Decarbonising Heat:

How can we solve this difficult challenge?

Demand for Heat uses the most energy.

In OECD countries heating accounts for **37% of energy use**

In UK heating accounts for **40% of energy use** and **37% of total UK carbon emissions** (including industrial processes)

13% of greenhouse gases in UK result from home heating using fossil fuels.

In the EU Industrial process heating alone accounts for **18% of total EU final energy demand**. It is more energy than the combined electricity consumption of Spain, Germany, France and the UK!

Why is it so difficult to achieve?

- **There is no single 'cheap' solution**
- **Timescales for the net-zero target**
- **The size of the challenge- 85% UK homes use natural gas for heating.**
- **Poor energy efficiency- In 2020 64% of UK homes below UK energy efficiency targets**
- **Societal knowledge – 48% of people in UK have no recognition of low-carbon heating options**

What are the solutions?

- **Improving efficiency & insulation**
- **Changing Heat sources:** Renewable Electricity, Hydrogen, Solar, heat pumps, Geothermal, reusing waste heat, mine water heat
- **New energy systems:** Heating and cooling networks, heat storage, integrated energy systems, waste heat capture and reuse
- **Reducing and shifting heat demand:** Awareness raising and better communication of options, smart energy technologies, smarter white goods and technology

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