



## Demystifying the Tech Session

Tuesday 12<sup>th</sup> October

### Questions from the chat

	Questions	Answers from Laura
1	With the switch from gas to renewable electricity. Will domestic electric consumer units have to be updated in respect of supply ampage?	You will only need single phase electric supply up to 28kWth heat pump. Depending on how full the distribution board is in your house, you may need an upgrade. It is a question to ask your installer and/or surveyor. The installer is also responsible for the Connect and Notify process with the DNO, who will advise if there are local issues with electrical connections.
2	I'm really conscious that fabric first build is essential, as we know already our current new build homes are thermally efficient. With this in mind, I am concerned with over heating. Are there cooling options in conjunction with air source heat & hot water pumps?	Yes – there are heat pumps capable of both heating and cooling. Heat pumps are actually chillers in reverse. You will need to make sure to select a heat pump capable of this in the first place – ask your installer. And you need to make sure your emitters are capable of emitting cool as well as heat. Condensation on pipework can be a problem and normal radiators are not a good type of cooling emitter. Convactor radiators are good.
3	What are the noise levels from ground source heat pumps please	Should be very low, almost like your fridge freezer humming.
4	When a new heat pump is installed, is the obsolete central heating pipework removed?	If the existing pipework can be reused, it will be left in-situ. Ideally, the flow and return pipes from/to your boiler will be used to hook up to your heat pump, albeit with new pipework to the hot water cylinder. But there may be a requirement to change the pipework to fit to the heat pump or possibly to make the pipework bigger. But the pipework around your house should be OK – unless the installer calculates it needs to be upgraded.
5	Where are they manufactured?	We have two heat pump manufacturers in Britain (domestic heat pumps). Others are built all over the world.
6	What is the size of a domestic heat pump system	Depends on house size and heat demand. Anything from 3kW for a small flat to 100kW+ for a stately home!
7	What are the financial implications of installing a heat pump through retrofitting over installation into a new build?	Cheaper to install in a new build as there is nothing to strip out and the pipework and radiators will have been designed specifically for low temperatures. The hot water cylinder will also be specifically designed and installed within the new build.

8	How quickly does it heat the water? - with a combi you can have multiple showers and not worry about running out, is that an issue?	Hot water is priority for a heat pump. Usually a 3 port valve is used to ensure the hot water cylinder is kept topped up. If the cylinder drops in temperature (e.g., having a bath or shower), the heat from the heat pump is diverted temporarily from the heating circuit to the cylinder to ensure you don't run out of hot water. The sizing of the cylinder and the coil within is very important – make sure you ask your installer about this.
9	Where the new heating technology is shared across more than one house, how is the electricity supply paid for and can each residents, like now, chose their own supplier	<p>Depends on the install.</p> <p>If one heat pump per house operating on a shared ground loop, electricity used to power the heat pump is usually organised and paid for by the homeowner. The heat pump can be metered or the power to the heat pump will be metered via your electricity meter just as any other appliance in your home.</p> <p>If a central heat pump supplying heat to multiple homes via a heat network, the owner of the heat network will charge the homeowner a heat price which includes the cost of running the heat pumps and network. You do not pay the electricity directly other than electricity for other appliances in your home.</p>
10	As a customer how would I know they've done a heat loss calculator or the installer has done a DNO	You need to ask. Also heat loss calcs and Connect and Notify (DNO) is required as part of the MCS process so your installer should do that to remain MCS compliant.
11	How do you deal with some households requiring more resources than others please	It's the same philosophy as gas or water supply. Some houses need more water and some need more gas. It is paid for by gas and electric metering. Heat meters are used for the same purpose.
12	Cost of fitting a new natural gas boiler compared to a heat pump?	Gas boiler c.£2500. ASHP c. £8,000. GSHP c. £20,000. Totally dependent on heat load though.
13	What is the ambient/average room temperature achievable with a heat pump	Same as gas boiler. Room temps are set by building regulations and the heat pump delivers this in the same way as a gas boiler.
14	What is the potential to combine multiple technologies such as photo-hydro with air source or ground sound heat pumps with heating water?	Very good. On-site electricity generation can be used to power some of the heat pump demand. Solar thermal can be used to supplement or replace heat pump in the summer to save money.

A big thanks to Heat Trust and Infinitas Design for joining us, for more information visit their websites.

**Heat Trust** <https://heattrust.org/>

**Infinitas Design** <http://infinitas-design.co.uk/>