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Executive Summary

From Carbon to Competitiveness:

The UK opportunity associated with
decarbonising residential heating



Executive Summary

Decarbonising how we heat our homes is not only essential for meeting the UK's climate commitments, it is also a major economic, employment and societal opportunity. Modelling using the UK Government's *2025 Carbon Budget and Growth Delivery Plan*¹, shows that the electrification of residential space heating delivers wider benefits beyond reducing UK carbon emissions. It provides an opportunity to stimulate significant economic growth, create skilled jobs across the country, improve public health, and strengthen the UK's energy security.

The Changing Heating Landscape

Government assumptions set out within the *Carbon Budget and Growth Delivery Plan*¹ suggest that the number of residential hydronic heat pumps in service will rise from 0.5 million in 2025 to 2.5 million by 2030, and 9.3 million by 2035. With direct electric heating also seeing modest growth, whilst fossil fuel central heating boiler numbers are expected to decline².

Economic Growth

By 2035, the total Gross Value Added (GVA)³ generated by manufacturing, installing and operating residential space heating appliances could rise from £12.2 billion today to reach £22.5 billion in 2035 – an 85% increase. This demonstrates that decarbonising heat in homes through electrification should not be viewed as a cost burden, but as a driver of opportunity.

The economic opportunity associated with hydronic heat pumps alone could increase GVA by £14 billion over the course of the decade and, by 2030, heat pumps are predicted to overtake fossil fuel boilers as the largest contributor to GVA in this sector. Excluding energy consumption, hydronic heat pumps are expected to account for 88% of GVA in the residential space heating sector by 2035.



¹ <https://www.gov.uk/government/publications/deleted-carbon-budget-and-growth-delivery-plan>

² The appliances included in the scope of the report are fossil fuel central heating boilers, hydronic heat pumps for space heating via wet central heating systems, and direct electric heating. These represent the majority of heating appliances predicted as being in use during the period considered (2025-2035). The full report includes commentaries on the potential impacts of other heating appliances and systems.

³ The economic value is reported in terms of Gross Value Added (GVA) which comprises both direct and indirect GVA. Direct GVA is the value created directly by the activity under consideration. Indirect GVA is value added in upstream industries supporting the direct activity.

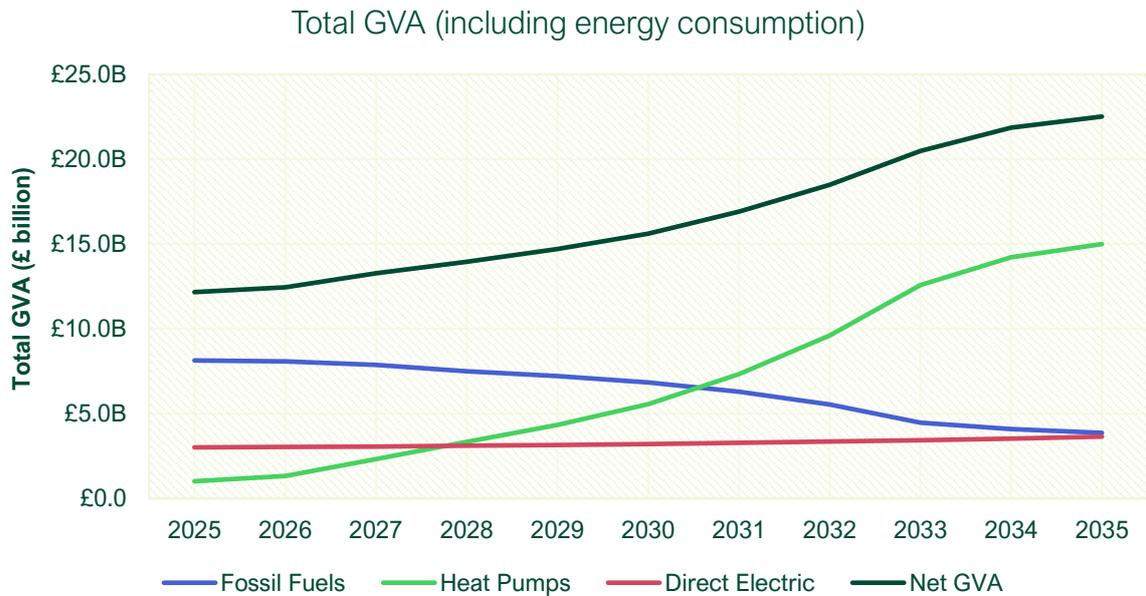


Figure 1 - Total GVA for residential space heating appliances (including energy consumption)

The UK manufacturing opportunity for hydronic heat pumps is significant, provided investment is stimulated and supported. The analysis shows that manufacturing could expand between 15-fold and 27-fold by 2035 for the UK market alone, while export opportunities could grow this even further.

Employment Growth

Heat pump deployment will create tens of thousands of skilled UK jobs. For all residential space heating appliances, employment is estimated to double from 69,000 full-time equivalent (FTE) jobs in 2025 to 144,000 FTE in 2035.

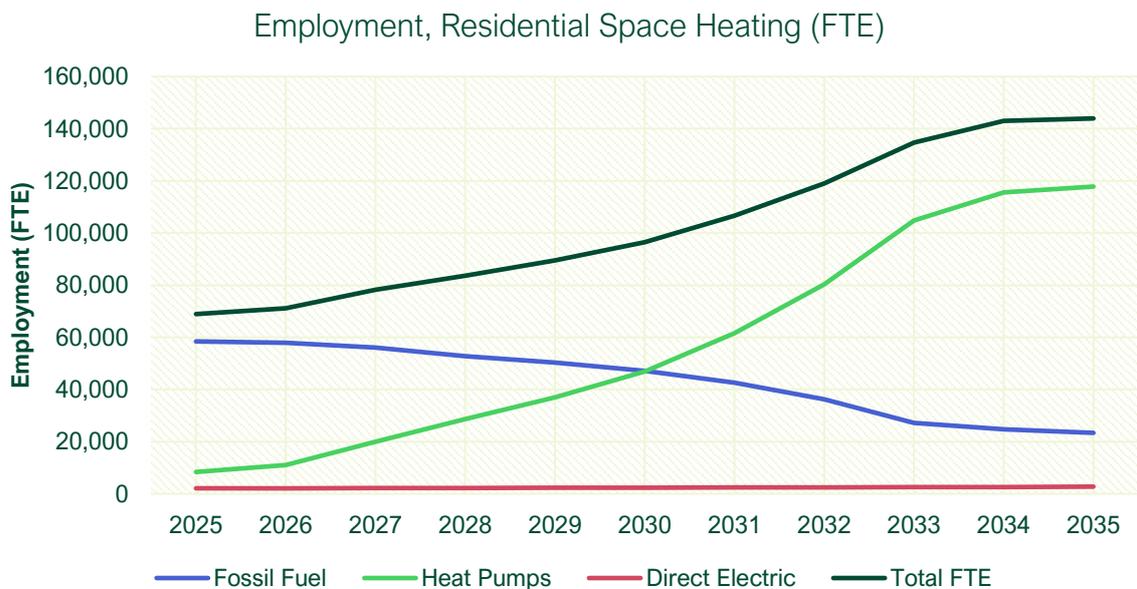


Figure 2 - Employment relating to residential space heating

Fossil fuel activities will increasingly focus on servicing existing heating appliances, while installation will switch towards low-carbon heating, primarily hydronic heat pumps. Overall, between

2025 and 2035 heat pump related jobs will grow by over 110,000 FTE to account for 82% of employment in this residential space heating sector by 2035. This growth provides opportunities both for workers transitioning from fossil fuels and for new entrants.

Energy Security

Each heat pump installed reduces the UK’s reliance on imported gas. The switch to heat pumps and other low-carbon heating appliances could reduce the annual demand for gas by 63 TWh from 2025 to 2035, a fall of 22%, which is enough energy to run the London Underground for 75 years.

In combination with the anticipated reduction in gas used in electricity production by 2035, the UK’s overall reliance on imported gas could be reduced by 62%, strengthening our energy security by increasing the use of homegrown electricity.

Improving Public Health

Replacing fossil fuel boilers reduces harmful emissions of fine particulates and nitrogen oxides (NOx), which contribute to respiratory and circulatory illnesses, including asthma, coronary heart disease, strokes, and lung cancer.

Today, 25% of UK air pollution relates to emissions from fossil fuel boilers. It is estimated that by 2035, the number of central heating boilers in service will reduce from current levels by 24%, which would represent a 6% reduction in overall air pollution, improving health outcomes throughout the UK.

Climate Change

By 2035, the installation of hydronic heat pumps could abate around a third of greenhouse gas emissions associated with residential space heating. Measured as carbon equivalent, 17 million tonnes of carbon (MtCO₂e) would be annually abated by 2035 with other low-carbon heating appliances potentially adding a further 1 MtCO₂e. This is equivalent to 20 million passenger flights from London to New York.

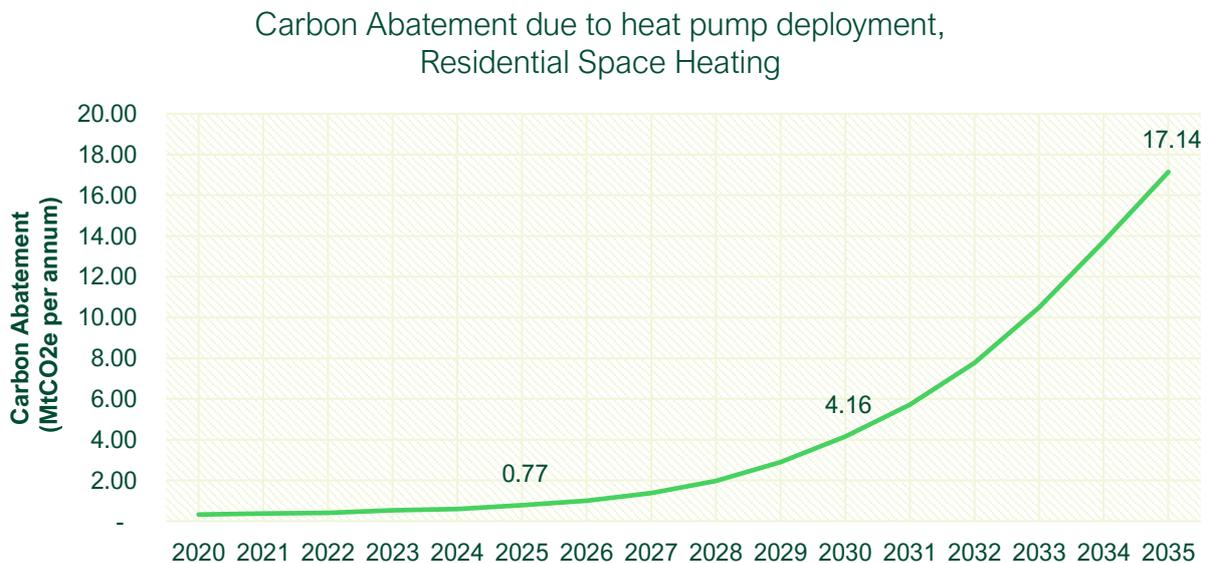


Figure 3 - Carbon abatement from heat pump deployment for residential space heating

Evaluation Approach

The full report, available [here](#)⁴, includes a detailed methodology. The analysis is based on the residential space heating appliance installation levels needed to meet the assumptions published in the *Carbon Budget and Growth Delivery Plan*⁵ which is the formally published plan by which the UK Government intends to meet the Sixth UK Carbon Budget (2033-2037). It also draws on evidence and modelling for the years 2025-2035 included in the Climate Change Committee (CCC) report *The Seventh Carbon Budget – advice for the UK Government*⁶.

The evaluation is focused on space heating appliances which serve individual homes, and it does not consider larger heat networks for residential heating or low-carbon hot water appliances, both of which are identified as likely to add further value and employment. The phrase ‘residential space heating sector’ is used throughout the report in reference to hydronic heat pumps, fossil fuel boilers and direct electric heating equipment and includes the provision of domestic hot water where it is supplied by the space heating appliance.



⁴ <http://hpauk.org.uk/wp-content/uploads/2026/01/HPA-UK-From-Carbon-to-Competitiveness-FINAL.pdf>

⁵ <https://www.gov.uk/government/publications/carbon-budget-and-growth-delivery-plan>

⁶ <https://www.theccc.org.uk/publication/the-seventh-carbon-budget/>