Cover sockets and install cupboard locks at your new house as soon as possible if you have toddlers. Keep electrical leads away from high traffic areas to avoid trip hazards and remember to unplug appliances at night unless they are designed to remain on, such as freezers.

## 3. CHECK ELECTRICAL APPLIANCES

→ Q6 ELECTRICAL SAFETY CHECK ELECTRIC INSTALLATION UPGRADE



Check socket limits and avoid overloading them, which can lead to overheating and fire hazards. Inspect plugs to ensure the house move has not dislodged wiring. Faulty electrics (appliances, wiring and overloaded sockets) cause around 7,000 house fires across the country every year. All cooker and boiler installations should be carried out by approved by a Gas Safe Registered engineer for your safety, visit [www.gassaferegister.co.uk](http://www.gassaferegister.co.uk) for more details.

## 4. CHOOSE AN ESCAPE ROUTE

→ Q6 EVACUATION PLAN



As a family, select an escape route and make sure everyone knows about it. This is the best way to leave the house if there is a fire: ensure the exit is clear at all times. If doors are double locked at any time everyone should be aware of where the keys are kept.

## 5. KNOW THE BUILDING PROCEDURES

### → Q6 SMOKE ALARM



If you're moving into a block of flats, make sure you are aware of the fire procedures and that any communal fire fighting equipment has been regularly inspected. Investigate escape routes and make sure communal alarms are operating and that evacuation procedures are clear and well-signposted. Check your lease for details, and ask your solicitor for clarification if at all unsure.

## 6. CHECK THE CHIMNEY



Open fires have become more popular in recent years. It can be exciting to use one for the first time but they can be dangerous. Before lighting one ensure that the chimney has been swept. This includes chimneys being used as flues for gas fires, so if in doubt ask a professional. Ask your solicitor for receipts from the seller to show a sweep has been carried out or arrange for one before the winter months come around.

## 7. FIT CARBON MONOXIDE DETECTORS

### → Q6 SMOKE ALARM



Around 50 people a year die from carbon monoxide poisoning due to faulty heating appliances. Carbon monoxide poisoning can result from burning all fossil fuels, not just gas fires and boilers, so you'll need a detector even if you just have an open fire. Check when your boiler or heating appliances were last serviced and consult a professional if in any doubt. Carbon monoxide detectors should comply with British Standard BS 7860. Please remember they are only warning devices and are not a substitute for regular services.

## 8. INVEST IN FIRE SAFETY EQUIPMENT



Fire extinguishers and fire blankets can – and should – be used in the home but it is extremely important you know exactly how to use each one and obtain advice. If they are used inappropriately, they can cause injury.

## 9. DESIGNATE A FIRE ROOM

### → Q6 EVACUATION PLAN



With help from a fire office choose a fire room where you and your family can wait for the fire brigade if you are prevented from escaping from a house fire. The room should be easily visible from the outside and have a connected telephone.

## 10. ARRANGE A FIRE SAFETY CHECK

### → Q6 GAS SAFETY CHECK & ELECTRICAL SAFETY CHECK



Many Fire and Rescue Services offer a fire safety risk assessment for free, an invaluable tool that could end up saving your life. To request a visit go to [www.fireservice.co.uk](http://www.fireservice.co.uk) to locate your local fire service.



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