



HIGHGATE  
SOCIETY

## Heat Pumps Are Coming

**The role of electrification in decarbonising homes  
& the role of government policy**

14<sup>th</sup> June 2021

# The ultimate renewable energy resource



## Why is electrification carbon-efficient?

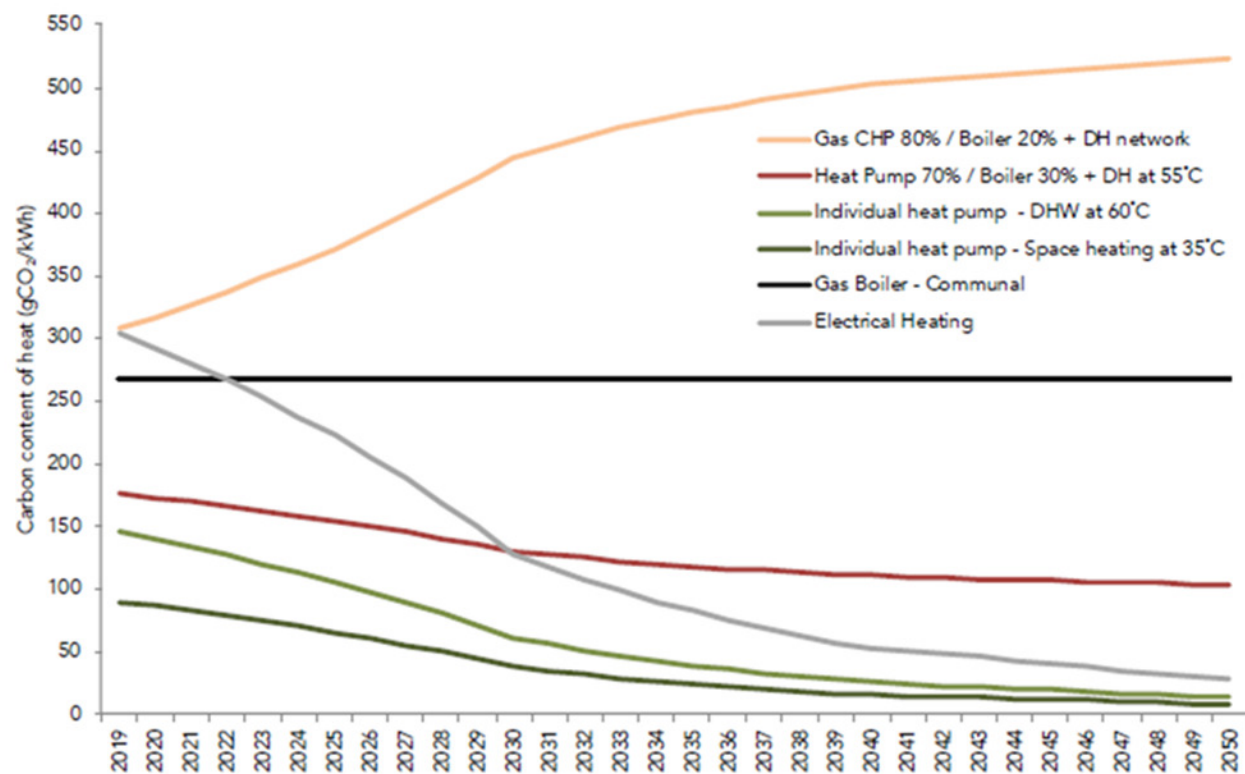


Figure 4.05 – Projected carbon factor of heat based on HM Treasury Green Book marginal emission factors



# Why is electrification carbon-efficient?



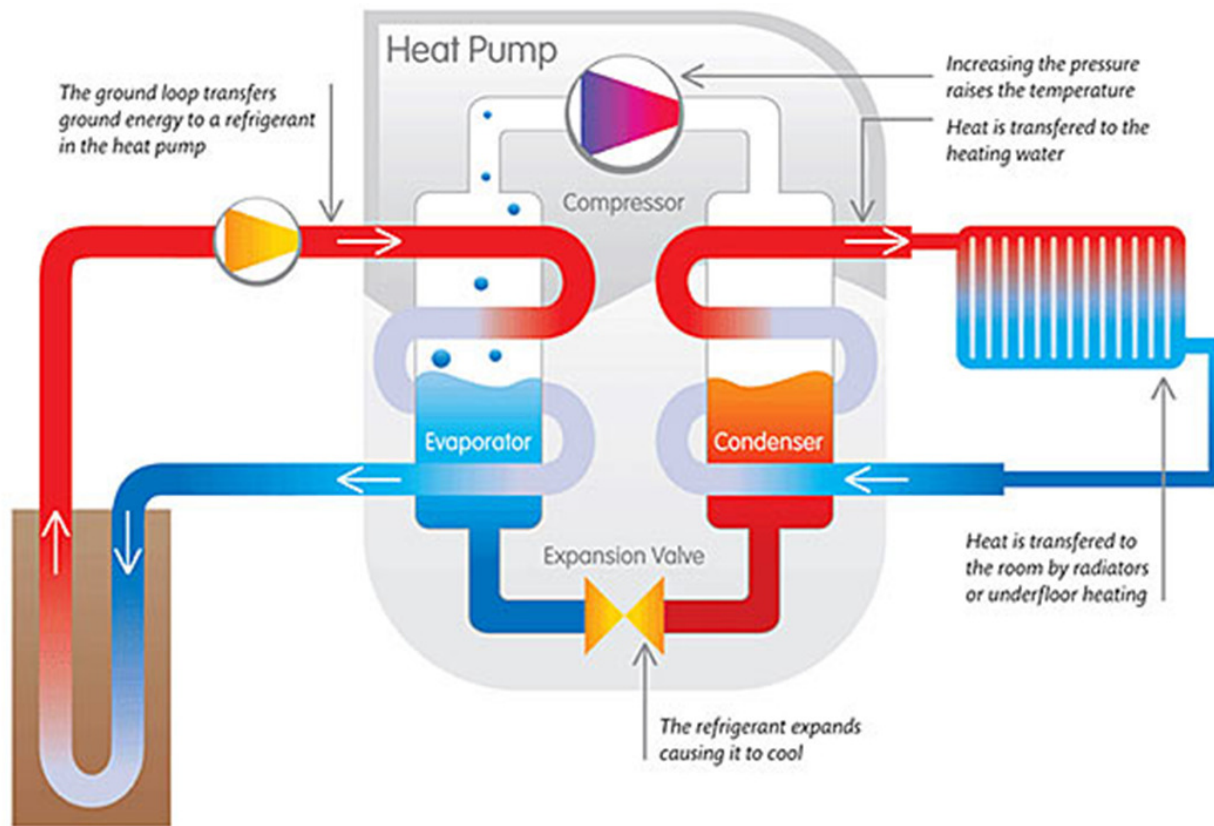
## Carbon Dioxide Emissions Comparison - Electricity vs. Oil vs. LPG vs. Gas

Total Heating (+ DHW) Demand	10,800	kWh/annum	Note :						
SPF	3.20								
Electricity Consumed By Heat Pump	3,375	kWh/annum	Note :						
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## The heat efficiency hierarchy

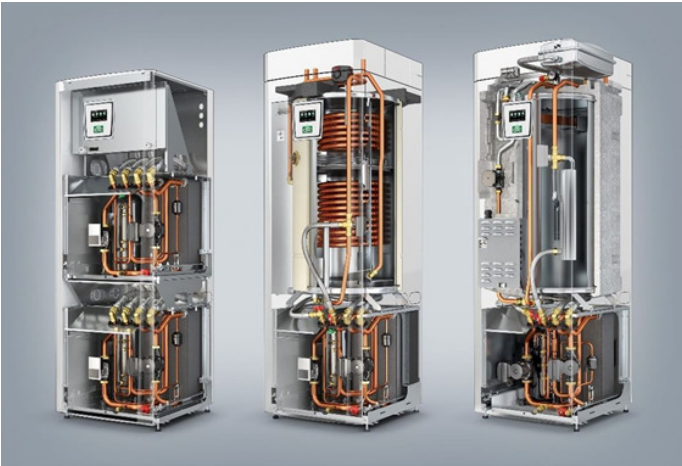
- Waste heat – you lose, you lose!
  - Building fabric, insulation
- Waste heat – you harvest, you win!
  - Heat recovery
- Waste heat may be “over the fence”
  - Water treatment plants, escaping process heat, mine water, cooling processes, neighbouring power plants (including nuclear)
- Heat from self-generated sources
  - Local electricity, biomass, all forms
- Heat from bought-in resources
  - Grid electricity, gas, CHP

# Heat pumps 101





## Heat pumps 101 – what do they look like?





## Heat pumps 101 – any emitter type





## Heat pumps 101 – all house & development types

