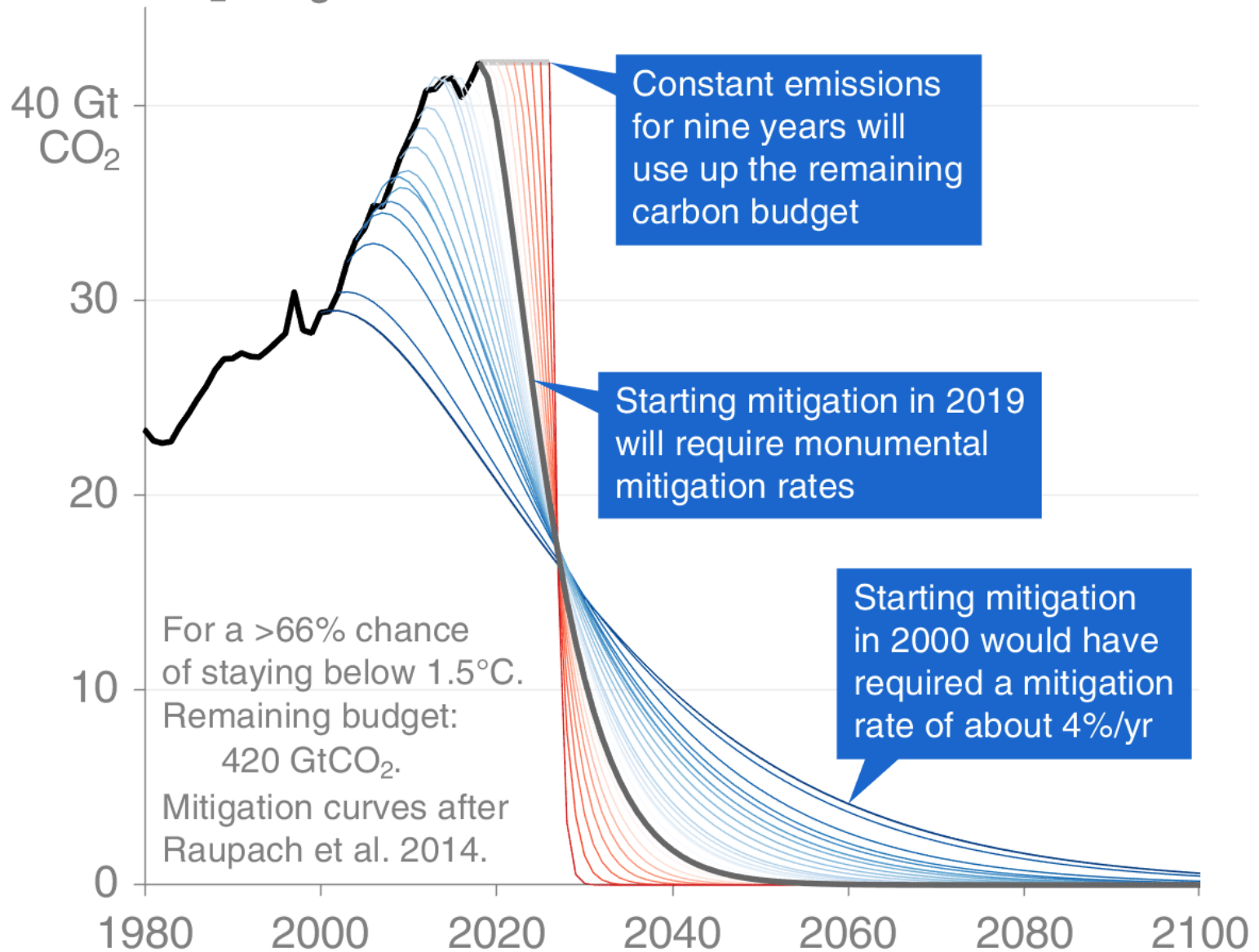




Why do we need net zero....

CO₂ mitigation curves: 1.5°C





No more gas to heat homes

Background. Direct greenhouse gas (GHG) emissions from buildings were 87 Mt CO₂e in 2019, accounting for 17% of UK GHG emissions. These emissions are mainly the result of burning fossil fuels for heating.

This 87 MtCO₂ is split between homes (77%), commercial buildings (14%) and public buildings (9%).

New build ban for Gas Boilers = 2025

Replacement boiler ban = 2030-2035 ?

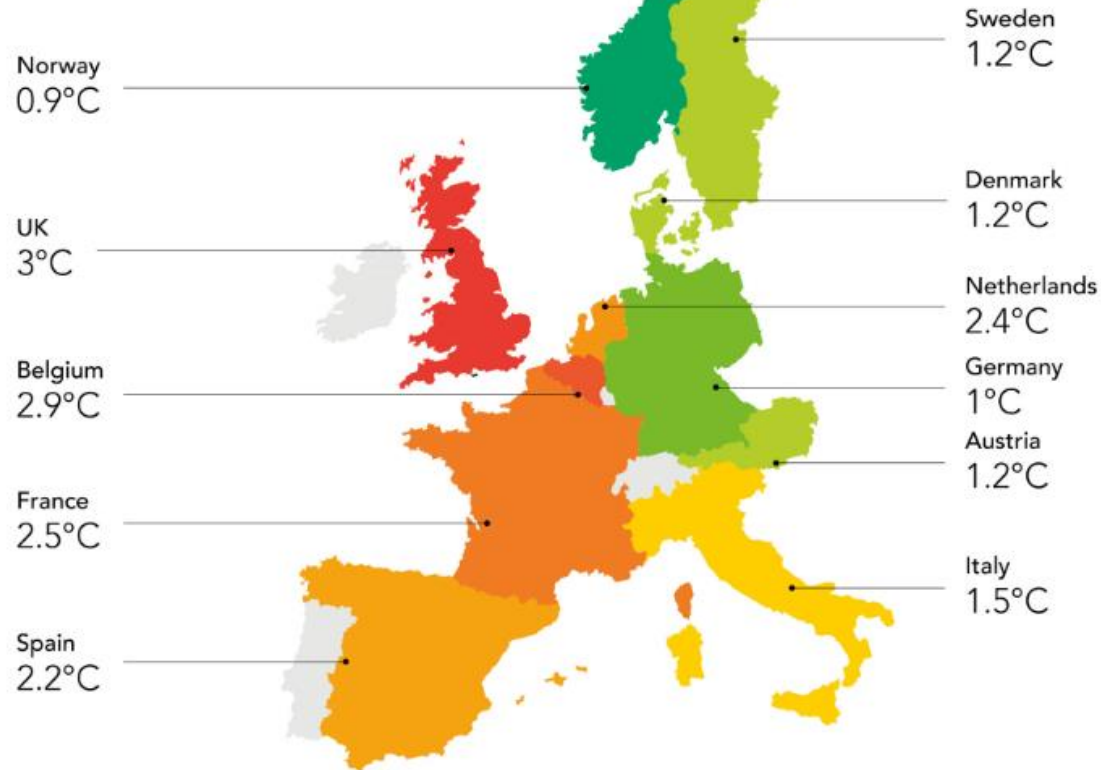
10 point plan for a green industrial revolution says UK aiming for 600,000 heat pump installations per year by 2028. "This ambition still leaves open the choice as to whether we ultimately pursue hydrogen heating, an electrified heating system (heat-pumps), or a mixture of both, whilst we continue to pilot the options"

UK homes “leak” heat

Home temperature loss after 5 hours

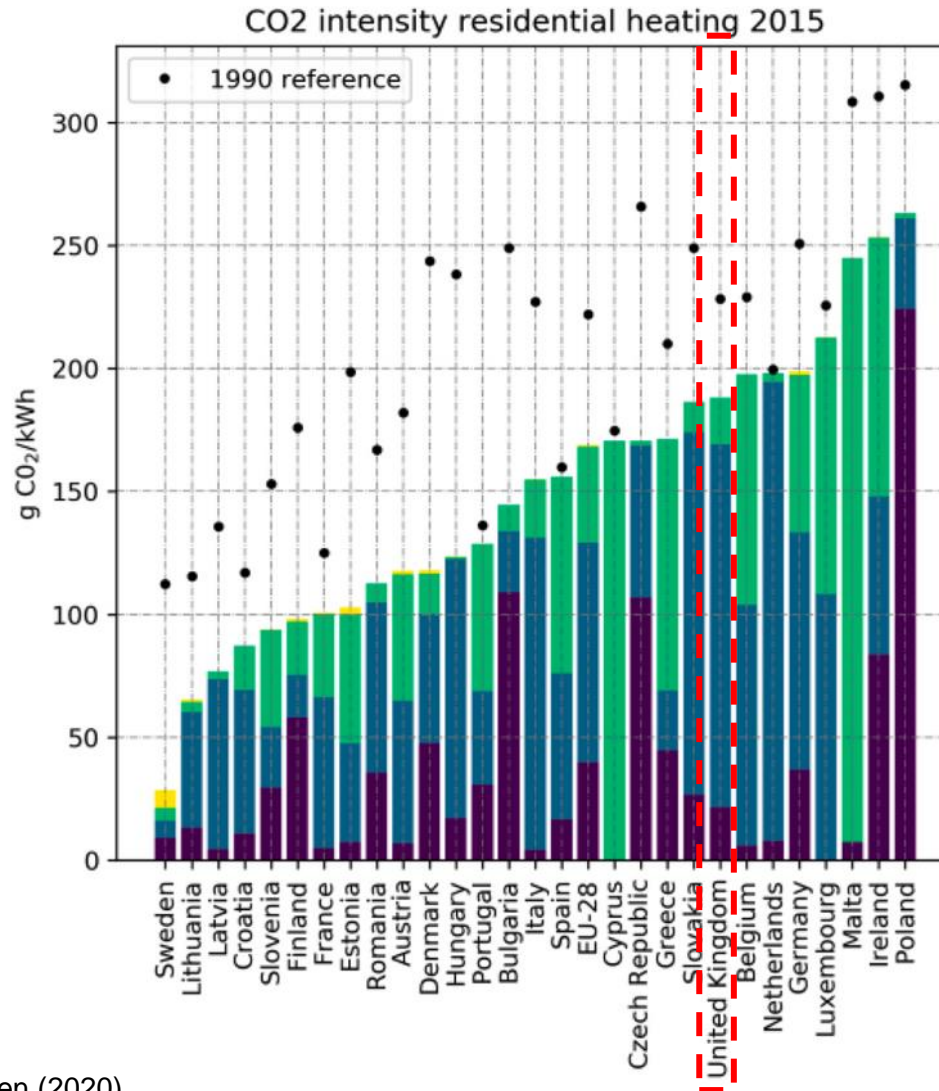
tado°

With a temperature of 20°C inside and 0°C outside



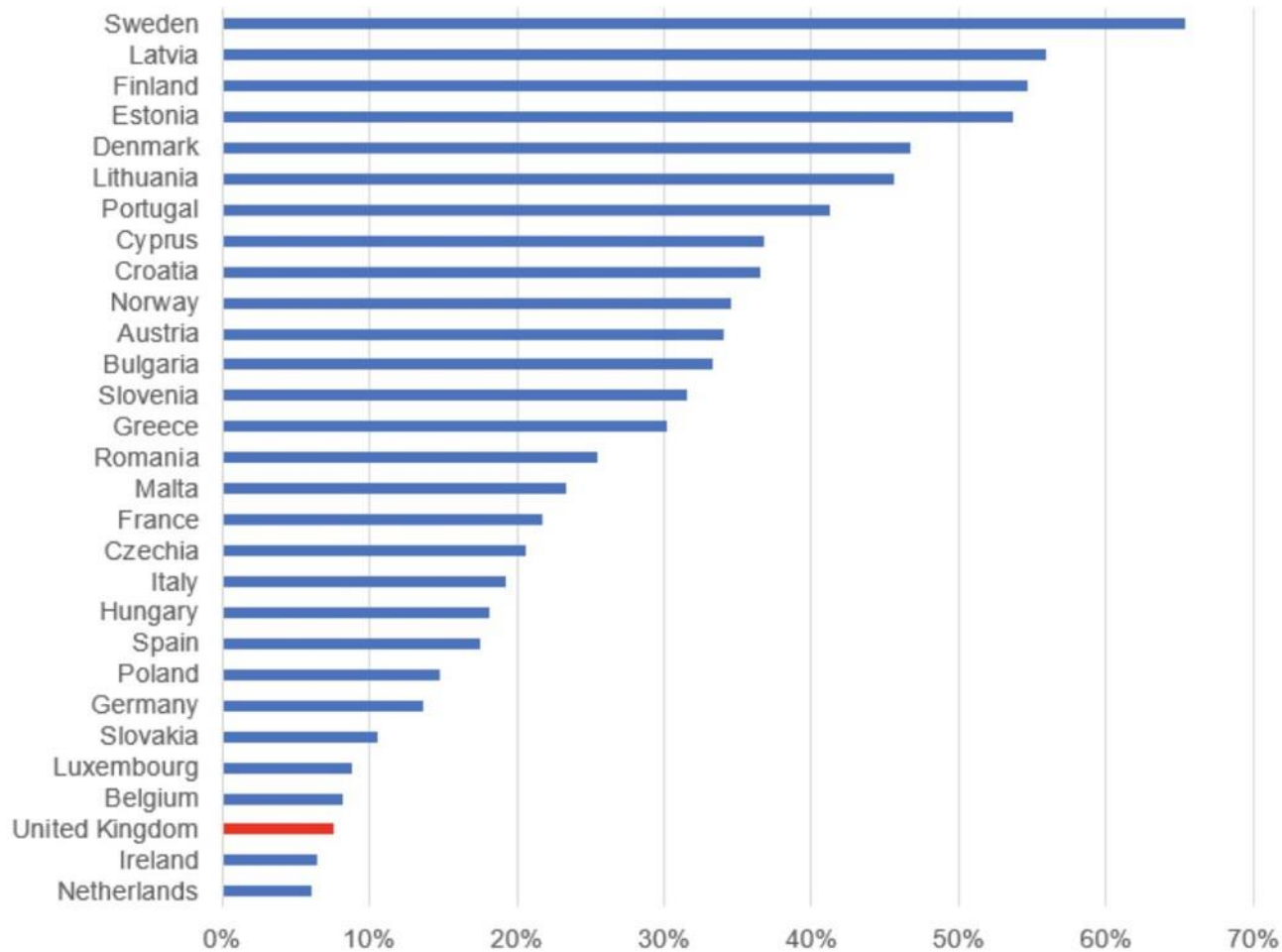
Based on a sample of over 80,000 European homes

European comparison – Carbon Intensity of Heating



European comparison – Renewable Heat

Share of renewable heat



Source: Eurostat 2020

Huge numbers of homes need improvement

Almost all of the UK's 29M homes need energy efficiency upgrades



=



19,000
upgraded every week

Current rate of installation v Required rate of installation

Heat networks



Heat pumps



Cavity wall insulation



Solid wall insulation



Loft insulation



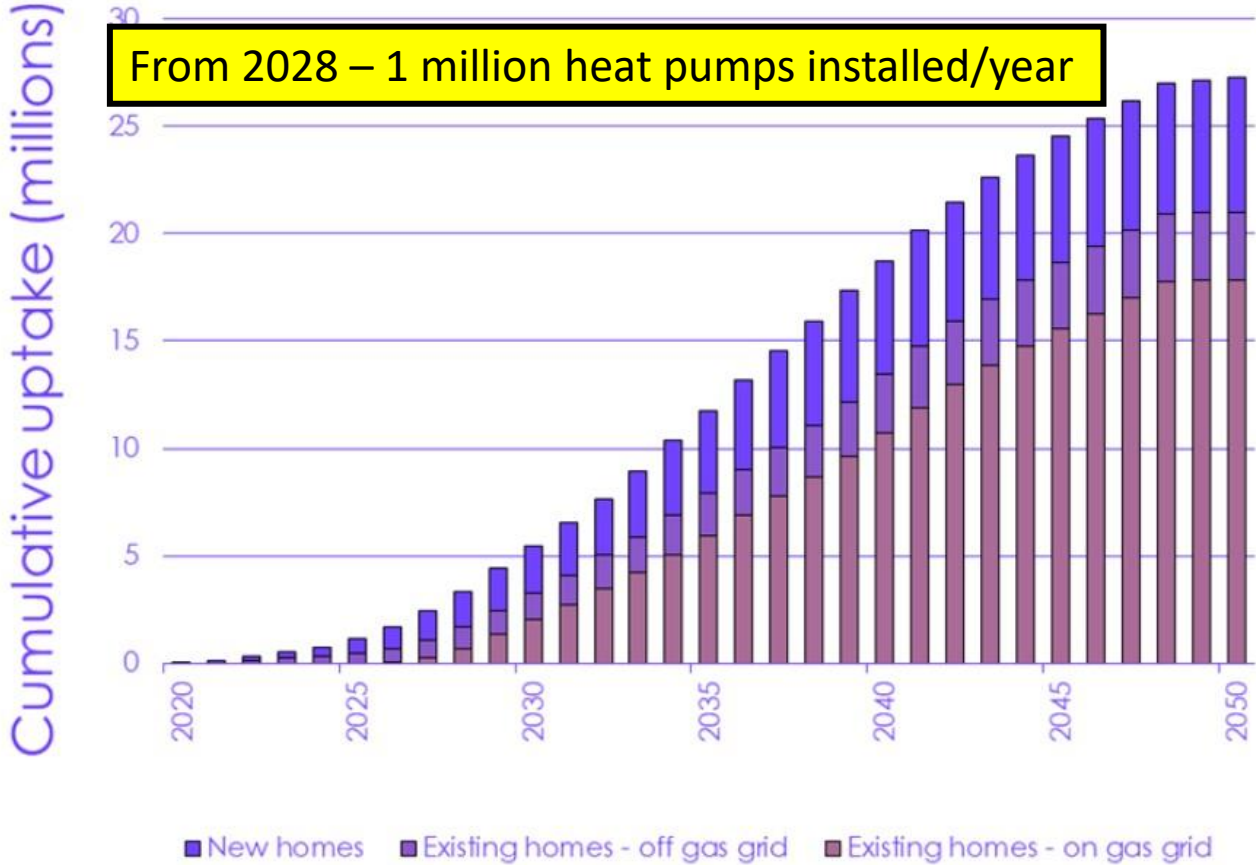
Key

- Current rate of installation (per 20,000)
- Required rate to meet net zero (per 20,000)

At the current rate of heat pump deployment it would take **700 years** to hit net-zero

Heatpump installation to reach net zero (CCC)

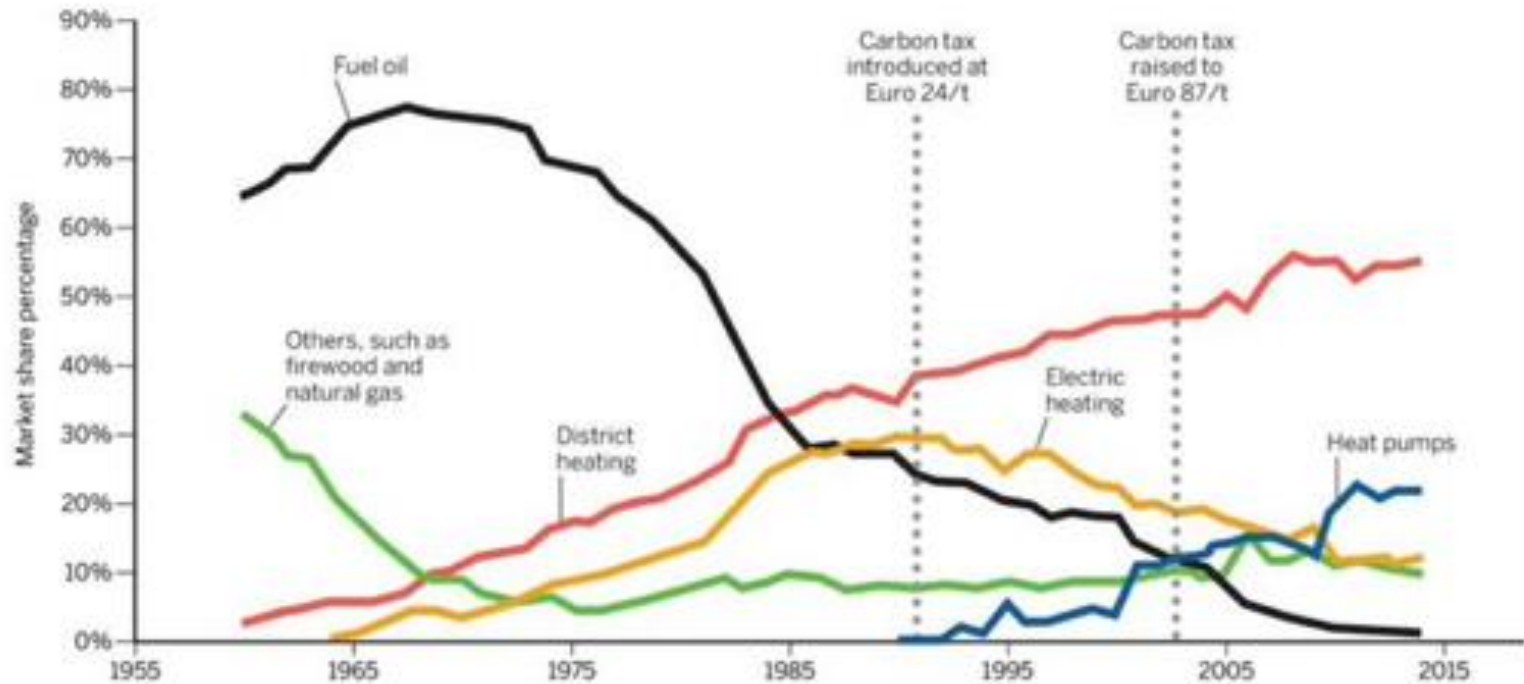
Figure A3.2.c Uptake of heat pumps in residential buildings



Source: Element Energy for the CCC (2020) *Development of trajectories for residential heat decarbonisation to inform the sixth carbon budget.*

Are massive changes possible ?

Figure 6. Evolution of heat delivered to buildings in Sweden



Source: Adapted from Werner, S. (2017). *District heating and cooling in Sweden*; Government Offices of Sweden. (2021). *Sweden's carbon tax*

From 1975 – 1995 Sweden reduced % Fuel Oil from 68% to 20%



Sussex
Green
Ideas