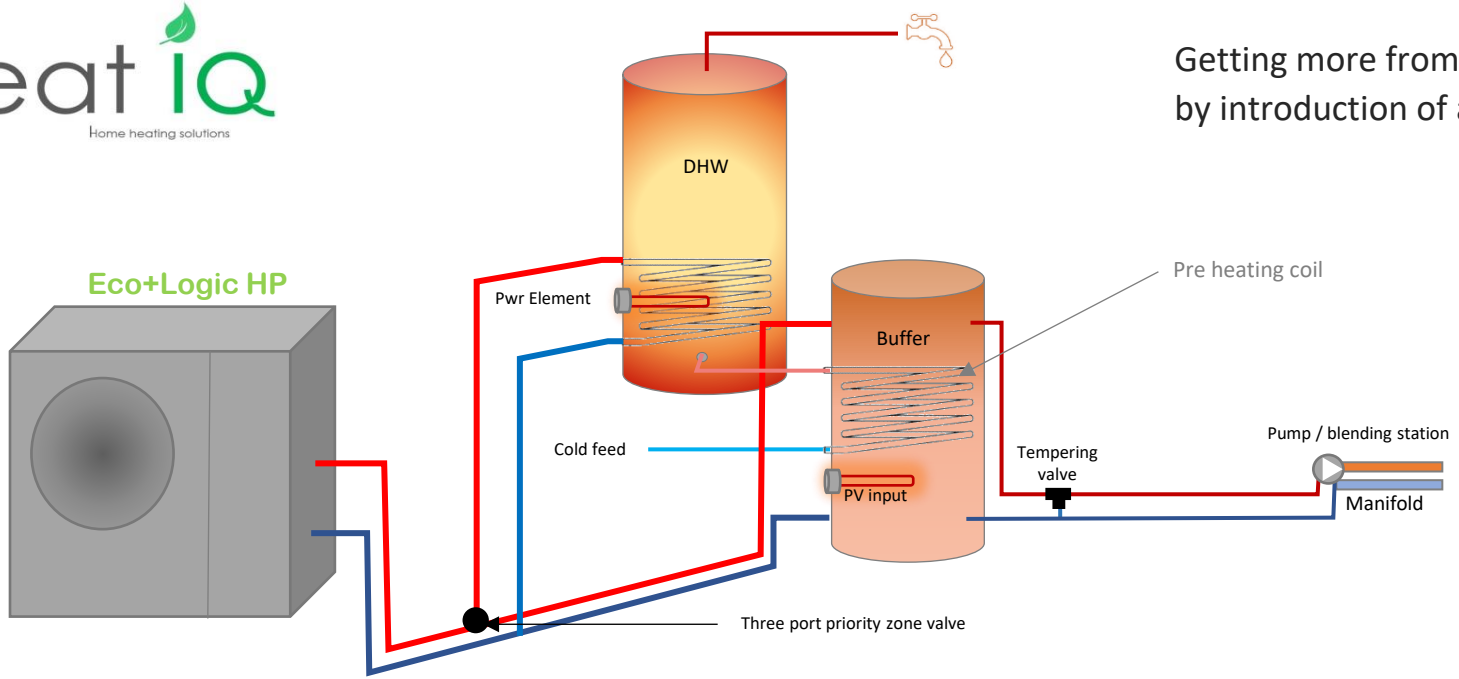
Heat iQ
Home heating solutions

Getting more from your heat pump system by introduction of a DHW pre heat system



This detail shows valving relevant to the subject it may not show all valving requirement in a system

Heat pump operation

The HP normally heats buffer tank to say 44°.
Then with priority if there is a demand it switches to heat the hot water cylinder during pre set time schedule periods.

When in Hot water mode it raises temperature in cylinder to 50° using its maximum output, then from this point it reverts back to heating and the element is triggered until your pre set DHW temperature is achieved

Once per week the HP ensures legionella protection by triggering the PWR element until the required 60°

Control described here is based on our Inverter HP
Though typical operation may vary with some brands

Buffer tanks

Not all systems require a buffer tank, but it is arguably always an advantage to have one as it soothes out demand on the hp. A buffer can be as small as 40L but 100L is a better option.

Pre Heating your Hot water

For systems with domestic hot water included there is a very strong argument for including a buffer tank we a PH coil. This coil is used as a pre heater for the domestic hot water. (The cold feed to your hot water cylinder passes through it)
Though it does not produce all your DHW requirement, input from it is extremely cost efficient coming from the higher 3.8kw to 1 kw input achieved at 44° and greatly reducing the requirement for 2 to 1 direct input from the HP to the cylinder coil. **Typical savings of 15-20% are achieved on your DHW production cost.**
Where used a buffer with a pre heat coil must positioned adjacent to the Hot water cylinder.

PV solar can also be directed to a buffer tank .

Energy saving is not just from the big things.

Ensuring there is adequate pipe in the floors is extremely important. For a heat pump, the more pipe in the floor the lower the HP delivery temperature can be, and the lower the delivery temperature the higher the Energy efficiency achieved.

Fully Insulating all pipework feeding the system especially external pipework around the HP **(*Every un insulated fitting is the heat loss equivalent to 0.5m of uninsulated pipe!)***

Having multi zone control is critical to energy efficiency it can save as much as 20% from the annual heating cost.(It is mandatory in the UK and throughout the EU)

Staggering all the control zone on time settings by 30 minutes so demand from the HP is not everything all at once will also save you money.