

# COSTS OF LOW CARBON HEATING

To meet legally-binding carbon targets, the UK must stop burning natural gas - a fossil fuel - for heating, by 2050. That will need alternative heating technology and better energy efficiency.

# 22%

of greenhouse gas emissions

come from the supply of heating and hot water



equivalent to

# 101

MT/CO<sub>2</sub> per year

This needs to reduce by at least

# 90%

to meet the UK's carbon targets

## ENERGY EFFICIENCY IS A NO-REGRETS INVESTMENT

Greater energy efficiency measures mean heating demand could be reduced by

# 1/5<sup>th</sup>



## THERE ARE TWO LARGE SCALE OPTIONS: HEAT PUMPS OR HYDROGEN

Much uncertainty exists around the costs, benefits and risks associated with both choices.



A **heat pump** runs on electricity and extracts heat energy from the outside air or ground. It is highly efficient, but costly to install



Estimated cost to 2050

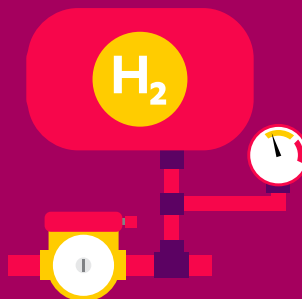
# £140 - £250bn

and reduces emissions to

# 8

million tonnes CO<sub>2</sub>/year

Existing gas boilers could be replaced with a **hydrogen** equivalent



Estimated cost to 2050

# £100 - £160bn

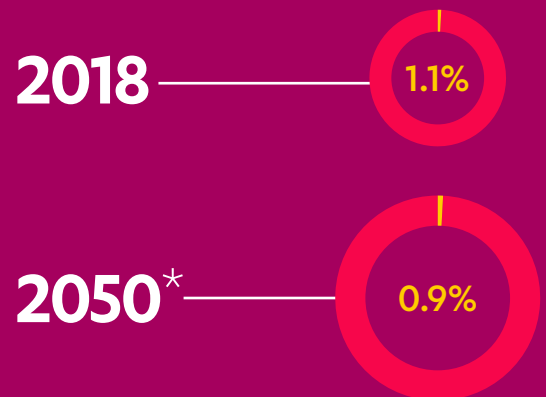
and reduces emissions to

# 13½

million tonnes CO<sub>2</sub>/year

Despite the large investment required, the total cost of heating as a share of national income will fall

Total heating system costs as a percentage of GDP



Sources: Cost analysis of future heat infrastructure options – report for the National Infrastructure Commission by Element Energy Limited and E4tech, March 2018; BEIS  
\*Estimate based on National Infrastructure Commission calculations