Buildings: District Heat Share

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

District heat networks pipe hot water directly to homes and non-residential buildings from a centralised source. This differs from today, where most buildings have individual heating systems.

Heat can be supplied to the network from various sources including waste heat from electricity generation or industry, large scale heat pumps or combined heat and power (CHP) systems. Economies of scale and increased efficiencies can be achieved particularly when utilising waste energy. District heat networks are most appropriate for dense areas of buildings as this helps to reduce heat losses.

In 2015, roughly 4% of the residential, and 3% of non-residential heat demand in the UK was met by district heating. The majority of residential district heat was from gas CHP, with the remainder from biomass CHP and waste heat from industry. Non-residential district heating was entirely met by waste heat from industry.

Key Interaction

The sources of heat supplying the heat network can be controlled through the 'Network - Heat Pump' and 'Heat Network - Biomass' levers. Any shortfall in supply will then be met by combined heat and power (CHP) using gas from the grid, which can be decarbonised using the Hydrogen & Biomethane Gas Grid Share levers.

Level 1

The share of heat supplied by district heating remains roughly at the same level as today, meeting 4% of demand in residential buildings and 5% in non-residential.

Level 2

20% of residential and non-residential heat demand is satisfied by district heating by the end year.

Level 3

40% of the residential and non-residential heat demand is satisfied by district heating by the end year.

Level 4

60% of residential and non-residential heat demand is satisfied by district heating by the end year, which is the highest level achieved internationally, for example in Denmark[1]. This is considered the maximum technical potential, as some buildings are not suitable for district heating, for example those that are sparsely distributed.

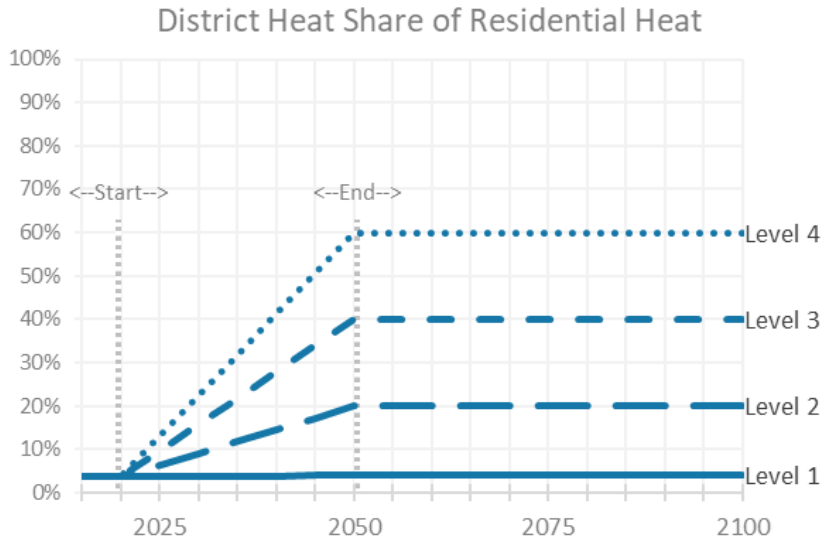
[1] http://www.element-energy.co.uk/wordpress/wp-content/uploads/2012/04/Decarbonising-heat-in-buildings-summary-report-final_02.04.12.pdf

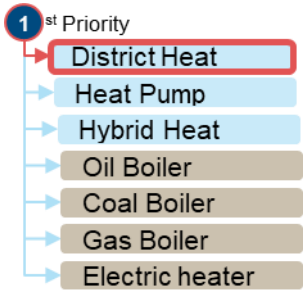
Default Timing

Start year: 2020, End year: 2050

District Heat share of heat supplied

Sub-Lever	Units	2015	Level 1	Level 2	Level 3	Level 4
Residential	share	4%	4%	20%	40%	60%
Non-Residential	share	3%	5%	20%	40%	60%





Lever Priority

District heat is first in the priority order for supplying heat to buildings.

Where supply would otherwise exceed demand, measures lower in the priority order will be superseded by those above them. Fossil fuel boilers and electric resistive heating meet any shortfall in demand.