

Buildings: Network – Heat Pump

This lever controls the sub-levers listed in the table, and ambition levels are for the end year shown on the right-hand side.

Heat networks, sometimes called district heating (especially when referring to larger networks), deliver heat from a centralised source. Large-scale heat pumps are examples of technologies that can generate heat for heat networks. These larger heat pumps tend to use water or the ground as the source of heat rather than air, which is typically used in the smaller heat pump systems installed in domestic buildings (see Heat Pump Share and Hybrid Heat Pump Share levers). Heat pumps represent a low-carbon way of generating heat due to the high efficiencies and the potential to use low-carbon electricity rather than fossil fuels.

There were no large-scale heat pumps used in heat networks in 2015. The majority of district heat was generated by gas CHP with the remainder being produced by biomass CHP and waste heat from industry.

Key Interaction

Network heat pumps will only be built if there is sufficient demand for district heat (District Heat Share lever).

Low-carbon electricity must be generated to maximise emissions savings from electrified heating.

Level 1

The market for large-scale heat pumps fails to mature leading to no contribution to district heating from these kinds of systems.

Level 2

Around one tenth of the level 1 demand for space heat is delivered by water and ground source heat pumps on the condition that the district heating ambition is sufficient.

Level 3

Roughly a quarter of the level 1 demand for space heat is delivered by water and ground source heat pumps on the condition that the district heating ambition is sufficient.

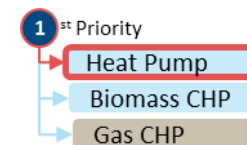
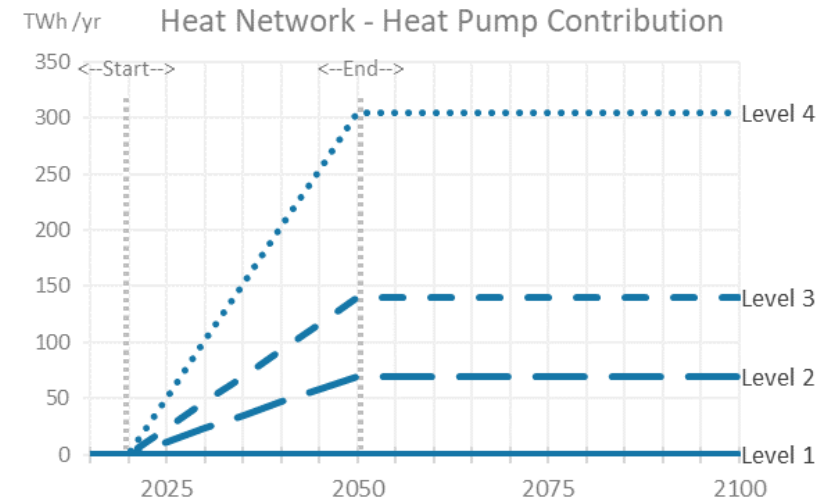
Level 4

Half of the level 1 demand for space heat is delivered by water and ground source heat pumps on the condition that the district heating ambition is sufficient.

Default Timing Start year: 2020, End year: 2050

Heat Pump share of network heat

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Water Source HP	TWh/yr	0	0	20	40	80
Ground Source HP	TWh/yr	0	0	50	100	225



Lever Priority

Heat pumps are first in the priority order for supplying network heat.

Where supply would otherwise exceed demand, measures lower in the priority order will be superseded by those above them. Gas CHP will meet any shortfall in demand.