



MULTI-FUEL HEATING IN THE SOCIAL HOUSING SECTOR



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The heating of social housing properties presents a varied, and difficult to reconcile, set of challenges for social landlords. There are a plethora of regulations and initiatives. In addition to trying to satisfy tenant choice, both from an economic and convenience viewpoint, there is the meeting of environmental considerations. The Energy White Paper seeks to combine and update these issues whilst seeking to achieve the Government's target of reducing carbon dioxide (CO₂) emissions by 60% by the year 2050. In this paper we try to look at some of the issues and examine the case for multi fuel heating use in the social housing sector.

THE ENERGY WHITE PAPER

The latest White Paper issued in February 2003 sets out how the government will achieve a 60% reduction in CO₂ emissions by 2050. This, it argues, is necessary to reduce the depletion of the ozone layer thus reducing global warming. It considers 3 issues that affect domestic heating.

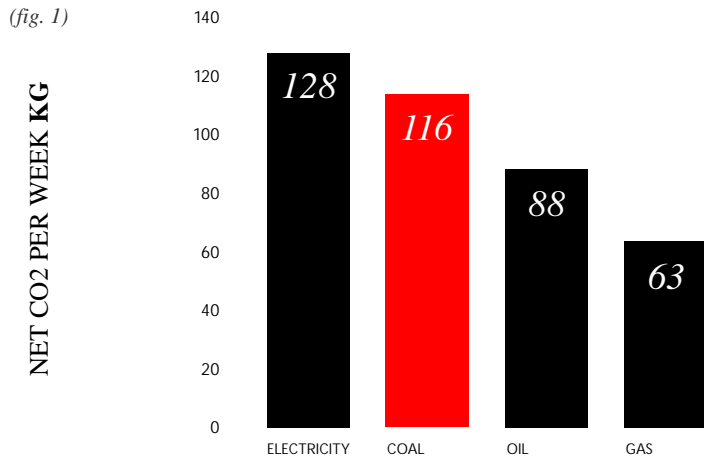
- 60% reduction in CO₂ by 2050
- Maintenance of Reliable, Affordable Supplies of energy
- Ensure that Each Home is Adequately Heated

For home heating to achieve this goal the White Paper looks for greater insulation levels plus high efficiency boilers fired mainly by gas and oil. This policy would, at first glance, seem to leave solid fuel heating, along with electric heating, out in the cold. This paper argues that far from rejecting multi-fuel heating social landlords should see how the benefits provided by this form of heating meet and exceed the aims of the White Paper. It also shows that, when compared with other forms of heating, it can provide lower net outputs of CO₂, greater stability of supply and lower running costs. It is fully controllable, thus meeting the requirements designed to ensure fuel saving and efficiency, and competes well against other forms of central heating. The paper also seeks to examine how all the various regulatory issues raised by Building Regulations, Decent Homes, SAP etc impact on domestic heating in general and multi-fuel heating in particular and how these requirements can be met.

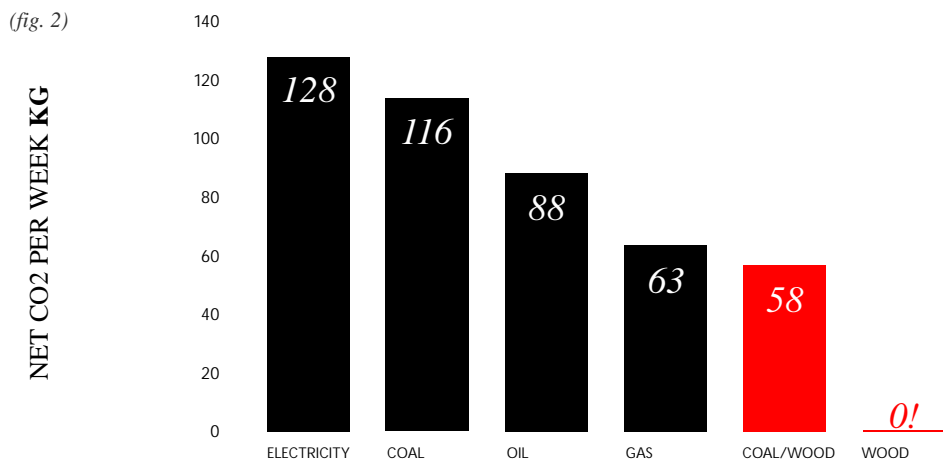


ENVIRONMENTAL ISSUES • CO2 REDUCTION

The main thrust of the White Paper is a reduction in CO2 emissions As is shown by the White Paper title Our Energy Future Creating a Low Carbon Economy. Traditional solid fuel heating has not fared too well in the CO2 emission stakes due to slightly lower boiler efficiencies and coal's higher CO2 / Kwh rating. On a graph (fig. 1) for a typical house it shows up like this:



As can be seen on the CO2 emissions scale solid fuel heating, whilst better than electric, is still behind oil and gas condensing boilers. The White Paper makes it clear however that there is a need for innovative ways in which net CO2 can be reduced and multi-fuel room heaters and stoves, such as the Charnwood LA (pictured left) provide a simple yet dramatic way of achieving such a reduction. If wood, just 11kgs per day (less than an averaged size log basket full) were to be mixed 50/50 with anthracite then the net CO2 emissions would be as follows (fig. 2):



This clearly demonstrates that with very little effort net CO2 emission levels can be dramatically cut to that of less than an efficient gas boiler. This is good for the tenant, the landlord and the environment. Sourcing wood for fuel is becoming even easier in rural areas where the bulk of solid fuel heating is installed. Britain still has an infrastructure of coal merchants, many of whom will supply wood. There are also numerous wood merchants willing to supply and, as they are local, this further reduces CO2 by local buying - all this in addition to stimulating the local economy and encouraging the use of renewable fuel.



NEW ENVIRONMENTAL SOLID FUEL INITIATIVES



As well as the burning of logs, either mixed with coal products or alone, there are other developments that are underway which will make multi-fuel burning even easier. Tower Colliery for instance, a privately owned anthracite mine in Wales, has developed an anthracite/sawdust mixed briquette. This fuel makes good use of both anthracite dust and sawdust. Its burning characteristics give a long lasting attractive fuel producing less net CO₂ than a gas boiler (see fig 2, page 3). As well as the Tower Colliery initiative there are a number of

schemes investigating the use of biomass as a fuel. The recent Royal Commission report Biomass as a Renewable Energy Source strongly advocates the use of such a fuel. We would argue that our range of multi fuel heating stoves, burning renewable fuels, can make a significant impact in the route to a low carbon economy.

MAINTENANCE OF RELIABLE, AFFORDABLE SUPPLIES OF ENERGY

The Energy White Paper makes it clear that it aims to create a reliable and affordable energy market. It envisages that by 2006 the UK will be a net importer of gas and by 2010 a net importer of oil. It further states that by 2020 75% of the UK's energy needs will be imported. In the 15 months since the White Paper was published the global energy market has altered dramatically. Oil executives have been forced to resign due to overstatement of reserves, oil prices have breached the 50 dollars a barrel price and both gas and electricity prices have risen and are forecast to rise by well over the rate of inflation. All these rises have been fuelled by three main factors a) A concern over reserves (North Sea oil peaked production in 1999 for example), b) An upsurge in demand, mainly from China, India and USA, c) Terrorist attacks and threats.

As analysts debate over the seriousness of these events it is very clear that energy prices will rise in the future as fossil fuels are depleted. These factors make multi-fuel heating more attractive. Locally grown wood and indigenously produced coal combine to make a stable and cost effective form of heating. It is true that solid fuel central heating is less than 5% of the total, although this figure is reportedly higher in the social housing sector. Having said this, any small reduction in dependence on imported fuels is good for the country and highly beneficial to the tenant, especially if as predicted, energy shortages occur.

Our argument for multi-fuel heating for this area is clear stable UK supplies both for coal products and wood will ensure safe supplies. Competition and local supply will lead to cost-effective heating solutions which will further enhance the economic argument in favour of multi-fuel heating and satisfy the Fuel Poverty requirements of the White Paper.

The foregoing paragraphs have attempted to make the case for multi-fuel heating in the social housing sector. We now briefly look at current and proposed legislation and control and examine what effect this has and may have in future years.

REGULATION AND CONTROL

Document L

The main regulation for domestic heating is found in the Building Regulation Document L, where installation requirements and efficiency levels are found. It is government's intention to use the revision of this document to implement the requirements of the Energy White Paper. This revision is due in April 2005 and majors heavily on condensing gas and oil boilers. The efficiency levels of these boilers are high although technical issues still cast a doubt on their longevity. By tradition solid fuel boilers have been unable to reach such heights of efficiency although in recent years work has been carried out which shows that at part load running multi-fuel boilers are of much higher efficiency than at their rated output. As most boilers run at part load this efficiency gain favours multi-fuel over gas and oil where a part load drop in efficiency is normal.

What is being recognised, and thus influencing the revision, is that multi-fuel stoves are the only type of domestic heating appliances that can have a mix of fossil and renewable fuels. This has resulted in the government's intention to allow solid fuel/multi-fuel heating boilers provided they meet the current minimum efficiency level.

STANDARD ASSESSMENT PROCEDURE (SAP)

The SAP rating of properties has for some years been a requirement for social housing landlords. It takes into account, among a myriad of other things, the boiler efficiency, type and cost of fuel. Traditionally solid fuel stoves have had a low rating due to assumptions on efficiency and carbon dioxide output. Multi fuel heating boilers, when fitted with modern heating controls, meet the control side of SAP and the default efficiency figures are now being re-examined in the light of higher default efficiencies and different fuels now available. The current SAP tables are being revised and will be published in 2005

DECENT HOMES CRITERIA

Another regulatory standard for social housing landlords is the Decent Homes Standard. This sets out requirements for, amongst other things, insulation and heating systems for social housing. Programmable solid fuel boilers meet this standard which are coupled with insulation requirements. On the programme side the fitting of systems such as the Charnwood Solid Fuel Control System enables this standard to be met and also saves householders money in lowering fuel bills. The standard does not specifically mention multi-fuel boilers although, again with the changing energy emphasis, industry sources are keen to have this updated.

CONCLUSION

The purpose of this paper is to broaden the understanding of social landlords as to the advantages of multi-fuel heating. As a company we have been involved in this market for many years and are now the main supplier of this type of boiler. It is our view, and the view of many independent experts, that the energy cost and supply situation will create difficulties for home heating over the coming years. These difficulties will impact most heavily on those least able to afford it. Multi-fuel heating has always been an efficient and economical way to heat a home, in the future it can combine economy and efficiency with environmental benefits and stability of supply. We would ask social landlords, before embarking on any change to domestic heating in their properties, to consider the advantages multi-fuel heating can bring to their tenants, the environment and themselves.









CHARNWOOD
MODEL



OVERALL
OUTPUT








HEATING
CAPACITY

STOVE
OPTIONS

STOVE
EQUIVALENT

	LA 20	5.4kW	Roomheater <i>with optional domestic hot water boiler</i>	<ul style="list-style-type: none"> •Inset •F reestanding •Add-in boiler •Choice of colours 	PARKRAY 65/66
	LA 30	6.1kW	4 Radiators & domestic hot water	<ul style="list-style-type: none"> •Inset •F reestanding •Choice of colours 	PARKRAY 77/88
	LA 45	10.1kW to water	8 Radiators & domestic hot water	<ul style="list-style-type: none"> •Inset •F reestanding •Choice of colours 	PARKRAY 99
	LA 50	12kW to water	10 Radiators & domestic hot water	<ul style="list-style-type: none"> •Inset •F reestanding •Choice of colours 	PARKRAY 111

	SLX 20	5.4kW	Roomheater <i>with optional domestic hot water boiler</i>	<ul style="list-style-type: none"> •Inset •F reestanding •Add-in boiler •Choice of colours 	PARKRAY 65/66
	SLX 45	9.4kW to water	10 Radiators & domestic hot water	<ul style="list-style-type: none"> •Inset •F reestanding •Choice of colours 	PARKRAY 99

	COUNTRY 4	4kW	Roomheater <i>with optional domestic hot water boiler</i>	<ul style="list-style-type: none"> •Multi-fuel grate •Add-in boiler •Choice of colours
	COUNTRY 6	6kW	Roomheater <i>with optional domestic hot water boiler</i>	<ul style="list-style-type: none"> •Multi-fuel grate •Add-in boiler •Canopy •Choice of colours
	COUNTRY 8	8kW	Roomheater <i>with optional domestic hot water boiler</i>	<ul style="list-style-type: none"> •Multi-fuel grate •Add-in boiler •Canopy •Choice of colours
	COUNTRY 12	12kW	Roomheater <i>with optional domestic hot water boiler</i>	<ul style="list-style-type: none"> •Multi-fuel grate •Add-in boiler •Canopy •Choice of colours
	COUNTRY 8b	9.5kW	4 Radiators & domestic hot water	<ul style="list-style-type: none"> •Multi-fuel grate •Canopy •Choice of colours
	COUNTRY 14b	14kW	10 Radiators & domestic hot water	<ul style="list-style-type: none"> •Multi-fuel grate •Canopy •Choice of colours
	COUNTRY 15b	15kW	12 Radiators & domestic hot water	<ul style="list-style-type: none"> •Multi-fuel grate •Choice of colours

CHARNWOOD have specialised in Multi-fuel heating for over 30 years have been a major supplier to local authorities for 20 years.

CHARNWOOD' S extensive research into eco-friendly forms of heating has resulted in the widest range of multi-fuel stoves on the market to suit virtually every home heating scenario. The stoves and fires include features such as highly advanced multi-fuel grate systems and clean-burn air-wash controls.

A selection of our multi-fuel stoves and fires are shown here. For further details on these and other ranges please contact our sales office on 01983 537777



