

The campaign for clean, safe, and affordable heating for British homes today.

### What is a heat pump?

A heat pump takes natural heat from air, water or the ground and raises it to a higher temperature using a compressor, powered by electricity. That heat is then transferred to your home. It is possible to think of them as refrigerators or air conditioners in reverse.

### Benefits for Households



#### Cost Effective

The cost of heat pumps is falling, by **up to 40% in the next 10 years**. Households can currently benefit from subsidies like the Boiler Upgrade Scheme to receive **up to £6,000**. Heat pumps are **3-4 times more energy efficient than gas boilers** and have a far longer lifespan.



#### Availability

Heat pumps are an **established technology** heating homes in Britain today. There are over **40 million units installed across Europe**, and over **190 million worldwide!** Heat pumps provide safe, clean and affordable heating.



#### Health

The low carbon heating transition will help the UK meet its **legally binding air quality targets** and improve people's health. Heat pumps do not emit any gases at all. In contrast, gas boilers emit both **carbon dioxide** and **nitrogen oxides**, which contribute to respiratory and cardiovascular diseases and can account for **20% of a city's air pollution**.



#### Safety and Reliability

Heat pumps do not burn gas so there is **no risk of gas leaking or exploding**. They are also more reliable than gas boilers – **one in five gas boilers broke down in 2017**. Air source heat pumps are efficient year-round, thanks to an outstanding SCOP (seasonal coefficient of performance).

### Heat pump facts

1. In 2021, *The Electrification of Heat* demonstration project, supported by BEIS and the Energy Systems Catapult, found "there is **no property type or architectural era that is unsuitable** for a heat pump," based on a study of 742 different installations around the country.
2. Air source heat pumps can work at temperatures as low as **-25 degrees** and are widely deployed in many of Europe's coldest countries. Around **half of all households in Norway, Finland and Sweden** use a heat pump to stay warm.
3. [A 2022 study](#) for the European Environmental Bureau found that **88% of people across 22 European countries were very happy with their heat pump**, and most reported an increase in home comfort.
4. A well-engineered commercial ground source heat pump can be **expected to last 25 years** – ten years longer than a combustion boiler – and the ground heat exchanger, the more expensive part of a GSHP installation, should have a life of **over 100 years**.

**Did you know:** the UK Government aims to see **600,000** heat pumps installed each year by 2028.

## Benefits for the UK



### Fossil Fuel Heating Costs

For every heat pump installed, the UK could save **~£1,100** in wholesale gas cost (Nov, 22). If all UK homes with gas boilers switched to heat pumps, the savings in wholesale gas costs would be equivalent to **~1.2% of GDP**. These households will likely save on running costs as the price of gas remains high in coming years.



### Energy Security

The UK's dependence on gas leaves us vulnerable to price shocks and energy security risks. The UK imports **60%** of its gas. The largest share of this is used for home heating: **37%** of the UK's total gas consumption in 2021. A future with widespread electric heating, powered by new and existing British renewables, will secure the UK's **political and economic integrity** and independence.



### Growth and Innovation

To achieve net zero by 2050, the UK will need pioneering British businesses delivering green innovations. Britain can position itself as a **global leader** in low carbon heating technology. 2021 research from Cambridge Econometrics found that **140,000 new jobs** would be created by 2030, and the economy boosted by **£9.8bn**, if the UK government increases heat pump deployment and energy efficiency measures.



### Climate

We **cannot** get to net zero without decarbonising heat, which is responsible for **14%** of UK carbon emissions. Domestic gas boilers emit **twice as much CO2 as all UK power stations combined**. Gas and oil boilers will be banned in new build homes from 2025. Heat pumps are the only viable technology that can fill the gap without continued reliance on fossil fuel.

## Our Policy Recommendations

1. Embed the **phase-out of fossil fuel heating systems** in law.
2. Put heat pumps at the heart of the **Future Homes Standard** (the 2023 review of energy efficiency regulations for new build homes).
3. Move forward with the **market-based mechanism** for low-carbon heat (the industry-led transformation of the heating appliance market).
4. Boost government-backed **subsidy schemes** and **fine-tuning** of subsidy levels.
5. Access the opportunities presented by the **UK Infrastructure Bank** to support mass heat pump deployment.
6. Advance **electricity price reform**, including through the review of electricity market arrangements (REMA).
7. Making **building regulations** and **energy services** heat pump friendly.
8. Provide independent advice and **awareness**-raising.
9. Provide long-term support, funding and promotion for heat pump **skills and training**.

We would be pleased to answer any questions and discuss opportunities to support the growing clean tech market. Please contact [Leo.Vincent@e3g.org](mailto:Leo.Vincent@e3g.org) to set up a meeting.

