REA Response to the Energy Security and Net Zero Select Committee: 'Heating our Homes'

The Association for Renewable Energy & Clean Technologies (REA) is pleased to submit this response. The REA represents industry stakeholders from across the sector and includes dedicated member forums focused on biomass heat, green gas & hydrogen, geothermal and wider heat decarbonisation technologies. Our members include generators, project developers, heat suppliers, investors, equipment producers and service providers. Members range in size from major multinationals to sole traders. There are over 500 corporate members of the REA, making it the largest renewable energy trade association in the UK.

Given the range of organisations the REA represents and our expertise, Dr Nina Skorupska, the REA Chief Executive or an REA policy expert would be happy to provide oral evidence to the committee during the inquiry.

Current energy efficiency support mechanisms remain highly focused, while broader schemes have been badly implemented. To support more properties, schemes like ECO+ need to be expanded.

Part of the reason for the low installation rate of energy efficiency materials is the fact that government policies regarding retrofit schemes have to date been relatively unambitious, narrowly focused and poorly implemented. For example, the only current successful scheme, the Energy Company Obligation (ECO), is correctly focused on the most vulnerable, low-income households. However, there has been a distinct lack of consistent and reliable support to drive mass energy efficiency installations in other properties, where fuel poverty may not be a concern, but households still lack the immediate capital to invest in energy efficiency measures.

The schemes that have been in place to support such properties have been poorly implemented and, as such, short-lived. This includes the Green Deal, which was cancelled in 2015 and was undermined by a high interest rate applying to supplied Government loans, seeing low uptake. Equally, the Green Homes Grant, which due to its design and implementation being rushed, lasted only six months from September 2020 to March 2021, before the Government cancelled it. These failures left the sector without a stable route to market and consumers frustrated at a lack of consistent support.

In December 2020 it was estimated that of the 29.9 million properties in Great Britain, 30% of properties with a cavity wall had no insulation (equivalent to 6.1 million properties); 44% of properties with a loft had no loft insulation (equivalent to 8.4 million properties); and 91% of properties with solid walls had no solid wall insulation (equivalent to 7.7 million properties) [1]. The costs of addressing these issues remain high, and many households still need some capital support to make the necessary

investment. Therefore, there is still considerable progress to be made in retrofitting the UK's housing stock.

The government should now consider the introduction of a major energy efficiency retrofit programme. Currently, the Energy Company Obligation (ECO) is the main scheme for delivering energy efficiency measures, such as installing insulation or upgrading a heating system. The ECO has delivered 3.5 million energy-efficiency measures for 2.4 million homes since it was launched in 2013 [2]. Whilst it is positive that the scheme has been directed towards low-income, fuel-poor and vulnerable households, we believe that going forward wider support should also be made available for all households.

The introduction of the ECO+ under the Great British Insulation Scheme was a positive move for extending support for those who do not currently benefit from any other government support to upgrade their homes. However, unlike the ECO whole-house approach, the Great British Insulation scheme is focused on single lower-cost measures – such as loft insulation or cavity wall insulation. Whilst this helps reach more households, it should also be expanded to look at delivering energy efficiency for the whole house. Furthermore, ECO+ is expected to help around 300,000 households, in addition to the 450,000 low-income and vulnerable households that ECO4 is expected to help [3]. Given that there are still many millions of poorly insulated houses, there is an urgent need for funding to be expanded to cover a wider range of households.

The EPC Standard Assessments Procedure Needs to be reformed to better support the installation of low-carbon heat and energy-saving materials.

In addition to a lack of support, the way the UK considers the energy efficiency rating of a property remains outdated. Energy Performance Certificates (EPCs) are a tool that offers an A-G rating based on energy efficiency technologies and immoveable features in a building, such as insulation and boilers. EPCs are determined by the Standard Assessment Procedure (SAP), but the SAP does not use up-to-date figures on cost, efficiency, and carbon intensity. These outdated methods used to calculate EPCs need to be updated as they regularly produce inaccurate results that underestimate low-carbon technologies while promoting the continued use of fossil-fuel heating systems.

We hope that the next version of the SAP (SAP 11), which is supposed to be consulted this year, ensures updated methodologies where renewable energy is the primary focus within SAP. This would more fairly reflect the benefits of renewable energy and low-carbon technologies and should be updated more frequently to ensure correct assumptions.

Government energy efficiency and heat decarbonisation policies need to ensure support for the right technologies in the right situation.

A complete range of renewable heat technologies will be required to successfully decarbonise heat across all UK homes (see more information below). Currently government are focused on an electrification-first approach, utilising heat pumps. Heat pumps are of critical importance to the decarbonisation of most UK homes, but they may not be the optimal solution for every building. For example, Government modelling estimates that 20% of off-gas grids may not be best placed to use a heat pump, either due to low energy efficiency standards or poor local infrastructure to support them [3]. Given there are 1.1 million off-gas grid properties, this means there are likely over 220,000 properties where other solutions may be required.

Bioenergy solutions including Biomass Boilers and biofuels must also be supported to ensure such properties have a route to decarbonisation. While their application will be smaller than compared to heat pumps, the potential market size is still over ten times the size of the current markets for these technologies in the UK. Heat policy going forward should focus on ensuring the right technology is used for the right situation. This must consider a wide variety of factors including the level of energy efficiency within the property, the infrastructure availability for that heat source (including power/gas grid or feedstock availability), and the level of savings provided in terms of carbon abatement and cost.

Consumers must be educated and provided evidence on all the options available to them, and proper heat requirement surveys done to ensure the right technology is being installed in the right property.

Since the closure of the Domestic Renewable Heat Incentive, replacement policies have significantly lacked ambition.

Since the ending of the RHI, the main scheme available for switching to renewable heating systems is the Boiler Upgrade Scheme (BUS). The BUS has a budget of £450 million for grant funding available over three years from 2022 to 2025 [4] – this is expected to fund a total of 90,000 installations (e.g., air-source heat pumps or biomass boilers) supported through a £5000 - £6000 grant. Given the government aims to install 600,000 heat pumps annually by 2028 there remains a serious policy gap with regards to the ambitions for the decarbonisation of heat.

The current uptake of the Boiler Upgrade Scheme has been poor. From May 2022 to June 2023 less than 13,000 Grant Vouchers have been redeemed.[5] Given this is a three-year scheme, there should be nearly 30,000 installations in year one of the scheme if it is to reach its target. While more needs to be done to promote the scheme, part of the issue is that Grant is not attractive enough to drive installations. The Mean average cost of installation being supported by the is over £20,000. As such the £5000 grant is not proving attractive enough to drive significant numbers of installations. A no or low-interest loan should be offered in conjunction with the BUS to help cover the

remainder of the capital costs. This will also help mitigate low-quality or undersized projects by enabling consumers to consider more expensive installations. Such a loan is likely easiest supplied by the Government and can be modelled on the successful Home Energy Scotland Loan Scheme, which provides 0% interest loans up to £17,500 for renewable energy systems. This would make the BUS much more attractive to consumers.

Consumer Protection is crucial, current MCS proposals to no longer require installers to be part of a consumer code will reduce consumer protections.

Consumer protection is vitally important to ensuring good consumer experiences and a long-term sustainable renewable heat sector. Recently, the Microgeneration Certification Scheme (MSC), which renewable heat installers need to be accredited to install renewable technologies supported by Government schemes, have consulted on changes to their consumer protection requirements. This includes removing the requirement for installers to also be members of a Consumer Code, which sets high standards for how consumers should be treated for the full journey of the installation and provides a dispute resolution service if the customer needs to raise a complaint against the installer. [6]

Whilst the proposed changes are presented as simplifying the current scheme, we raise concern that they expedite certification for contractors by removing the need for consumer code membership and replacing it with a significantly less rigorous Consumer Duty commitment. This could potentially enable poorly performing installers to attain MCS certification more easily. Given the level of expected deployment of both onsite generation and low-carbon heating systems required to meet the government's net zero ambitions, ensuring high-quality standards and appropriate dispute resolution services is essential and should not be watered down at this time.

The rebalancing of energy bills, between gas and electricity, remains an important factor in supporting the commercial case for consumers to install low-carbon heating systems.

A major barrier to the installation of renewable heating systems has historically been the relatively low cost of using fossil fuels for heating, in particular gas prices. While the energy crisis has seen a substantial rise in energy prices, which has driven increased public interest in domestic installations of renewables, we highlight that energy bills remain structured to favour gas heating solutions which undermine the commercial case for change, especially as fossil energy prices fall.

Currently, taxes on the electricity proportion of the bill are much higher than on gas. As a result, it is very difficult to provide an ongoing economic case for consumers to switch to a renewable heat system that uses electricity (i.e. a heat pump) if their operational heating costs can be expected to significantly increase. In the long term, there is a need

for energy bills to be rebalanced, so gas and electricity costs become more even – particularly as the government is encouraging a move to electrification. Carbon taxation on heating would send an appropriate and strong price signal to the market for the use of renewable alternatives including biomass, heat pumps and biofuels. Having a clear trajectory in place would make users consider the future costs of using fossil-based heating options when replacing heating systems and drive demand for renewable options.

Further technologies also need to be considered when it comes to the decarbonisation of heat within homes.

While we recognise that the Terms of Reference of this inquiry do not consider the range of low-carbon heating solutions that will be needed to decarbonise homes in the UK, we also would like to take the opportunity to highlight the importance of the below options. All of these will be needed to meet our heat decarbonisation needs:

Heat Pumps: Heat pumps are of high strategic importance. Air source heat pumps are particularly effective in buildings with high energy efficiency measures, such as new builds, while ground source heat pumps are also able to provide higher heat loads. The simultaneous electrification of heat and transport needs to be carefully considered with upgrades to the electricity grid and household electricity supplies needing to be coordinated.

Biomass Heat: Biomass boilers are the largest contributor to heat decarbonisation in the UK today following the RHI. Biomass is a versatile alternative where electrification may not be possible, particularly where levels of energy efficiency are low, typically in off-gas grid rural areas. There are also on-grid opportunities, such as schools, hospitals or residential developments combined with heat networks. Biomass Boilers are poorly supported under the Boiler Upgrade Scheme, despite them being a potential solution for over 220,000 off-gas grid properties. [7]

BioLPG and rDME: Bio propane (sold as bioLPG or rDME) is already available in the GB market and, like biomass provides an alternative where electrification isn't possible. Biopropane is chemically identical to conventional propane (LPG) so can be blended in any ratio with conventional LPG, allowing a smooth transition to a 100% renewable product. An existing LPG boiler can use BioLPG, so disruption is minimal, making it particularly affordable. The UK's liquid gas industry has committed to a 2040 100% renewable target.

Anaerobic Digestion: Biomethane from AD is an established and commercially ready technology, offering a low-regrets, cost-effective way to decarbonise the gas grid today. DES NZ has previously identified that biogas (including biomethane) has an important role to play both now and in the longer term, reducing greenhouse gas emissions and supporting jobs in rural areas [7].

Solar thermal: Solar Thermal provides baseload water heating which may be most suited to domestic or commercial settings with high energy efficiency levels, or low heating requirements.

Hydrogen: Several projects are looking at the role that hydrogen can play in decarbonising the UK gas grid. The blending of hydrogen up to 20 vol% within natural gas supplies has been identified as an early enabler of the hydrogen economy by the Government, detailed within the UK Hydrogen Strategy. The REA support the blending of Hydrogen into the gas distribution and transmission network to support the decarbonisation of the gas grid and get the hydrogen economy going. The REA has previously, with Hydrogen UK, reported on the value of blending in the nascent UK Hydrogen Economy. [8]

Deep Geothermal: Deep Geothermal provides baseload dispatchable green heat perfectly suited to powering renewable heat networks, as it does in the Paris basin region which has over 40 geothermal plants feeding district heating networks across the city [9]. While the Non-Domestic Renewable Heat Incentive (ND RHI) brought geothermal projects close to successful deployment in the UK, Covid-19-related delays and the nature of these infrastructure schemes means there is now a group of projects that are shovel-ready but with no route to market. Given its potential, a dedicated Geothermal Development Incentive should be established to get the first few projects delivered. The sector could also offer opportunities and employment to people with the same skillset transitioning from the oil and gas sector. [10]

Thermal Heat Storage Batteries The Committee should also consider the role of thermal battery energy storage which can be used to efficiently store heat within residential properties. At the domestic scale, up to ~12kWh, they can be used to make heating domestic properties more efficient, replace hot water storage tanks, and provide new opportunities to save energy and costs.

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References

[1] BEIS (2021) Household Energy efficiency detailed release: Great Britain Data to December 2020
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/970064/Detailed_Release_-_HEE_stats_18_Mar_2021_FINAL.pdf

[2] BEIS (2022) Government joins with households to help millions reduce their energy bills https://www.gov.uk/government/news/government-joins-with-households-to-help-millions-reduce-their-energy-bills

[3] DES NZ (2023) Biomass Strategy 2023
https://www.gov.uk/government/publications/biomass-strategy

[4] Ofgem Boiler Upgrade scheme https://www.ofgem.gov.uk/environmental-and-social-schemes/boiler-upgrade-scheme-bus

[5] DES NZ (2023) Boiler Upgrade Scheme Statistics June 2023 https://www.gov.uk/government/collections/boiler-upgrade-scheme-statistics

[6] MCS (2023) MCS Scheme Redevelopment Consultation, https://mcscertified.com/mcs-scheme-redevelopment/

[7] DES NZ (2023) Biomass Strategy 2023 https://www.gov.uk/government/publications/biomass-strategy

[8] REA and Hydrogen UK (2022) REA & Hydrogen UK Publish Report on Hydrogen Blending, https://www.r-e-a.net/resources/rea-hydrogen-uk-publish-report-on-hydrogen-blending/

[9] EGEC Geothermal (2019*)* Geothermal Energy Use, Country Update for France, http://www.afpg.asso.fr/wp-content/uploads/2019/06/EGC-2019-Country-Update-For-France.pdf

[10] REA and ARUP (2022) Government urged to help deliver a 'world leading' deep geothermal sector to secure the UK's 'green recovery' https://www.r-e-a.net/government-urged-to-help-deliver-a-world-leading-deep-geothermal-sector-to-secure-the-uks-green-recovery/