

Modern Wood Burning Stoves Can Solve the UK's Open Fire Air Pollution Problem

As the festive season approaches, it is worth considering the impact burning wood on open fires has on air quality.

The popularity of wood burning stoves has led many to associate wood burning with stoves. When it comes to emissions this can lead to the wrong conclusion because the emissions from wood burning depends on the appliance it is burnt on. An open fire produces 10 times more particulate emissions (PM) than a SIA Ecodesign Ready stove¹.

To help remedy the problem of smoke in our cities, the burning of wood in an open fire is prohibited by the Clean Air Act but local authorities have found it difficult to enforce the regulation and most people do not realise that they are breaking the law.

When people turned to burning wood on open fires, many did so for good environmental reasons. (As the recent Met Office report has highlighted carbon reduction is a key priority for the UK and wood, as a renewable carbon neutral fuel, plays a significant role in reducing CO₂ emissions). However householders don't realise that they are adding to the problem of poor air quality. An open fire is the wrong way to burn wood. The high level of incomplete combustion in an open fire produces higher levels of smoke and particulate emissions than a Defra Exempt or SIA Ecodesign ready stove. Nationally 40% of wood is burnt on open fires; In London this increases to 70%².

Despite this, the level of emissions from wood burning has declined in most UK cities, including London, because people have been switching to Defra Exempt stoves which are certified to reduce emissions and are designed for smoke control areas³. Accelerating the move away from open fires to SIA Ecodesign Ready stoves, which can produce 90% fewer emissions, will lead to further reductions in particulate emissions.

The Defra Clean Air strategy will focus on educating consumers to burn dry wood on an Ecodesign compliant stove⁴, but it also needs to address the issue of open fires.

Switching from an open fire to a SIA Ecodesign Ready stove will also bring benefits for the householder. The increase in efficiency from 30% for an open fire to 70% or 80% for a modern stove will result in significantly more heat in the room and the use of fewer logs to produce that heat. It is estimated that it would require 16 logs in an open fire to produce the same heat as 5 logs in a SIA Ecodesign Ready stove. The use of fewer logs will in itself will lead to fewer emissions.

As Neil Parish MP, Chair of the Select Committee Environment Food & Rural Affairs, said at the launch of the SIA Ecodesign Ready stoves: “What the SIA is doing fits in with the world we have; we have problems in our inner cities with very high levels of NOx and particulates. Anything we can do to reduce that from open fires and others, through SIA Ecodesign Ready stoves has got to be an absolute benefit.”

1. Kiwa report number 60578 COMPARATIVE SMOKE EMISSION TESTS, 2015
2. BEIS Domestic Wood Usage Survey, 2016
3. uk-air.defra.gov.uk/library/reports?report_id=953
4. Ecodesign is the European wide legislation designed to reduce emissions from heating appliances, adopted by Defra.

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Editor's Notes:

- The Stove Industry Alliance was formed in 2008 and is a trade association of stove manufacturers, distributors and retailers, wood fuel suppliers, flue and component manufacturers.
- With 40 manufacturing members and just under 50 retail members, the SIA represents the stove industry in discussion with government departments such as DEFRA and BEIS.
- The SIA represents the UK in CEFACD, the European stove association, and also works closely with HETAS and Woodsure.
- The SIA has high-resolution lifestyle images from a range of SIA manufacturing members available on request for publications looking to illustrate home heating, stove and fireplace feature articles. Please contact Erica Malkin, SIA Secretary General on 07891 097942 or erica@stoveindustryalliance.com
- Further information on the work of the SIA can be found at www.stoveindustryalliance.com