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“High capital costs are a burden for large scale heat network initiatives. Innovations which drive down the cost of heat networks are crucial for their future in overall energy system decarbonisation.”

Technological driven cost reductions for heat networks

The Energy Technologies Institute (ETI) has unveiled its latest report, *District Heat Networks in the UK*, outlining favourable business cases for reducing the costs of potential heat networks in the UK. ETI identified 96 innovative solutions which could cut the capital costs of heat networks. These were narrowed down to the eleven most promising solutions to create eight route-maps, potential benefits of which are shown in this week’s chart.

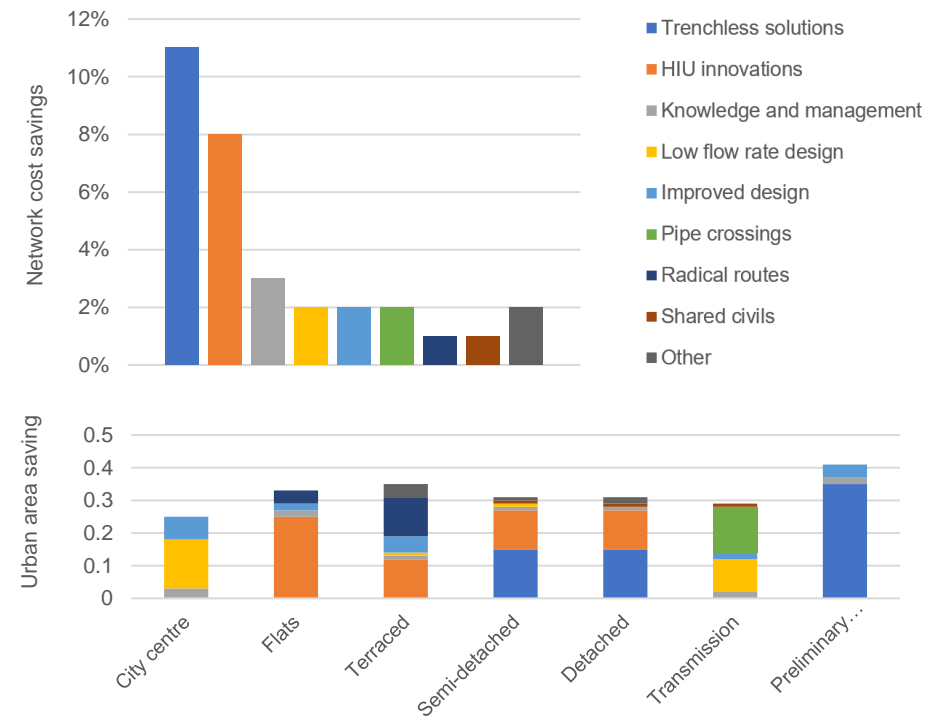
Proposed routes could reduce the capital cost infrastructure of heat networks by 30-40% when combined. Trenchless technologies were found to have the greatest promise, reducing overall heat network costs by 11%. This innovation would involve tunnels drilled underneath the surface instead of the need for trenching to lay pipes. Savings from trenchless solutions would benefit semi-detached and detached properties most, contributing to a reduction of 15% for properties, and 30% in preliminary costs.

Heat Interface Unit (HIU) optimisation came a close second, reducing overall costs by 8%. Cost reductions from £1,500 to £200 per unit would require simplification of design, manufacturing techniques and engineering solutions. This will have profound effects for flats and terraced houses, reducing costs by up to a third, with heat controlled efficiently on a single HIU unit due to the higher density of connections on a distribution pipe.

ETI’s paper provides key insight into the metrics of heat network evolution. These technological innovations could have significant implications for the viability of heat networks in coming years for decarbonisation pathways.

Reducing the capital cost will make heat networks more competitive compared to other solutions, particularly where renewables can be used to power the central heat source.

Percentage cost reductions from promising innovations on total heat network costs, as well as on networks in different urban areas



Source: Pixie Energy (Adapted from ETI)

This will make larger schemes more cost-effective, increasing confidence in heat networks and likelihood of investment. A change in policy to incentivise collective initiatives rather than disaggregated heating installations, or supporting a reduced cost of capital, could also help increase the number of GB heat networks to closer to the European average.

For more information about renewable heat and other related topics, contact us for a free trial of Energy:2030 at energy2030@cornwall-insight.com.