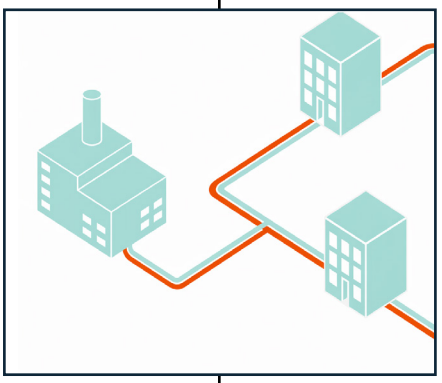
The social benefits of climate action
4. Heat networks

Reducing carbon is only one part of the climate action story: **multiple other benefits can also be delivered by low carbon measures**. These benefits come in the form of improvements to the environment, health and wellbeing, as well as increased economic productivity.

This guide provides monetised estimates for a selection of socio-economic co-benefits of climate action. By looking beyond carbon emissions reductions and evidencing the delivery of multiple priorities, we can build broader support for plans and increase the effectiveness of our decision-making.



How do we value the social benefits of shifting from fossil fuel boilers to heat networks?

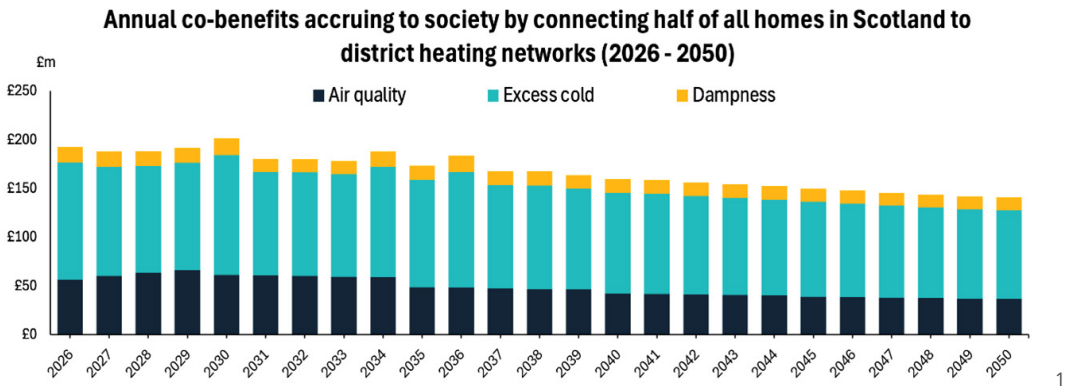
Fossil fuel combusting boilers produce harmful air pollution linked to respiratory and cardiovascular issues. But with heat networks, the heat is generated outside our homes reducing the health risks. Better still, if waste heat or electricity is utilised, air quality can improve. Through enabling access to adequate levels of heat, especially in more vulnerable communities, we can reduce damp living conditions and associated negative health impacts.

The co-benefits calculations begin by identifying house types within an area and then estimate the wider impacts of connecting to heat networks compared with pre-existing heat systems. Although we express the additional benefits as monetary values, these don't represent direct financial gains. Instead, they are avoided costs for your area. These figures aren't a cash flow, but they should reduce future spending on areas such as health and social care. The result: healthier, happier and more resilient communities.

How large are these benefits?

The table below indicates the estimated total co-benefits when shifting fossil fuel heating systems to heat networks across 2026 - 2050 in the Dundee Council area, compared to those for Scotland. Values are based on clean heat shifts recommended within the Climate Change Committee (CCC)'s Seventh Carbon Budget to reach net zero and ECCI analysis. The heat source is assumed to be heat networks powered by zero emission sources and half of all households in Scotland connect.

Co-Benefit Type	Per person - Dundee (£)	Per person - Scotland (£)	Total Dundee (£ million)	Total - Scotland (£ million)
Avoided air pollution	£221	£203	£32.7	£1,112
Reduced excess cold	£446	£478	£67.9	£2,617
Reduced dampness	£76	£63	£11.2	£346.7
Total	£743	£744	£112	£4,076



[1]

This graph displays benefits annually from 2026 to 2050. Please note the scaling-up of deployment is not reflected and future values have been discounted – to account for the value of future savings to us now - in line with UK Government Green Book guidance.

These findings illustrate how incentivising the transition to clean heat can assist with delivering **key service outcomes**, whilst reducing demand on wider public budgets. The methodology is Green Book compliant. Estimates are therefore conservative, as they exclude a wider set of benefits for which UK Government-backed methods are not currently available. For example, heat networks can assist with reducing demand on our energy networks at peak times as they are flexible when thermal storage is installed.

How do we encourage heat networks and connections to unlock the benefits?

The first step is the population of the ClimateView platform with interventions from current plans and identifying additional actions to assist the transition. Interventions are the actions your council does so net zero targets can be met – and could include:

- Continue developing Local Heat and Energy Efficiency Strategies (LHEES) in line with Scottish Government requirements. See NESTA for more advice, including how crucial it is to build trust around the future of district heating - not only for residents but industry and private finance to increase the investment opportunities.
- Explore ways to develop heat networks alongside partners, including commitments to connect local authority buildings. With an ongoing large demand for heat, these buildings function as anchor loads and help heat networks operate effectively.
- Deliver a demonstrator project for hard to connect housing.
- Ensure clean heat is supplied directly to social housing and low-income homes.

Scottish Renewables provide additional recommendations in National Heat Networks: A Vision for Scotland. The guide explores the prospect of larger scale measures which require coordination across local authority boundaries and could help to shape more interventions for your area. Or see Net Zero Go for an extensive library of free resources to assist with heat network project development.

[1] *While the CCC's recommendation is for half of the UK's households to be fitted with a heat pump by 2040, for the purposes of this analysis, the table and graph show the benefits were this to be effective from the present day.*

Further information

- **Sign up for our latest news and resources.**
- **Explore the social benefits of climate action for your area based on the UK Co-Benefits Atlas.**
- **Visit the SCIS website.**
- **To find out more or request bespoke analysis for your local authority or project, email the CO-BENS team: cobens@ed.ac.uk.**

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