

### **Wood burning stoves: the low-carbon solution**

In response to an article published in Air Quality News on 26<sup>th</sup> November 2019, *Turning up the heat on indoor air quality*, Erica Malkin, Secretary General of the Stove Industry Alliance (SIA), offers the following commentary in support of advanced SIA Ecodesign Ready wood burning stoves and explains their role in providing a low-carbon solution to the UK's domestic heating needs.

When making an assessment of the impact on air quality from burning wood for domestic heating, it is important to understand the different types of appliance that homeowners have to burn wood to heat their properties. There are three main types in use in the UK – open fires, older stoves and modern Ecodesign Ready wood burning stoves.

It is also important to realise that the article *Turning up the heat on indoor air quality* contained a number of inaccuracies. One of these was the HETAS figures quoted to show the increase in sales of wood burning stoves. These do not represent the market for wood burning stoves, but rather show the increased awareness of registering installations with an approved competent person's scheme, of which HETAS is the main one. The SIA has recorded overall figures for appliances sold in the stove and fireplace market and these show that whilst there was an increase between 2011-2013, since then the market has actually been declining.

This is a real issue because the majority of wood is still therefore being burnt on either open fires or older stoves, which produce far higher emissions than modern Ecodesign Ready stoves.

Figures from a recent user survey in 2019 conducted by the SIA and independently verified by Kiwa, show that open fires and older stoves account for over 51% of the UK's annual wood fuel consumption. In London it is estimated that 70% of wood that is being burnt for domestic heating is being used on open fires.

By replacing open fires and older stoves for an advanced Ecodesign Ready stove air quality would be greatly improved and particulate emissions significantly reduced. And not just by a nominal amount either, independent tests by Kiwa<sup>1</sup> show that advanced Ecodesign Ready stoves produce up to 90% less emissions than open fires and up to 80% less than stoves that are over 10 years old.

Challenging air quality targets have been established by the Clean Air Strategy and the spotlight is firmly on domestic emissions. The challenge therefore for the wood burning stove industry is to help raise awareness of the huge improvement in air quality and particulate emissions stove replacement can make.

We also need to consider the facts when it comes to wood fuel consumption in the UK. In 2015 the results of the BEIS Domestic Wood Survey led to the estimation that six million tonnes of wood fuel are burnt each year in the UK. This figure was central to the government's claim in Defra's Clean Air Strategy that 38% of PM<sub>2.5</sub> emissions come from domestic burning.

In early 2019 the SIA conducted a user survey of 10,620 members of the public using wood burning stoves at home. The SIA survey used the same questions and methodology as employed in the BEIS Domestic Wood UK Survey carried out in 2015 and used a much larger sample (the BEIS survey had a sample size of 1,200).

The SIA survey suggests that in fact less than two million (1.85m) tonnes of wood is burnt each year. Using this figure to calculate the percentage of PM<sub>2.5</sub> from domestic burning would see 38% reduced to 13.8%. It is interesting to note the London Mayor's Office through independent testing has concluded that domestic wood and coal burning is responsible for 16% of London's PM<sub>2.5</sub> emissions, which supports the SIA survey results.

SIA survey findings also show that 27% of appliances are open fires or stoves over ten years old. As stated earlier, these appliances account for over 51% of the wood burnt in the UK each year. Replacing these inefficient appliances with Ecodesign Ready stoves would reduce emissions by nearly 45%. Hence with this reduction, UK domestic wood burning would in fact only account for around 7.5% of PM<sub>2.5</sub>.

The SIA is also advocating better education of stove users on the importance of using quality dry wood fuel. Poor quality fuel with a high moisture content is a major contributor to particulate emissions, has a detrimental effect on the efficiency of a stove and requires the use of more wood overall, compared to dry wood, to produce the same heat output.

It is vital that the public understands the importance of using quality wood fuel, such as Ready to Burn accredited wood, which has less than 20% moisture content. Used in combination with an Ecodesign ready stove, this will use less than a third of the number of logs needed to produce the same amount of heat as an open fire<sup>2</sup>, playing a key role in helping to reduce emissions and improve air quality

Manufacturing members of the SIA have led the charge in the response to the tough new emissions and efficiency requirements that Ecodesign 2022 places on wood burning appliances. The very latest new stoves designed and manufactured by its members have precision engineered fireboxes, which use advanced airflow systems and baffle arrangements to generate secondary and tertiary combustion before the gases exit the flue system. This ensures that the excess hydrocarbons are burnt off in the firebox ensuring greatly reduced

particulate emissions. There is a comprehensive range of SIA Ecodesign Ready appliances that meet Ecodesign 2022 standards now.

To help improve public perception and address the lack of knowledge around the importance of modern appliances, correct fuel and professional installation, the SIA has recently set up the SIA Retail Group. Members of this network of quality, independent showrooms have made a commitment to ensuring all appliances they sell meet or exceed current legal requirements, will offer personalised advice on choosing the right stoves, will only use or recommend qualified competent persons to carry out installations, and will provide advice on using the stove and choosing the right fuel and offer comprehensive aftersales support.

Wood burning has an important role in the future of domestic heating when considering the challenges of climate change, the move away from fossil fuels, fuel poverty and fuel security and there strong evidence that modern wood burning stoves can, in fact, play a key role in helping to reduce emission and improve air quality.

The SIA strongly believes that modern wood burning stoves represent a low carbon renewable and sustainable heating solution that their owners can be proud of and its members are committed to an on-going programme of continuous improvement in firebox technology to reduce the low levels of emissions from Ecodesign Ready stoves even further.

A full list of SIA Retail Group members can be found at <http://www.stoveindustryalliance.com/retail-group-members/>

1. Kiwa report number 60578 COMPARATIVE SMOKE EMISSION TESTS, 2015
2. An open fire will need 16 logs to produce 4kW of heat over a 5-hour period, compared to just 5 logs needed by an SIA Ecodesign Ready stove.

**ENDS**

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 01325 720775 or [erica@stoveindustryalliance.com](mailto:erica@stoveindustryalliance.com)



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- Further information on the work of the SIA can be found at [www.stoveindustryalliance.com](http://www.stoveindustryalliance.com)