



Low Carbon Technology Guide

District heating

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1. What is it?

District heating (also referred to as a heat network) is a system where heat is generated in a central location and then delivered to a number of connected properties through a series of highly insulated pipes. District heating systems can provide both heating and hot water to residential and commercial properties.

The sources for district heating could be (i) a combined heat and power (CHP) plant (that produces both heat and electricity), (ii) 'waste' heat from industry and urban infrastructure, or (iii) traditional gas boilers (for smaller systems).

2. Difference between the district and communal heating

While both are heat networks, communal heating systems are much smaller, usually designed to serve one or two buildings in close proximity to each other and tend to use gas boilers or CHP as heat sources. On the other hand, district heating systems are much larger, with properties often miles apart being serviced by the same system. District heating systems are also more likely to use 'waste' heat from large infrastructure (such as factories, train tunnels etc.) as a heat source and usually require much more sophisticated heat transport infrastructure due to greater distances between the heat source and properties served.

3. What are the benefits?

While just over 2% of UK homes are currently connected to district heating networks, the UK Government has targets in place to increase this number to around 18% by 2050 in order to meet its carbon targets. District heating systems are an essential part of the UK Government's decarbonisation plans primarily due to following reasons:

- Centralised heat generation is less carbon-intensive than when individual boilers are used.
- They are one of the most cost-effective ways of reducing carbon emissions from heating. This is especially true if a district heating system uses 'waste' heat from infrastructure or renewable heat sources.
- In addition to reducing greenhouse gas emissions, according to the UK Government, district heating can lower consumer bills by up to 30%.

4. Why isn't district heating more common?

District heating systems can be highly beneficial, providing both savings to consumers and supporting the Government's decarbonisation goals. However, the main issue is that district heating systems are inherently difficult to retrofit, making them most suitable for new developments, where you can plan the system before construction of the buildings commences.

5. Useful websites

For more information on district heating, please visit the following websites:

[Energy Saving Trust](#)

[TheGreenAge](#)