Promoting microgeneration

As energy costs continue to rise and climate change concerns grow in the public consciousness, low-carbon technology and microgeneration will play a significant role in the world's future energy plans.

In the UK alone, the launch of the UK Government's 'Green Deal' microgeneration strategy in 2011 saw spending in this area peak at 1.4 bn in 2012, according to Statista.

Growing opportunity, therefore, for those designing, manufacturing, assembling and installing microgeneration units. 5 June marks World Environment Day, and we're taking a look at how a standards-based approach will help ensure your organization can harness the potential in this area, by delivering safe and reliable products and services.

One of the best ways to achieve this is to gain accreditation to a Microgeneration Certification Scheme (MCS). Although not mandatory it sends a clear signal that you are committed to best practice. It also helps distinguish your business from uncertified competitors, demonstrating consistent quality.

For those wanting to gain this certification, BSI offers a combined MCS and Kitemark scheme for products that produce electricity and heat from renewable sources.

We've outlined some MCS options below, including schemes for solar thermal panels, solar photovoltaic modules, wind turbines, heat pumps, solid biomass-fired heating appliances and micro combined heat and power units (micro-CHP).

Solar thermal collectors (MCS 004)

Perhaps, the most universally recognisable method of microgeneration are solar collectors (or panels), which use sunlight to directly heat water or air. BS EN 12975-1 specifies durability requirements (including mechanical strength), reliability and safety for liquid heating solar collectors. As panels are placed outside – often on roofs – compliance is also expected with regards to weather-proofing.

Solar photovoltaic modules (MCS 005)

Similar to solar thermal panels, solar photovoltaic modules (PV) create electricity from sunlight. PV modules come in different forms and have different associated standards (the BS EN 61215 series) for both crystalline silicon

terrestrial, and thin film terrestrial modules. Like solar panels, they must comply with additional weather-proofing requirements to ensure they can withstand prolonged exposure in certain climes.

Micro and small wind turbines (MCS 006)

Generally, this only applies to small-scale wind turbines with an output not exceeding 50kW at 11.0ms-1. BS EN 61400 is a multi-part standard providing the design and safety requirements for small wind turbines. In addition, the British Wind Energy Association (BWEA) also publishes performance and safety standards.

Heat pumps (MCS 007)

Heat pumps come in many forms – solar, water source, or solar assisted, for example. The corresponding MSC applies to most of them, with BS ISO 14511 relevant for air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling.

Solid biomass-fired heating appliances (MCS 008)

This scheme applies to wood-fuelled heating systems (such as log burners), also called biomass systems, with nominal heat output up to 45 kW. There are several useful standards, depending on the design of the appliance to help compliance. For example, BS EN 16510-1 specifies design, manufacture, construction, safety and performance requirements for solid fuel fired appliances.

Micro-CHP (MCS 014, MCS 015)

Micro CHP products aren't a renewable energy source in the typical sense, but their energy efficiency brings them into the microgeneration category.
They generate heat and electricity at the same time from the same energy source and small-scale CHP units intended for domestic use are roughly the same size as a boiler. All must comply with 'CE marking' regulations for product design and G83/1 for connection to the UK electricity energy network.

In addition, noise emissions should comply with BS EN 15036-1 to ensure they are not disruptive to daily life.

In summary, taking a standards-based approach is the best way for microgeneration-related companies to gain MCS certification. By demonstrating consistent manufacturing and installation quality, safety and compliance businesses can position themselves for growth.

Summary:

- Rising energy costs and climate change concerns increasingly point to microgeneration technology for future energy supply

- Microgeneration Certification Schemes (MCS) demonstrate best practice

- Solar thermal collectors (MCS 004): use BS EN 12975-1 for durability (including mechanical strength), reliability and safety requirements for liquid heating solar collectors.

- Solar photovoltaic modules (MCS 005): use the BS EN 61215 series for both crystalline silicon terrestrial, and thin film terrestrial modules.

- Micro and small wind turbines (MCS 006): use BS EN 61400 for design and safety requirements for small wind turbines. In addition, the British Wind Energy Association (BWEA) also publishes performance and safety standards.

- Heat pumps (MCS 007): BS ISO 14511 is relevant for air conditioners, liquid chilling packages and heat pumps with electrically driven compressors for space heating and cooling.

- Solid biomass-fired heating appliances (MCS 008): several useful standards, depending on the design of the appliance to help compliance. For example, BS EN 16510-1 specifies design, manufacture, construction, safety and performance requirements for solid fuel fired appliances.

- Micro-CHP (MCS 014, MCS 015): must comply with 'CE marking' regulations for product design and G83/1 for connection to the UK electricity energy network. Noise emissions should comply with BS EN 15036-1 to ensure they are not disruptive to daily life.

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