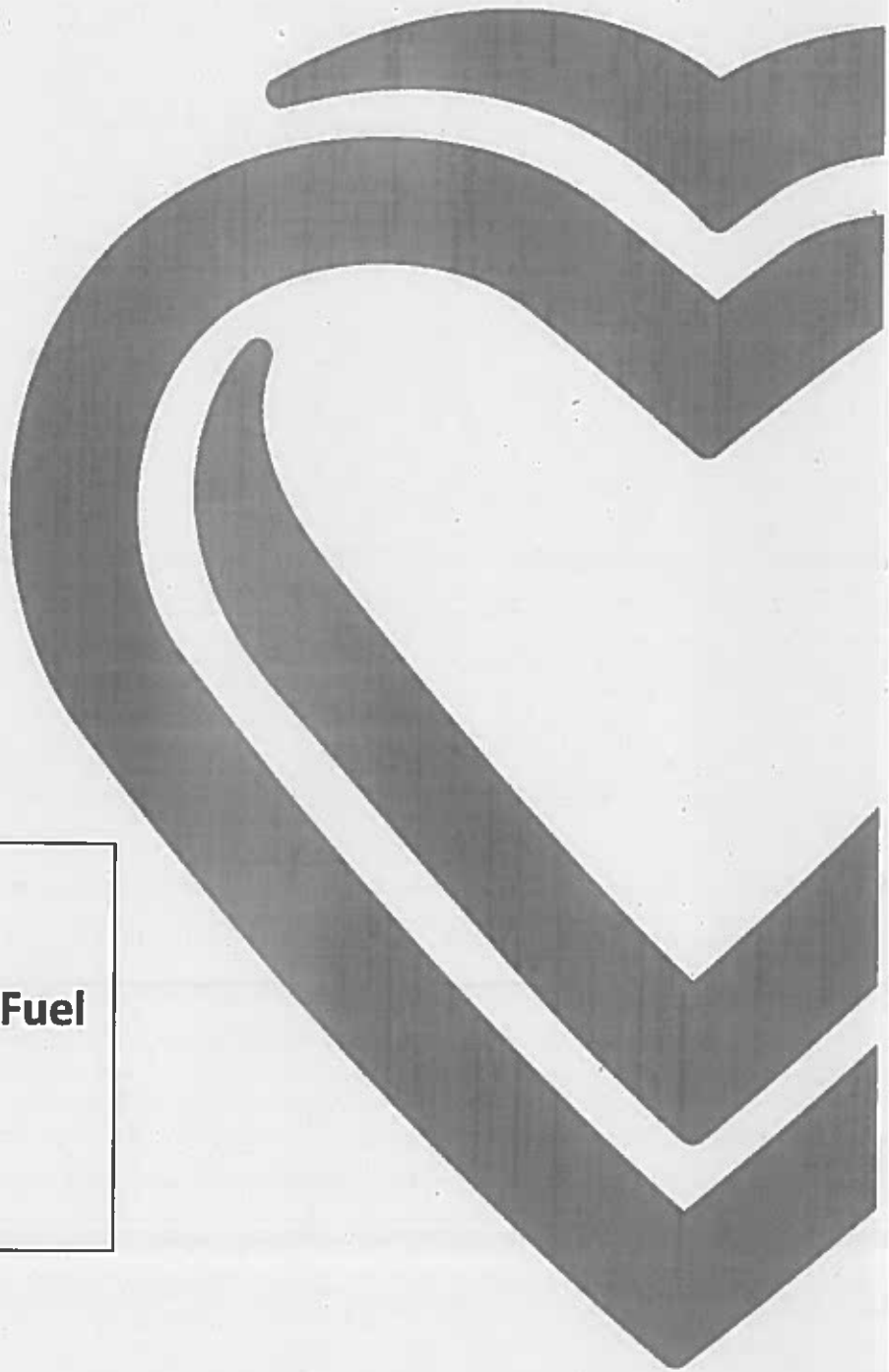




**Irish Heart  
Foundation**



**Submission on the Public  
Consultation on the  
development of new Solid Fuel  
Regulations for Ireland**

**April 2021**

[www.irishheart.ie](http://www.irishheart.ie)

# **Irish Heart Foundation submission on the Public Consultation on the development of new Solid Fuel Regulations for Ireland**

## **Introduction**

The Irish Heart Foundation welcomes the opportunity to contribute to the Public Consultation on the development of new Solid Fuel Regulations for Ireland. As stated in the public consultation briefing paper, air quality is a major concern at a global level, with the European Environmental Agency (EEA)<sup>i</sup> and World Health Organisation (WHO)<sup>ii</sup> both describing air pollution as the single 'biggest environmental health risk'.

Although, as an island, Ireland is not as badly exposed as some countries, air quality here has deteriorated significantly in recent years. According to the European Environment Agency report, *Air Quality in Europe 2020*<sup>iii</sup>, air pollution claims 1,410 lives annually, 1,300 of which are due to fine particulate matter (PM2.5). Moreover, the report indicates that 16,200 Year of Life Lost, showing significantly earlier mortality.

Ireland's Environmental Protection Agency (EPA) attributes these 1,300 premature deaths per year to PM2.5 emitted from the burning of solid fuel<sup>iv</sup>. In addition, recent research from that body showed that, annually in Dublin alone, approximately 725 deaths were associated with PM2.5 pollution, with the major source of this pollutant identified as solid fuel burning. Cardiopulmonary disease followed by lung cancer were the main causes of death<sup>v</sup>.

Medical research has demonstrated the link between PM<sub>2.5</sub> and both short and long-term health impacts<sup>vi</sup>, including headache, breathing difficulty, eye irritation, irreversible sight loss<sup>vii</sup>, dementia<sup>viii</sup>, exacerbation of respiratory conditions and increased levels of cancer and respiratory diseases.

However, it is the cardiovascular impact of air pollution that is of greatest concern as the WHO indicates the ischaemic heart disease and stroke accounts for 80% of all outdoor air pollution-caused deaths and 60% of all indoor air pollution-caused deaths<sup>ix</sup>. As a Foundation that promotes policy change to reduce premature death and disability from cardiovascular disease, we are acutely aware of the dangers that PM2.5 air pollution has on public health, particularly the cardiovascular system.

According to the EPA, the dramatic decline in economic activity and travel in 2020 due to the Covid-19 pandemic translated into a significant reduction of 5.9% in greenhouse gas emissions in the short term. This was largely due to a fall in emissions from the transport sector arising from the travel restrictions and less fossil fuel used in power generation. However, with the vast majority of citizens staying and working from home in 2020 due to the pandemic, residential sector emissions (mainly from home heating) are estimated to have increased by 9%<sup>x</sup>.

As solid fuel burning in domestic settings is a major source of PM2.5 nationally, it is likely that levels of this pollutant increased during 2020. The impact of this was evident as recently as December 2020 in Dublin and other towns and cities where air pollution levels were at a 30-year high, with some stations recording air pollution levels up to 15 times higher than the EU and WHO guidelines<sup>xi</sup>. Given that there is a strong link with Covid-19, highlighted in research showing that 8% of pandemic-related deaths in Ireland are linked to air pollution<sup>xii</sup>, the need to act on air pollution has never been starker.

Research informs us that the introduction of the “smoky coal ban” in Dublin in 1990 has resulted in approximately 350 fewer deaths per year, so we recognise the impact that regulation of solid fuel has in addressing the health implications of ultrafine particulate matter air pollution. It is timely then that the government has opened a public consultation on the regulation of solid fuel use and the Irish Heart Foundation will be calling for the introduction of measures that will save lives from the dangers of air pollution, while also protecting those most vulnerable from the consequences of fuel poverty.

## **Air quality in Ireland**

The EPA in its Air Quality in Ireland 2019 report states that air quality in Ireland is generally good but localised issues remain in some of our cities, towns, and villages. In the context of the impact of air pollution on health, this is quite an understatement, as Ireland was above WHO air quality guidelines at 33 monitoring sites across the country and 1,410 lives are lost every year due to air pollution – mostly due to the burning of solid fuel in our cities, towns, and villages.

The environmental body goes further in identifying particulate matter (PM2.5) from the burning of these solid fuels as a problem pollutant and cause of 1,300 of these 1,410 deaths per year. It advises that to tackle PM2.5 Ireland must move away from the burning of solid fuel (coal, wood, turf) and towards cleaner ways of heating our homes like gas or electrified heating, along with the implementation of a national smoky coal ban.

## **Particulate Matter**

Fine particulate matter or PM is the term used for a mixture of solid particles and liquid droplets found in the air. Particle pollutions include PM<sub>10</sub> (inhalable particles, with diameters that are generally 10 micrometres and smaller) and PM<sub>2.5</sub> (fine inhalable particles, with diameters that are generally 2.5 micrometres and smaller)<sup>xiii</sup>.

According to the European Environmental Agency (EEA), in 2018, 1,300 premature annual deaths in Ireland were attributable to PM<sub>2.5</sub>, with heart disease and stroke the most common causes<sup>xiv</sup>. This accounted for 4.17% of all deaths in Ireland in 2018 and unfortunately the number of premature deaths attributable to ambient PM<sub>2.5</sub> has slowly risen since 2011.

There are many sources of particulate matter including vehicle exhaust emissions, soil and road surfaces, construction works and industrial emissions. However, for PM<sub>2.5</sub>, the single largest source is the combustion of fossil fuels, especially the burning of peat, coal, and wet wood, in the residential and commercial sectors which together produced 54.9% of the annual PM<sub>2.5</sub> total in 2018. This is followed by transport at 14% and industry at 13%<sup>xv</sup>.

In 2019, the EPA monitored PM<sub>2.5</sub> levels at 30 stations throughout the country and although there were no exceedances of the EU annual limit, the WHO air quality guideline annual value was exceeded at five of the 30 monitoring stations, while the WHO daily value was breached at 25 of the 30 monitoring stations<sup>xvi</sup>.

### **Cardiovascular health harm from Particulate Matter (PM<sub>2.5</sub>)**

As particulate matter contains microscopic solids or liquid droplets that are so small that they can be inhaled, they can cause serious health issues, particularly to the cardiovascular system. Both PM<sub>10</sub> and PM<sub>2.5</sub> can be inhaled deep into the respiratory system and even get into the bloodstream. As PM<sub>2.5</sub> is less than 2.5 micrometers in diameter, they pose the greatest risk to health<sup>xvii</sup>.

A wide array of experimental and epidemiological studies has unequivocally provided persuasive evidence on the negative impact of PM<sub>2.5</sub> on cardiovascular events and outcomes<sup>xviii</sup>. In Ireland, research found that air pollution in the winter due to higher levels of PM<sub>2.5</sub> from solid fuel burning of coal, peat, and wood, was associated with increased hospitalisations for all strokes in Dublin<sup>xix</sup>, while further research suggested that even slight changes in the level of air quality in Dublin can impact the number of hospital admissions for individuals with heart failure, as well as asthma and chronic obstructive airways disease<sup>xx</sup>.

Meanwhile, research from the British Heart Foundation identified that PM<sub>2.5</sub> can cause cardiovascular health problems and exacerbate existing heart conditions, with exposure to elevated levels of PM<sub>2.5</sub> increasing the risk of a heart attack or stroke in vulnerable groups such as the elderly within 24 hours<sup>xxi</sup>. A recent project conducted with the University of Edinburgh demonstrated precisely how PM<sub>2.5</sub> contributed to heart disease. Using harmless gold nanoparticles that mimicked the particulate matter found in air pollution, volunteers breathed in these nanoparticles, which were subsequently tracked through the body. Within 24 hours, some nanoparticles had crossed from the lungs into the bloodstream, where they were still detectable three months later<sup>xxii</sup>.

Unless bold steps are taken immediately to drastically reduce the level of PM<sub>2.5</sub> in Ireland, we will continue to see a rise in cardiovascular events. Introducing effective regulations on solid fuels can ensure that we protect the most vulnerable in our society, such as children, pregnant women and their foetus, and the elderly as they are more affected by air pollution<sup>xxiii xxiv</sup>.

### Sources of Particulate matter

As highlighted above, for PM<sub>2.5</sub>, the single largest source is the combustion of fossil fuels, especially the burning of peat, coal, and wet wood, in the residential and commercial sectors which together produced 54.9% of the annual total in 2018. The EPA, in 2020, examined the emission factors of different solid fuels used in residential settings. It noted that all the solid fuels it tested, including fuels categorised as “smokeless” under Irish law, were found to generate very substantial levels of particulate emissions when tested over a complete combustion cycle<sup>xxv</sup>.

Researchers of the report examined the particulate matter emission factors of the following solid fuels in the levels of gigajoules emitted (g GJ<sup>-1</sup>) – sod peat, peat briquettes, bituminous (smoky) coal, smokeless coal, soft wood, hard wood, and wet wood. They found that three broad levels of PM emissions could be discerned:

- a) Sod peat is highest at ~300 g GJ<sup>-1</sup>.
- b) Peat briquettes, bituminous (smoky) coal and “smokeless” coal are all next as they produce similar levels of particulate matter at ~125 g GJ<sup>-1</sup>.
- c) Dry wood is lowest at ~ 50g GJ<sup>-1</sup>.

The findings show that PM emissions from sod peat are six times higher than dry wood and more than twice as high as from bituminous (smoky) coal. However, the report noted while they are classified as “smokeless” fuels when tested over a full cycle (including ignition), both peat briquettes and smokeless nuggets exhibited a level of PM emissions similar to

bituminous (smoky) coal. In addition, the PM emissions from the "wet" wood tests are about three times higher than from dry wood which is very substantial.

These results clearly show that PM emissions from these sources are very significant and the authors note that "because those emissions are generated in residential areas, they have the potential to impact appreciably on human health. The impact is likely to be most severe where both population density and emission source density are high."

## **Measures to reduce Particulate Matter (PM<sub>2.5</sub>)**

### **Consultation questionnaire**

The Department of Environment has developed an online technical questionnaire. The consultation questions included in that questionnaire will be presented and answered below.

#### **1. Are you in favour of a national regulation on solid fuels, and if so, why?**

Yes. As shown above, the combustion of all these solid fuels emits significantly high levels of PM and the residential and commercial sectors remain the largest contributor to national PM<sub>2.5</sub> emissions<sup>xxvi</sup>. To reduce emissions from this pollutant, it is imperative that all these solid fuels be subject to strict regulations as that will benefit public health and save lives. The Irish Heart Foundations supports both immediate and phased-in regulations on these solid fuels to ensure that PM<sub>2.5</sub> levels drop, and the associated negative health implications diminish considerably.

#### **2. What solid fuels should be subject to regulation and why?**

The following solid fuels should be subject to regulation – sod peat/turf, peat briquettes, bituminous (smoky) coal, smokeless coal, soft wood, hard wood, and wet wood. As demonstrated above, when burned, all these types of solid fuels emit significantly high levels of PM<sub>2.5</sub> which has been shown to be severely detrimental to human health and the cause of 1,300 premature deaths every year in Ireland. Consequently, all these solid fuel types should be subject to regulation.

#### **3. What standards or specifications should/could be applied to each type of solid fuel?**

All solid fuel should be subject to strict standards and specifications set by the Environmental Protection Agency. It is imperative that standards are not industry-set as commercial interests will take precedence over the health and environmental implications of solid fuels.

Regarding the solid fuel of wood, all wood for sale, distribution, and marketing, importation, and permitted to be burned must be hard dried kiln wood with a low moisture content (measured relative humidity <20%).

#### **4. What do you believe are the most appropriate, implementable, and enforceable regulatory approaches for each type of solid fuel?**

##### **a. Sod Peat**

As outlined in the EPA report on emission factors "Sod peat exhibited by far the highest emission factor for both PM and oxides of nitrogen (NOx)<sup>xxvii</sup>." Further EPA research which carried out detailed measurements of PM2.5 levels in Killarney, Enniscorthy and Birr during wintertime when solid fuel was burned found that the burning of peat was the dominant source<sup>xxviii xxix</sup>. Given the severely damaging health implications of PM on human health and the high reliance of peat in rural towns, regulations should be imposed on sod peat immediately.

The Irish Heart Foundation recommends that the sale, distribution, and marketing of sod peat should be prohibited nationally from 01/05/2022 onwards.

However, the cutting and burning of sod peat should be allowed to continue due to the high level of dependency and cultural affinity it has in Ireland, particularly among some rural communities. To raise public awareness of the dangers that burning sod peat has on human health, we recommend that the Department of Environment and EPA embark on a multi-year public health campaign to promote healthier methods of home heating and communicate the health dangers of burning sod peat.

##### **b. Wet wood**

Wet wood, also known as green or unseasoned wood, can often be found for sale in DIY or garden centres. As the name suggest, wet wood has a high moisture content of at least 20% or higher, making it inefficient as a fuel when burned<sup>xxx</sup>. Not only is it a poor form of solid fuel, when burned, the PM emission were about three times higher than from dry wood at 152 GJ<sup>-1xxx1</sup>.

The Irish Heart Foundation recommends that the sale, distribution, marketing, importation, and burning of all forms of wet wood (measured relative humidity >20%) should be prohibited nationally from 01/05/2022 onwards<sup>xxxii</sup>.

### c. Dry/Kiln Wood

According to the EPA, the kiln-dried hardwood represents the "best in class firewood" fuel and that air-dried softwood is a cheaper alternative. When tested for PM emission factors, the EPA found that soft dry wood emitted 46 GJ<sup>-1</sup> while hard dry wood emitted 38 GJ<sup>-1</sup>. Overall, the lowest levels of both PM and NOx were observed when burning kiln-dried hardwood logs. Based on these findings, the researchers recommended that regulation of fuel quality for commercial traded wood fuels should be considered.

Accordingly, the Irish Heart Foundation recommends that only kiln-wood with a low moisture content (measured relative humidity <20%) should be permitted for sale, distribution, marketing, importation, and burning nationally.

However, despite kiln wood emitting lower levels of PM than other solid fuels, the PM emissions still pose a significant health harm. Kiln wood is often burned in wood burners and researchers in the UK found that these triple the level of harmful PM inside homes. The authors behind this report go further and advise that wood burners should be sold with a health warning and not be used around elderly people or children<sup>xxxiii</sup>.

The study assessed 260 wood burners in people's homes and found that wood burners were usually lit for about four hours at a time, and during this period the level of harmful PM in homes was three times higher than when these stoves were not being used<sup>xxxiv</sup>. Further evidence indicates that wood-burning stoves emit more particles per hour than a modern diesel lorry<sup>xxxv</sup>.

Evidently, the burning of kiln-dried wood cannot be relied upon as a form of home heating in the long term as the health consequences would be devastating. Examining the UK, domestic wood burning there has become the single biggest source of PM2.5, producing three times more than road traffic<sup>xxxvi</sup>. As such, it is imperative that we transition away from burning any solid fuels and towards cleaner alternatives such as electrified heating and liquified gas.

In this regard, the Irish Heart Foundation recommends that the government phase-out all remaining smokeless fuels, such as dried-kiln wood, in the medium term either through the imposition of regulations or public awareness campaigns highlighting the negative health impact of this fuel.



#### **d. Peat Briquettes**

In January 2021 Bord na Móna announced a formal end to all peat harvesting on its lands and that the manufacturing of peat briquettes will cease after 2024<sup>xxxvii</sup>. This news is encouraging as peat acts as a carbon sink and when burned, peat briquettes emitted 135 GJ<sup>-1</sup> PM which is slightly higher than bituminous (smoky) coal and "smokeless coal"<sup>xxxviii</sup>.

In line with the end of production of peat briquettes after 2024, the Irish Heart Foundation recommends that the sale, distribution, marketing, importation, and burning of peat briquettes should be banned nationally from 01/01/2024 also.

#### **e. Bituminous (smoky) coal**

Bituminous (smoky) coal was first banned in Dublin in 1990 after a series of smog-filled winters and the health impact has been monumentally successful, with approximately 350 fewer mortalities per year, reducing cardiovascular, cerebrovascular, and respiratory mortality in the general population<sup>xxxix</sup>.

The ban has been extended at various times since and now covers Dublin, Cork, and a further 39 urban areas nationwide. Successive governments have attempted to ban bituminous (smoky) coal nationwide but have been blocked by legal threats<sup>xl</sup>. The EPA in its 2019 air quality report recommended the implementation of a national Smoky Coal ban to tackle the problem of PM<sup>xli</sup>.

This recommendation is justified as when burned, PM emissions from bituminous (smoky) coal are high at 115 GJ<sup>-1</sup>. Considering this, the Irish Heart Foundation recommends that the smoky coal ban be made national, in effect the sale, marketing, distribution, importation, and burning of bituminous (smoky) coal should be prohibited nationally from 01/05/2022.

#### **f. Smokeless coal**

Due to its name, smokeless coal is often deemed to be safer and healthier than bituminous (smoky) coal, but this is false. Researchers have found little difference between smokeless and smoky coal and burning smokeless coal in household stoves is a major source of air pollution despite its apparent clean credentials<sup>xlii</sup>. Smokeless coal, when burned emits PM emissions at 112 GJ<sup>-1</sup>, just slightly lower than bituminous (smoky) coal at 115 GJ<sup>-1</sup><sup>xliii</sup>.

Consequently, smokeless coal cannot be relied upon in the long term due to its health implications. However, we recognise that a significant cohort of the population in Ireland depend on solid fuels to heat their homes. In this regard, the Irish Heart Foundation recommends that the government phase-out all remaining smokeless fuels, such as

smokeless coal, in the medium term either through the imposition of regulations or public awareness campaigns highlighting the negative health impact of this fuel.

#### **g. Importation of solid fuels**

To ensure strict compliance with the new solid fuel regulations and to protect public health from the dangers of air pollution, the Irish Heart Foundation recommends that the importation of the above solid fuels should be prohibited on the same date that each solid fuel is banned from sale, marketing, distribution, and from burning. It is imperative that importation loopholes are closed.

As two separate political jurisdictions exist on the island of Ireland and air pollution does not respect these boundaries, pursuing an all-island clean air policy will be critical in reducing the number of deaths attributable to air pollution. In this light, the Irish Heart Foundation recommends that air pollution from residential solid fuels be addressed by the North-South Ministerial conference so that a joint ban on the burning of all solid fuels can be realized in both the Republic of Ireland and Northern Ireland. However, it is critical that the introduction of regulations of solid fuels here in the Republic is not delayed or impeded by policy decisions in Northern Ireland.

### **5. How can a transition to less polluting fuels and more efficient heating systems be supported? (Building upon the measures already set out in the Climate Action Plan)**

Transitioning away from less polluting fuels and towards more sustainable methods of heating our homes will require strong government backing and significant amounts of investment. The most effective way of doing so is accelerating the National Retrofitting Programme, drastically increasing its budget, and ensuring that it prioritizes those most at risk of fuel poverty, particularly those in social housing and communities in the midlands where there is a high reliance on burning solid fuels to heat their homes.

According to the Minister of the Communications, Climate Action and Environment, Eamon Ryan, the Programme for Government, and the Climate Action plan aims to retrofit 500,000 older homes to a Building Energy Rating of B2/cost optimal and to install 400,000 heat pumps in existing buildings over the next 10 years. Capital funding of €221.5 million was provided for 2021 to the Sustainable Energy Authority of Ireland (SEAI) for these residential and community retrofit schemes<sup>xliiv</sup>.

The 2021 figure represents an 82% increase of the 2020 allocation and is the largest amount ever for the schemes. As retrofitting and installing heat pumps provides a dual benefit to both environmental and human health through reduced greenhouse gas emissions and health harming air pollutants such as PM2.5, the Irish Heart Foundation recommends that the capital funding for this scheme should be increased to an annual figure of €400 million and that the ten-year retrofitting and heat pump installation target be reassessed upwards, reflecting the increased level of investment.

Transitioning all residential households to efficient heating systems with insulated retrofitting is a long-term objective however, so the reliance on solid fuel burning for a large proportion of households across the country will remain a reality unfortunately. As budget 2021 increased the carbon tax on fuel by €7.50 from €26 per tonne to €33.50 per tonne<sup>xlv</sup>, and the programme for government has committed to increasing the carbon tax to €100 per tonne by 2030, those reliant on solid fuels to heat their homes will find it increasingly costly to purchase these fuels<sup>xlvi</sup>.

While we welcome the introduction and annual rise of the carbon tax as it is recognised as an important tax policy tool to move towards a more sustainable economy, it will be those most at risk of fuel poverty and reliant on these forms of solid fuels that will be disproportionately hit by it. The department of public expenditure and reform has estimated that the 2021 carbon tax rate will generate proceeds of €238m. Of this, €100m will be allocated to investment in residential & community energy efficiency and €48m to targeted social protection interventions<sup>xlvii</sup>.

This provision of revenues from the carbon tax to measures that support those most at risk of fuel poverty is crucial and the future planned carbon tax increases must be matched by a proportional increase in these allocations. An existing measure that supports those at risk of fuel poverty is the fuel allowance payment which rose by €3.50 in this year's budget to €28.00 per week<sup>xlviii</sup>. The department of social protection states that over 375,000 households will benefit from this increase in fuel allowance and latest figures from Eurostat suggest that in 2017 393,417 people in Ireland went without heating due to lack of money<sup>xlix</sup>.

These figures illustrate the stark reality that hundreds of thousands of households in Ireland are at risk of fuel poverty. Accordingly, to support these groups as we ban the worst solid fuels in the short term, phase out all remaining solid fuels over the medium-term, and accelerate the national retrofitting and heat pump programme, a dedicated green transition fuel allowance should be introduced to complement the existing fuel allowance scheme.

This new green transition fuel allowance would be established on a similar model to the existing scheme, providing weekly payments to those eligible. However, the green transition

fuel payment would be strictly regulated, and recipients would only be entitled to purchase less PM polluting fuels such as kiln dried wood and safer appliances such as an eco-stove. This would facilitate a move towards less health harming fuels while we transition completely away from all solid fuel use.

Ensuring that those most at risk of fuel poverty are not disproportionately hit by these new solid fuel regulations is vital as research shows the direct and indirect effect that fuel poverty has on health. A 2007 report from the Institute of Public Health in Ireland found that Ireland and Northern Ireland had an estimated 2,800 excess deaths on the island over the winter months due to being unable to heat homes properly. Single-person households, households headed by lone parents, and pensioners were at particular risk<sup>1</sup>. These findings were re-affirmed in 2015 when a report from the Environmental Health paper indicated that the island of Ireland "has the highest levels of excess winter mortality in Europe, with an estimated 2,800 excess deaths during each winter"<sup>11</sup>.

Fuel poverty and consequently the higher mortality rates in the winter months remains a major societal issue that will persist for generations unless addressed. An acceleration and expansion of the national retrofitting and heat pump installation scheme, in tandem with the introduction of a green transition fuel allowance, prioritising these households most at risk of fuel poverty is the most effective measure in reducing excess winter mortality.

## **6. What do you think is an appropriate timeframe for the implementation of a national regulation of solid fuel?**

As the burning of solid fuel leads to 1,300 lives lost every year, the introduction of national regulations cannot be delayed. It is imperative therefore that the most health harming fuels are prohibited following the winter of 2021/2022, and the phase-out of the remaining solid fuels occurs over the next decade. The following timeframe should be adopted for each solid fuel.

- The sale, distribution, importation, and marketing of sod peat should be prohibited nationally from 01/05/2022 onwards.
- The sale, distribution, marketing, importation, and burning of all forms of wet wood (measured relative humidity >20%) should be prohibited nationally from 01/05/2022 onwards.
- The sale, distribution, marketing, importation, and burning of all wood, including kiln-wood with a low moisture content (measured relative humidity <20%) should be phased out in the medium term either through regulations or public awareness campaigns highlighting the negative health impact of this fuel.

- In line with the end of production of peat briquettes after 2024, sale, distribution, marketing, importation, and burning of peat briquettes should be banned nationally from 01/01/2024 also.
- The smoky coal ban should be made national, in effect the sale, marketing, distribution, importation, and burning of bituminous (smoky) coal should be prohibited nationally from 01/05/2022 onwards.
- The Irish Heart Foundation recommends that the sale, marketing, distribution, importation, and burning of smokeless coal should be phased out in the medium term either through regulations or public awareness campaigns highlighting the negative health impact of this fuel.

**7. What timeframe should be applied to the inclusion of new solid fuels into legislation to allow for the necessary transition, including the phase out of existing stocks?**

Please see question 6 for recommendations on timeline for each solid fuel. Only new solid fuels that are approved by the EPA should be allowed to be sold, marketed, distributed, imported, and burned. Such new solid fuels should be subject to regulations, standards, and specifications set by the EPA. The Irish Heart Foundation recommends that dried kiln-wood and smokeless coal should be phased out in the medium term either through regulations or public awareness campaigns highlighting the negative health impact of this fuel.

**8. Should suppliers and retailers be given a transition period to use up existing stocks of solid fuels not meeting emission standards and, if so, how long?**

To facilitate suppliers, retailers, and vitally households that use solid fuels not meeting emission standards, a transition period lasting up to 01/05/2022 should be applied. This would provide suppliers and retailers sufficient time to sell existing stock and transition to less-polluting fuels. Critically, however, it would provide households that use the most polluting solid fuels to heat their homes through the winter of 2021/2022 and a long lead in time to substitute these fuels with less-polluting fuels. It is imperative that the cut off-point of 01/05/2022 be highlighted well ahead of time to all those affected by it through national public service announcements on radio, tv, and print channels.

**9. Are there particular challenges in terms of the enforcement of regulations applying to solid fuel burning, and how might these be best addressed?**

Although the smoky coal ban currently applies to Dublin, Cork, and all towns with population over 10,000 people<sup>iii</sup>, the rules are easily flouted and prosecutions against those who break the regulation are pitifully low. As individual local authorities are primarily responsible for the enforcement of legislation on solid fuel including the 'smoky coal' regulations, no dedicated funding to undertake these specific functions is provided and it is at the discretion of each local authority to decide its own priorities and to allocate staff and resources accordingly<sup>iiii</sup>, the compliance and enforcement of current regulations is challenging.

Moreover, as seen below in table 1, the number of enforcement actions and fines under the current Solid Fuel regulations are extremely low.

Table 1: Level of enforcement notices and prosecutions as reported to the Agency by Local authorities for the years 2015 to 2018 under the "Smoky Coal Ban" Regulations<sup>iv</sup>.

	2015	2016	2017	2018
Enforcement actions under Solid Fuel regulations (S.I. 326 of 2012)	78	50	97	7
Fixed Payment Notices (FPNs) under Solid Fuel regulations (S.I. 326 of 2012)	0	11	5	8
Prosecutions initiated under the Solid Fuel regulations (S.I. 326 of 2012)	2	2	0	1
Prosecutions initiated for failure to pay FPNs	N/A	0	3	6

As the table illustrates, it is difficult to enforce the existing smoky coal ban when local authorities are not supported with the required levels of funding, resources, and staff to police it. In launching the Focus on Local Authority Environmental Enforcement report in March of this year<sup>v</sup>, the EPA noted that while local authorities are taking account of national enforcement in implementing their work, additional focus is needed for air enforcement.

Dr. Tom Ryan, Director of the EPA's Office of Environmental Enforcement acknowledged that "good work has been completed by local authorities, working with the EPA, in developing the national air monitoring programme. However, considering the effect of air quality on human health and well-being, more action is needed on air enforcement<sup>vi</sup>." Examining staffing levels at local authorities, the EPA report finds that water environmental

staff account for about one quarter of environment staff but other areas such as air quality have limited resources.

Air enforcement inspections relate mainly to the control of smoky fuel sales and the development of the ambient air monitoring network. While there was a 17% increase in the number of solid fuel inspections carried out by local authorities in 2019, compared with the previous year, given the importance of air quality on human health, the EPA recommends that local authorities need to increase resourcing and develop capacity in air enforcement to enhance protection of the environment and public health. However, local authorities will only be able to realise this when sufficient resources from the government are allocated.

As demonstrated, enforcing the current smoky coal regulation is challenging enough for local authorities. Expecting local authorities to police and enforce additional solid fuel regulations without adequate funding is simply unworkable. To address these challenges and ensure enforcement of the solid fuel regulations is applied, the Irish Heart Foundation recommends that the government provide dedicated funding to each local authority to monitor and enforce solid fuel regulations and to staff additional dedicated air quality roles.

However, resources and staff to enforce the regulations will only ensure compliance if those who breach the rules are adequately fined to deter use of illegal solid fuels. Under the Air Pollution Act (Marketing, Sale, Distribution and Burning of Specified Fuels,) Regulations, commonly known as the "Smoky Coal Ban", authorised persons from local authorities may apply fixed payment notices of between €250 and €1,000 for alleged offences under certain provisions of these regulations. Failure to pay a fixed payment notice within 21 days may result in prosecution and fines of up to €5,000 and/or imprisonment for up to six months can be applied on summary conviction<sup>lvii</sup>.

The introduction of new solid fuel regulations should be met with stricter penalties to enforce compliance. To appropriately reflect the severity and health implications that breaching the solid fuel regulation entails, the maximum fine amount for breaching the regulation should be doubled from €5,000 to €10,000 and the minimum that 'on-the-spot' fixed payment notices should be increased from €250 to €500. Only in this manner can the smoky coal ban be properly enforced, and air quality be maintained so that public health is protected, and lives are saved.

According to the EPA, there were 567 air enforcement actions initiated during 2019. 6 prosecutions were initiated by Dublin City and Kerry, Limerick County Councils. This represents a 38% reduction in enforcement actions<sup>lviii</sup> and merely highlights the challenge facing local authorities to police current regulations. Significant more support, resources, and funding to these local authorities is critical.

## **10. Do you have any further proposals to reduce air pollution from residential heating?**

Public awareness of the health impact from the burning of these solid fuels for residential heating is extremely low. An Irish Heart Foundation Ipsos MRBI<sup>1</sup> omnipoll found that only 11% of respondents thought that the burning of wood, peat and coal in homes was the main source of air pollution that impacts negatively on people's health in Ireland. Half of all respondents (51%) believed transport e.g., cars, buses, air travel etc. is the main source, followed by industry at 21%.

Moreover, when asked what the leading cause of death as a result of air pollution is, 42% believed lung disease (C.O.P.D or bronchitis) is the leading cause, followed by heart disease including stroke and lung cancer at 19% each respectively. This is despite WHO evidence showing ischaemic heart disease and stroke accounts for 80% of all outdoor air pollution-caused deaths and 60% of all indoor air pollution-caused deaths<sup>lix</sup>.

Finally, even with the vast amount of medical research demonstrating the devastating health impact of burning solid fuels, only 42% of respondents believe burning wood, coal, or peat indoors is damaging to health of those living in the home, while almost 1 in 3 (31%) do not think it is damaging. Evidently, the public awareness of the health implications of burning these solid fuels for residential heating is extremely low.

To further reduce air pollution from residential heating, the Irish Heart Foundation recommends that the Department of Transport, Climate, and the Environment, in conjunction with the EPA and HSE, embark on a multi-year public awareness campaign that would communicate the health implications of burning these solid fuels. Encouraging the move away from burning these solid fuels via print, tv, radio, and online channels, the national campaign would promote less-polluting residential heating options. In addition, this campaign would convey the following messages:

- The announcement of the introduction of the new solid fuel regulation
- The details of the new solid fuel regulation and advanced warning of the new restrictions being brought in on sod peat, wet wood, and smoky coal in 2022.
- Details and eligibility of the introduction of the new green transition fuel allowance
- Advice on how best to transition to less polluting residential fuels.
- Health warning around burning these solid fuels and methods to reduce exposure.

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<sup>1</sup> Survey Methodology: Ipsos MRBI Omnipoll telephone survey conducted amongst a nationally representative sample of 1,004 adults aged 15+, between 18<sup>th</sup>-31<sup>st</sup> January 2021.



A critical aspect of any public awareness campaign will be to communicate to households that do not rely on the burning of solid fuels as their primary source of residential heating i.e., stoves or fireplaces as second or third residential heating sources, to reduce their use of burning solid fuels. These are often middle-class households that have cleaner forms of fuel as their primary source of residential heating such as gas or electrified heating but light fireplaces and stoves as they have a culture affinity attachment to it and want to create an "ambience" in their households.

The campaign should highlight the health implications of burning these solid fuels, without scaring those most reliant on solid fuels to heat their homes to the point that they refrain from heating their homes at all and thus expose themselves to health-threatening low temperatures in their households. All communication should rather promote the benefits of clean air and promote less polluting solid fuels and methods that reduce exposure to PM emissions.

**11. What performance standards, certification methods or quality schemes should/could be used to reduce air pollution caused by burning solid fuels?**

All solid fuel should be subject to strict performance standards, certification methods or quality schemes set by the Environmental Protection Agency. It is imperative that standards are not industry-set as commercial interests will take precedence over the health and environmental implications of solid fuels.

**12. Would broadening the application of the 10-gram smoke per hour to all solid fuels be appropriate?**

Any application of smoke-per hour of all solid fuels should be subject to regulations set by the Environmental Protection Agency.

**13. Are there any additional of different emissions standards which could be applied to the broader range of fuels?**

All solid fuels should be subject to strict regulation set by the Environmental Protection Agency.

**14. Is it appropriate to use moisture content as a standard for the application of regulation to wood, and if so, at what limit should the moisture content be set?**

Yes – It is essential that wood for sale, marketing, distribution, importation, and permitted to burn, be subject to strict moisture content levels. Only kiln-wood with a low moisture content (measured relative humidity <20%) should be permitted for sale, distribution, marketing, importation, and permitted to burn. In that regard, any wood that has a measured relative humidity of >20% should be prohibited from 01/05/2022. Any producers and suppliers of wood that does not meet such standards should be heavily fined to ensure compliance.

From 2022 onwards, all remaining dried kiln wood should be phased out in the medium term either through the imposition of regulations or through a public awareness campaign highlighting the negative health impacts of burning this fuel.

**15. What limit should be set as a cut-off point for the sales of wet wood?**

All wet wood (measured relative humidity >20%) should be prohibited from sale, marketing, distribution, importation, and permitted to burn from 01/05/2022.

**Ends**

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