



To: Ground Source Heat Pump Association and other stakeholders with an interest in Ofgem's Renewable Heat Incentive Scheme

Promoting choice and value for all gas and electricity customers

Renewable Heat Incentive Scheme

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Dear Stakeholder,

Renewable Heat Incentive (RHI) – eligible heat criteria for Ground Source Heating & Cooling (GSHC) systems

Many Ground Source Heat Pump (GSHP) systems inject recovered or waste heat into the ground as an aid to improving system efficiency, and as it can be a cost effective cooling approach – they are termed Ground Source Heating and Cooling (GSHC) systems. This letter summarises an approach that owners of such systems may wish to consider when seeking to participate in the Renewable Heat Incentive.

Under the RHI Regulations 2011, tariff payments for ground source heat pumps (GSHPs) can be made **only** for extracted heat that naturally occurs in the ground. As a consequence, heat that is injected into the ground and subsequently extracted by a GSHC system is ineligible for support payments. Until now it has been difficult for applicants to show us how they will be able to quantify this ineligible heat in order to exclude it from the eligible heat generation for which they are seeking RHI payments.

Following the identification of this issue for eligible GSHC systems, a simple solution was put forward by the Ground Source Heat Pump industry. This has now been validated by independent technical consultants commissioned by Ofgem, and the approach can be used as an interim solution by RHI applicants. The method uses the system's Coefficient of Performance (CoP) as a proxy for ineligible heat output¹.

For clarity and consistency Ofgem has recommended this approach, however all applications will be considered on their own merits allowing applicants to propose other methods.

Calculating eligible heat and support payments

Ofgem commissioned a technical review to refine and validate the approach. The data provided only allowed the independent consultants to identify two system categories -

¹ The Coefficient of Performance (CoP) is the ratio of heat output to operating energy input of a heat pump, and can be regarded as a measure of the efficiency of the system. In simple terms, the approach presented here is based on the principle that by injecting heat into the ground, the efficiency (and therefore the CoP) of the GSHC system will be increased, and that this increase in CoP will be dependent on the amount of (ineligible) injected heat. Therefore, by comparing the typical CoP of combined 'non-heat only' heating and cooling systems with 'heat-only' heat pump systems, it is possible to determine a typical eligible proportion of heat utilised by the 'non-heat only' GSHC systems.

Heat Only & Non-Heat Only. Coefficient of Performance (CoP) values of 3.07 for Heat Only systems and 4.63 for Non-Heat Only systems have been recommended for use in calculating the proportion of eligible heat, and corresponding support payments. By reference to the DECC tariff model, these CoP values result in the following eligible proportions for heat generated by the installation, to calculate support payments. This is to be reviewed after one year, or at such time as Department for Energy and Climate Change (DECC) may amend the Regulations in relation to this issue, whichever is the sooner.

Eligible Proportions of heat generated by the installation

System Categories	Eligible Proportion of Heat Generation
Heat Only	100% of generated heat
Small Non-Heat Only (<100kWth)	72.3% of generated heat
Large Non-Heat Only (>100kWth)	64.7% of generated heat

N.B. Participants should note that as set out in the Regulations, periodic support payments must take account of all relevant aspects of heat use and generation. Some forms of heat use may not be eligible for RHI for example, and applicants will have to address these aspects separately to the issue covered in this letter.

Implications for participants

Owners of accredited installations who proposed this method as part of their application are entitled to receive payments based on this agreed percentage of eligible heat for the duration of their participation in the RHI scheme. Should a participant make amendments to their system in the future, in line with an alternative approach (e.g. by installing additional metering or monitoring, or devising a site-specific model) they should notify us of these amendments, and we would consider such information on its merits.

For more information please contact the RHI Team on RHI.Enquiry@ofgem.gov.uk, or 0845 200 21 22.

Yours faithfully,

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