DG 532-2

Digest

Renewable energy sources

How they work and what they deliver

Part 2: Wood fuels

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This Digest has been written to provide an overview of the technical and operational characteristics of biomass systems within the scope of the Microgeneration Certification Scheme (MCS). Standards and specifications are covered, including certification, safety and incentives (such as the Renewable Heat Incentive and Green Deal). Although some technical information is given, it is not intended as an installation guide. The intended readership includes landlords, housing associations, local authorities, developers, architects and consultants.

This is one in a series of four related Digests focusing on a renewable energy technology commonly used in domestic buildings. The other technologies covered include photovoltaics, heat pumps and solar thermal collectors.

A wood fuel is matter that can be burned which is derived from recently living organisms, a marked difference to fuel derived from fossil fuels

Introduction

Biomass energy is generated from burning biomass fuel (sometimes abbreviated to wood fuel) that is derived from recently living organisms to produce usable heat. They differ markedly from fossil fuels such as gas, heating oil and coal, in that they do not require millions of years of processing within the earth before they can be used. This results in a short cycle from living organism to usable product, allowing for a sustainable supply where it is possible to match the rate of consumption to the rate of production. Biomass can be of animal or plant origin, but in the context of MCS and the built environment, the biomass fuel is typically derived from wood or cereal.

The carbon neutral status of biomass fuel is the subject of debate. The carbon contained within a biomass fuel has only recently been drawn from the atmosphere, and so any CO_2 released during its combustion is not considered as a contributor to atmospheric levels. However, CO_2 is generated during processing and transport of these fuels. This should be considered when assessing their impact. The amount of this CO_2 will be dependent on the type of biomass being produced as well as the location of the harvesting of the biomass relative to the location of the system in which it is to be burned.

Typically, wood fuel used in those installations falling within the scope of MCS will be in one of three forms: logs, wood chip and pellets; the amount of carbon emitted during processing is different in each case.