Petersfield Climate Action Network Response to Govt. Consultation on Boiler Upgrade Scheme – Part 1.

Part 1:

Question 1: Do you agree with the proposal to amend scheme eligibility criteria to allow more installations of heat pumps in combination with other electric heating appliances?

Yes: The current rigid criteria constrain the potential take-up of LCH technologies. The wide variations in existing property types, ages, sizes, construction methods and preexisting heating systems mean that to develop viable, effective and value for money retrofit LCH designs requires a golf-bag of system components. A "one size fits all" approach will continue to hamper opportunities to develop the bespoke system designs required for many properties.

Question 2: Do you have any views on the proposed eligibility criteria that should apply to multi-technology systems?

Yes: Explicitly excluding hot-water only heat pumps appears inconsistent with the inclusion of air-to-air heat pumps which in general do not provide hot water. It is saying that if the "best" design of LCH technology system for property is built around an air-to-air heat pump then there will not be a grant for that element, whereas if a hydronic heat pump system is used then hot water is covered. There is thus the potential for the criteria to drive installers towards sub-optimal solutions to maximise the available grant. The installation costs for an air-to-air heat pump are likely to be lower than for a hydronic heat pump system in many cases, so that the combined grants for an air-to-air system and a hot water only heat pump system together would be likely still to be below that for a hydronic system whilst potentially delivering a more efficient and effective system.

Question 3: Should the BUS provide grants to support the installation of air-to-air heat pumps?

Yes: Whilst it is true that the majority of existing UK homes have hydronic central heating systems, it is far from clear that re-using the existing infrastructure (pipework, radiators etc) from those systems is the most cost-effective way of delivering LCH systems. For many properties, whilst re-use of existing pipework etc can in general be made to work effectively, achieving that end requires significant design expertise which is likely to add to costs, as well as the potential need for modifgication; it is also likely to be the case that the reduced water flow temperature delivered by a heat pump (say 50C or less as opposed to 70C or more for a gas boiler) will require a good proportion of the heat emitters (radiators) to be upgraded in size and/or efficiency, again adding cost. The advantage that air-to-air systems give in terms of providing cooling as well as heating is

mentioned in passing, but is likely to become increasingly strategically important in future and air-to-air heat pump systems provide a cost-effective means of mitigation. "Ultimately, not planning for future overheating and cooling systems could create a new performance gap in design, construction and occupant behaviour." (ref: "Cooling the UK housing stock post-2050s" - Fajat Gupta, Matt Gregg and Katie Williams – Journal of Building Services Engineering Research & Technology 2015, Vol36(2), pp196-220).

Question 5: Do you have any views on the advantages of certain types of air-to-air heat pumps that could be supported by the scheme, such as products that provide both space heat and hot water?

There are a very limited number of air-to-air heat pumps currently on the market which also provide hot water. Where property constraints permit it, these might provide a very cost-effective heating/cooling/hot water solution. However, in other house layouts they may not be installable cost-effectively and a separate integrated heat pump hot water tank allied to an air-to-air heat pump for space heating might provide a more optimal solution. Where, for example, a heat pump (of any flavour) is replacing a gas combiboiler, there may not be space for a hot water tank of any description and the best overall system design might require a heat battery or individual point of use systems. As noted previously, the bottom line is that the requirements must provide system designers the freedom to design effective systems which will often be bespoke, and must not have the effect of encouraging sub-optimal designs whose aim is to maximise the grant received.

Question 6: Do you have views on the appropriate grant level to support the installation of air-to-air heat pumps? Yes/No. Please provide evidence to support your response.

You state here the reality that air-to-air heat pumps can be considerably cheaper to install than hydronic heat pumps. It is unclear therefore why the focus continues to be on pushing solutions which provide lower value for money. Whilst not explicitly stating it, the policy clearly remains one of promoting hydronic heat pumps for larger properties (with a relatively large grant) and limiting uptake of air-to-air systems to flats or equivalent (by virtue of a relatively small grant). The sizing of the grants available seems to have more to do with assumptions derived from the relative sizes of the target properties for each heat pump type than it does with the merits of one heat pump type over another. There are plenty of examples of very efficient and effective air-to-air heat pump systems in larger properties. As an example, I would refer you to a YouTube channel: <u>https://www.youtube.com/c/TimKatsGreenWalk</u> which describes the owners' journey to installation of such a system (and removal of the existing hydronic system) along with design descriptions and energy/cost data.

Concluding therefore, the method of sizing the grants should not be related to the type of heat pump being installed; an alternative approach is needed.

Question 7: Should the cost of an integrated or separate electric hot water heating appliance be included in determining an appropriate grant level?

This question, as posed, is ambiguous. The cost of an electrically powered water heating system should be included in the grant as hot water uses of the order of one quarter of the total space heating/hot water heating energy budget, so it remains important that this moves away from fossil fuels. Whether that water heating system is integrated with, or separate from, the space heating system should be determined by the design choices for a particular property and should not drive the grant size or eligibility.

Question 8: Do you have views on a reasonable level of air-to-air heat pump deployment on the BUS if a £1,000 or £2,000 grant was offered? Please provide evidence to support your response.

As discussed above, the type of heat pump is the wrong metric in determining different grant sizes.

Question 9: Do you have views on other barriers (i.e. non-cost related) to installing airto-air heat pumps? Please provide evidence to support your response.

The provision of a much less favourable (or no) grant for installation of air-to-air heat pumps would be the biggest disincentive to install them.

Question 10: Do you have any views on whether government should provide grants to support the installation of electric heating technologies that are not heat pumps (e.g. heat batteries)?

Yes: Heat batteries (such as that produced by Sunamp) are effectively a surrogate for a hot water tank. As such they are no more than 100% efficient. Their prime advantage is that they store the heat energy through the means of a material phase change, which is then transferred to heat water when needed. As a thermal battery does not store water it takes up much less space than a hot water tank, so is helpful when space is at a premium. It has some benefits over other point of use heaters in that it stores the heat energy so can be "charged" when energy is cheap (or in the case of solar PV, free), or least carbon intensive, and doesn't load the grid so much at peak times.

It is not obvious that these advantages of heat batteries warrant government grants. It might be that the criteria for application of such grants should restrict them to technologies providing greater than 100% efficiency.

Question 11: What eligibility criteria should apply to other electric heating

technologies? Please provide evidence to support your response.

As suggested above, electric heating with no more than 100% efficiency should not attract grants. The move from fossil fuels to green energy such as electricity should be driven by progressive rises in the price of fossil fuels, requiring the breaking of the link between electricity and gas prices.

Question 12: Do you have views on the appropriate grant levels to support the installation of other electric heating technologies (e.g. heat batteries) if supported by the scheme? Please provide evidence to support your response.

No grant for these. See previous answers.

Question 15: Should consumer hire agreements be permitted alongside the BUS?

Yes. More than one survey demonstrates that upfront costs are a significant barrier to change for a large number of consumers. For example a 2024 Survey by Which? Magazine, 71% of homeowners who are aware of heat pumps consider them too expensive to install. Research by DESNZ in its Public Attitude tracker in Winter 2024 also found that amongst owner occupier household who said they are unlikely to install a heat pump, 50% cited installation costs as a primary barrier.

With this in mind, more creative subscription-led financing options would certainly be a relevant tool to break down barriers to entry that are inhibiting householders from making the transition to lower carbon heating methods. There are commerical organisations such as Homeserve and Fornax Energy who are already offering such models or indicating a willingness to do so.

It is strongly recommended that any such schemes are subject to strict accreditation and consumer protection measures to ensure adequate safeguards for consumers who would be required to potentially sign up to long leasing.

Clear definition of the nature of qualifying schemes would also be recommended. For example, what happens at the end of a subscription contract, would the equipment be owned by the consumer or remain in the ownership of the installer ? Are subscriptionbased models, therefore, closer to car leasing agreements (PCH) or closer to Personal Contract Purchase (PCP). Would these schemes include warranty protection and/or maintenance and servicing of the installed equipment ?

However, with these necessary protections and definitions in place, models that spread the installation cost and remove initial cost barriers would be welcomed and should be part of the wider BUS scheme as a way to increase installs.

Question 18: Do you agree that third-party ownership providers wishing to access the

BUS should be restricted to MCS certified companies? Yes/No. Please provide evidence to support your response.

MCS certification has, anecdotally, gained a poor reputation – particularly in relation to Solar PV/ house batteries. For example, Octopus Energy now accept self-declared compliance for solar PV installations, meaning that MCS certification is not mandatory to access their Smart Export Guarantee tariffs. This change "aims to simplify the process and reduce costs associated with MCS certification", a strong indication that all is not well with MCS.

If MCS certification is to be the sole means of accessing the BUS, then MCS will need to up its game to a significant degree if the proposal is to succeed.

Question 29: Do you agree with the approval of the MCS Customer Commitment as a

code of practice for the purpose of consumer protection on the BUS? Yes/No. Please

provide evidence to support your response.

See concerns relating to MCS under Question 18