MCS Guidance Document

Understanding and applying the 70kWth thresholds within the MCS Installation Standards for renewable heat technologies

v1.0

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1. Introduction and Scope of this Paper

This document has been produced to provide guidance on how to interpret the scope clauses under each of the heat technology MCS Installation Standards. This document provides clarity on all installations being designed in accordance with the Scheme requirements including, domestic and non-domestic applications.

2. Definitions

The following definitions set out the meaning of the following terms used within this guidance:

- Area

All or part of a property that has been defined for the purposes of calculating the space heating demand and any domestic hot water demand (if applicable).

- Gross heat demand

The total heat demand of any property taking into account all of its area(s) and any uplift factors.

- MCS Certified Product

An MCS Certified Product that is designed to provide renewable heat to a system.

The MCS Certified Product's gross output shall not exceed 45kWth according to its certified output at the type test conditions.

- Plant

One or more heat producing appliance(s) connected to meet the heat demand, these appliances may or may not be hydraulically linked.

- Property

One or more buildings that share the same heat distribution system and are considered to be a single rateable property.

- Renewable heat demand

The total heat demand that the MCS Certified Product(s) are designed to cater for.

- System

An assembly of heat producing appliance(s), pipes, circulators, valves, controls, and similar to meet the heat demand of a property

NOTE: One or more system(s) may be installed and / or connected together to meet the gross or renewable heat demand of the property

3. Background

The MCS Certified Product threshold of 45kWth stems from the Energy Act (2004) under the definition of the term "Microgeneration"[1].

It is possible to collate evidence that could see this limit raised in line with appliance innovation and market demand. However, at the time of writing, this opportunity is not available as it is fixed by the Energy Act (2004).

Appliances equal to, or less than 45kWth output and that are MCS Certified are widely available across all technology groups.

When undertaking the design of a system the threshold of 45kWth is often referred to as the "limit" or "threshold" for that particular system. This 45kWth threshold refers to the appliance as opposed to the system.

This is particularly important to note when considering systems where the appliance output can vary according to external factors, such as an Air Source heat pump where its rating is usually determined at 7°C air temperature but where the design is being undertaken based on an ambient air temperature of ~-3°C which will result in a reduced thermal output capacity.

The MIS Standards now define their scope as:

"Design heat load requirement of up to 70kWth as determined…"

4. Current Position

Currently the MCS scheme documents permit installers to undertake system design, installation and certification of systems with a heat demand no greater than 70kWth under the following conditions:

1. Any heat producing appliance(s) installed and certified for use under MCS, e.g. an MCS Certified or Solar Keymark product, does not exceed 45kWth.
2. The gross heat demand has been calculated in accordance with the relevant MCS heat technology installation standard(s).
3. The heat demand for any given area is no greater than 70kWth.

The above conditions would allow for the installation of multiple MCS Certified Products (or equivalent) no greater than 45kWth each, to meet the gross heat demand of a given property. If this is the case then the MCS certified Installation Company shall ensure they hold the relevant competencies.

[1] Energy Act (2004) (See Section 6 – References of this document)

This will usually mean that MCS Certified Installation Company shall divide the gross heat demand of the given property into areas with a heat demand of no more than 70kWth per area, and apply the system design principles accordingly.

Where this is the case it may or may not be necessary to hydraulically separate these area(s), this will be a matter for the designer to consider for each installation.

In all cases the installation company shall ensure that they have the necessary competencies to design, install, commission and handover the appliances relevant to the specific system concerned.

It is therefore possible for an installation with a gross heat demand in excess of 70kWth to have its heat demand fully (or partially) met by the use of multiple MCS Certified Products (or equivalent).

NOTE: Examples of how this guidance should be applied are given in appendix (A)

5. Raising MCS Certificates from the MCS Installation Database

When an installation comprises of multiple MCS Certified Products (or equivalent) it will be necessary to raise multiple MCS Installation Database certificates where the products installed hold their own individual MCS certification numbers. Each MCS Installation Database Certificate will detail the specifics for the given MCS Certified Products (or equivalent) in relation to the overall system.

The creation of multiple MCS Installation Database certificates for a single system has always been possible and therefore no change has been implemented to the way in which MCS Installation Database certificates are raised.

6. References

1. Energy Act (2004)

    Chapter 2 82 (6)

    For the purposes of this section “microgeneration” means the use for the generation of electricity or the production of heat of any plant—

        (a) which in generating electricity or (as the case may be) producing heat, relies wholly or mainly on a source of energy or a technology mentioned in subsection (7); and

        (b) the capacity of which to generate electricity or (as the case may be) to produce heat does not exceed the capacity mentioned in subsection (8).

    Chapter 2 82 8(a) & (b)

    That capacity is—

        (a) in relation to the generation of electricity, 50 kilowatts;

        (b) in relation to the production of heat, 45 kilowatts thermal.

Appendix (A)

Example 1.

A single property with a gross heat demand of 135kWth is to have **all of its heat demand** met by a renewable heat system.

Multiple MCS Certified Products of up to 45kWth can be configured into a single plant to meet the gross heat demand.

The designer shall assess the installation so as to apply design principles aligned to their competencies (systems up to 70kWth).

The system may be one hydraulic circuit or multiple hydraulic circuits depending on the design.

The total combined appliance output may exceed the gross heat demand.

Note: This is likely to be necessary if the technology is a heat pump.

Note: In these cases, if the system is intended to attract financial incentives, e.g. the Renewable Heat Incentive, the MCS Certified Installation Company shall ensure they follow the guidance as set out in the domestic RHI metering guidance document available on the MCS website and referenced within the MCS heat technology installation standards.

Example 2.

A single property with a gross heat demand of 265kWth is to have **part of its heat demand** met by a renewable heat system.

Multiple MCS Certified Products of up to 45kWth can be configured into a single plant to meet the renewable heat demand.

Conventional heating appliance(s), e.g. gas/oil/electric, can be combined with the MCS Certified Product(s) (or equivalent) to meet the balance of the gross heat demand.

The designer shall assess the installation so as to apply design principles aligned to their competencies (systems up to 70kWth).

The system may be one hydraulic circuit or multiple hydraulic circuits depending on the design.

The total combined appliance output may exceed the gross heat demand.

Note: This is likely to be necessary if the technology is a heat pump.

Note: In these cases, if the system is intended to attract financial incentives, e.g. the Renewable Heat Incentive, the MCS Certified Installation Company shall ensure they follow the guidance as set out in the domestic RHI metering guidance document available on the MCS website and referenced within the MCS heat technology installation standards.