

Street by street mass decarbonisation: Networked Heat Pumps

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Agenda

- 1 How Ground-Source Heat Pumps Work
- 2 Why Ground-Source & Barriers
- 3 Scaling Ground-Source: Street By Street

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Kensa at a glance



Kensa is the UK's leading manufacturer, designer and installer of networked ground source heat pumps.

We are proud to deliver the lowest carbon, lowest running cost and lowest lifecycle cost heating and hot water to our core markets.

British

made in the UK, reducing supply chain risks

15 years

experience in social housing

Turnkey solution

manufacturing, design, installation

17,000+

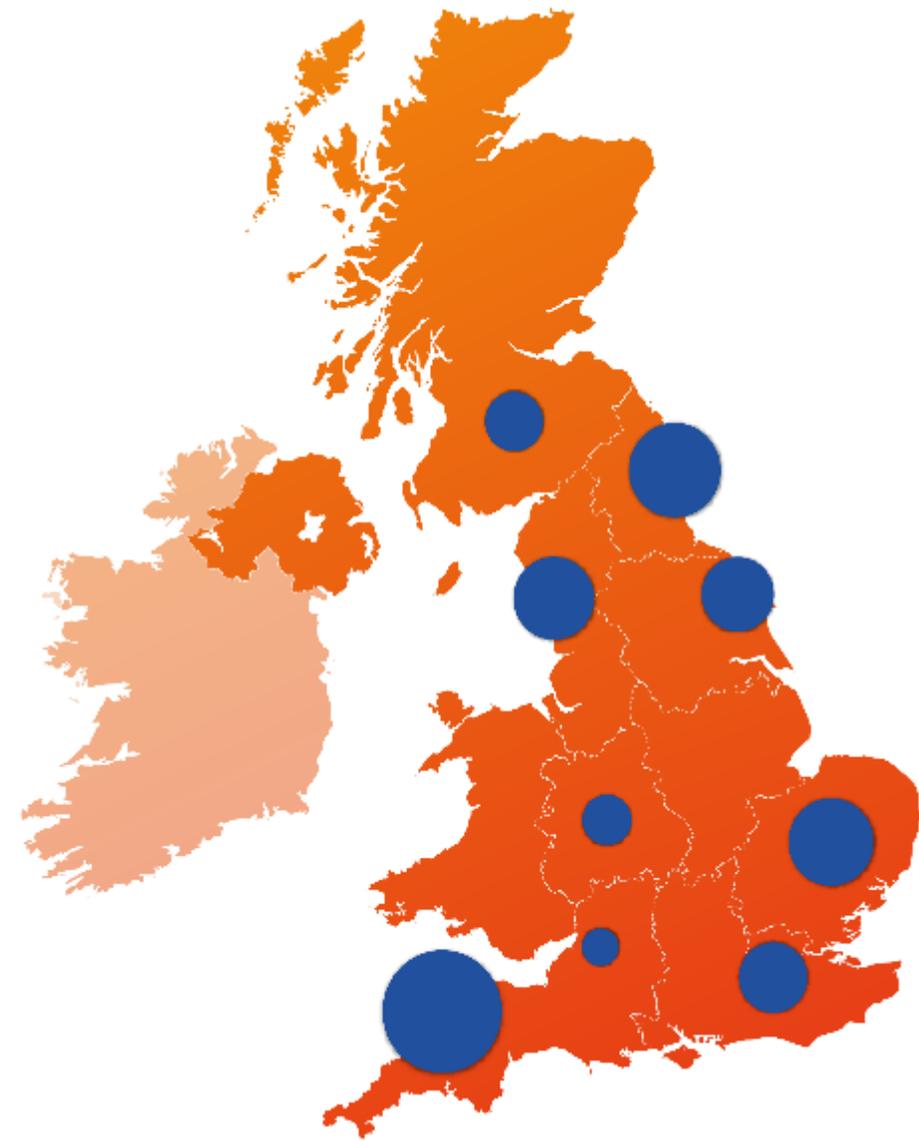
heat pumps installed to date

1 million

tonnes of CO₂ saved from installed Kensa heat pumps over their lifespan*

Backed by leading investors





215 social housing retrofit projects and counting

Largest and most established player across social housing.

More than 30 high rise building retrofits

Most experienced at 'complex to decarbonise' high and low-rise flats.

100 new build development projects and counting

Funded CapEx model delivers the best outcome for developers.

Our markets



Industry leaders in low carbon heating solutions for social housing, new build, commercial and light industrial settings



Social housing and affordable retrofit



New build development

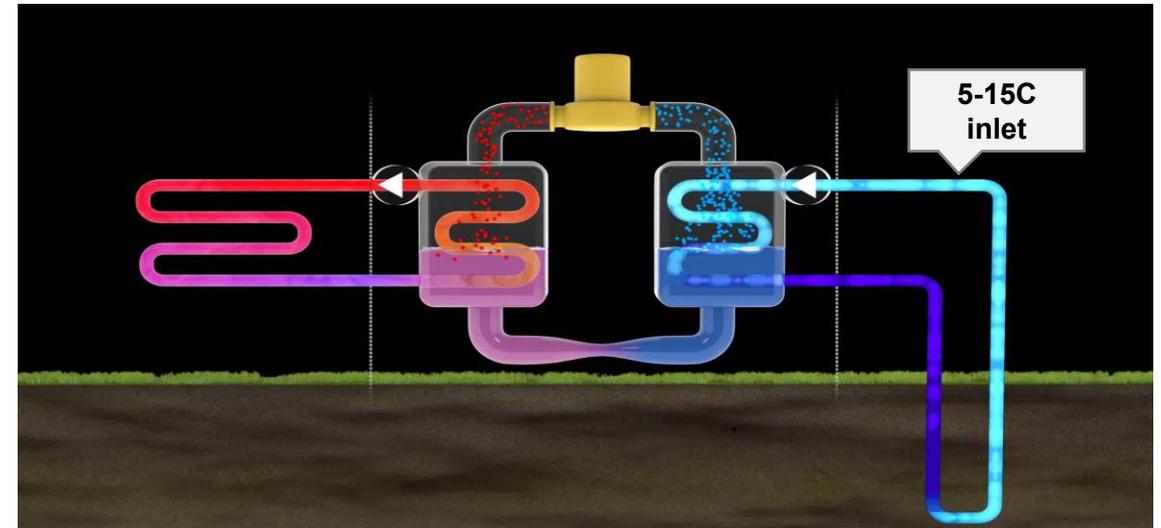


Commercial and light Industrial retrofit and development

How a Ground Source Heat Pump Works

Like a gas boiler...

...but 4-5x more efficient, with no combustion or NOx/SOx emissions



- White boxes that produce heating and hot water
- Domestic and non-domestic buildings
- New build and retrofit

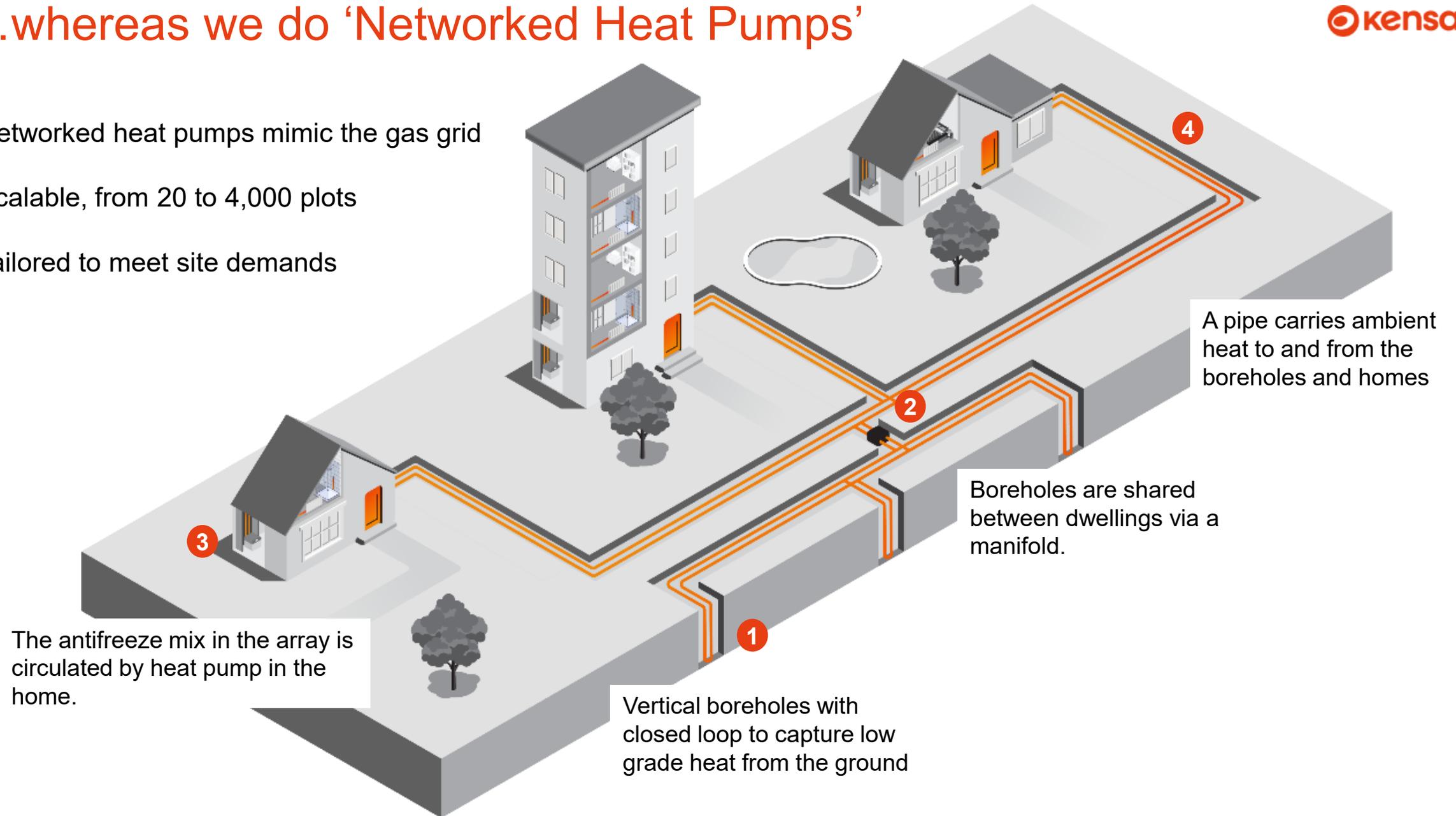


What many people think when they hear 'ground-source'...

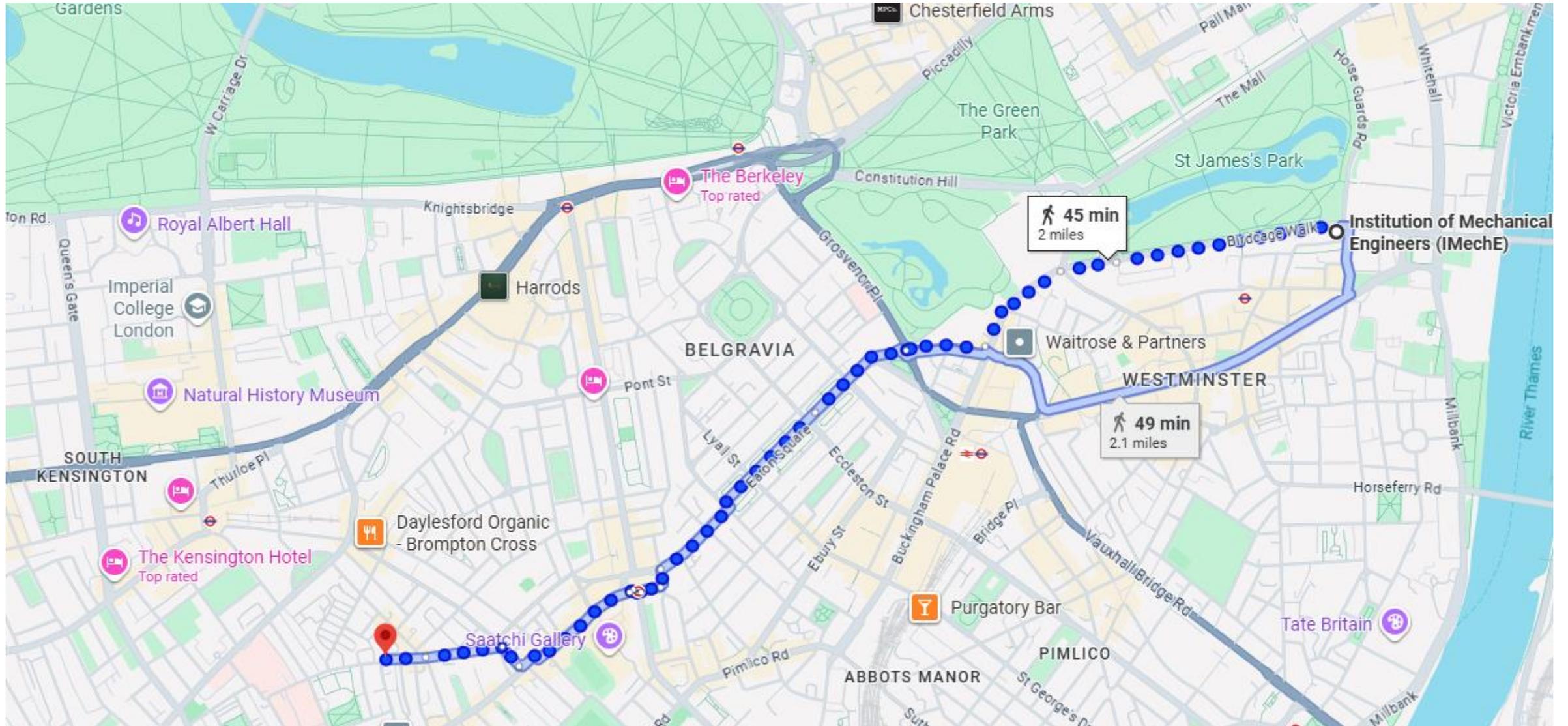


...whereas we do 'Networked Heat Pumps'

- Networked heat pumps mimic the gas grid
- Scalable, from 20 to 4,000 plots
- Tailored to meet site demands



It can fit anywhere



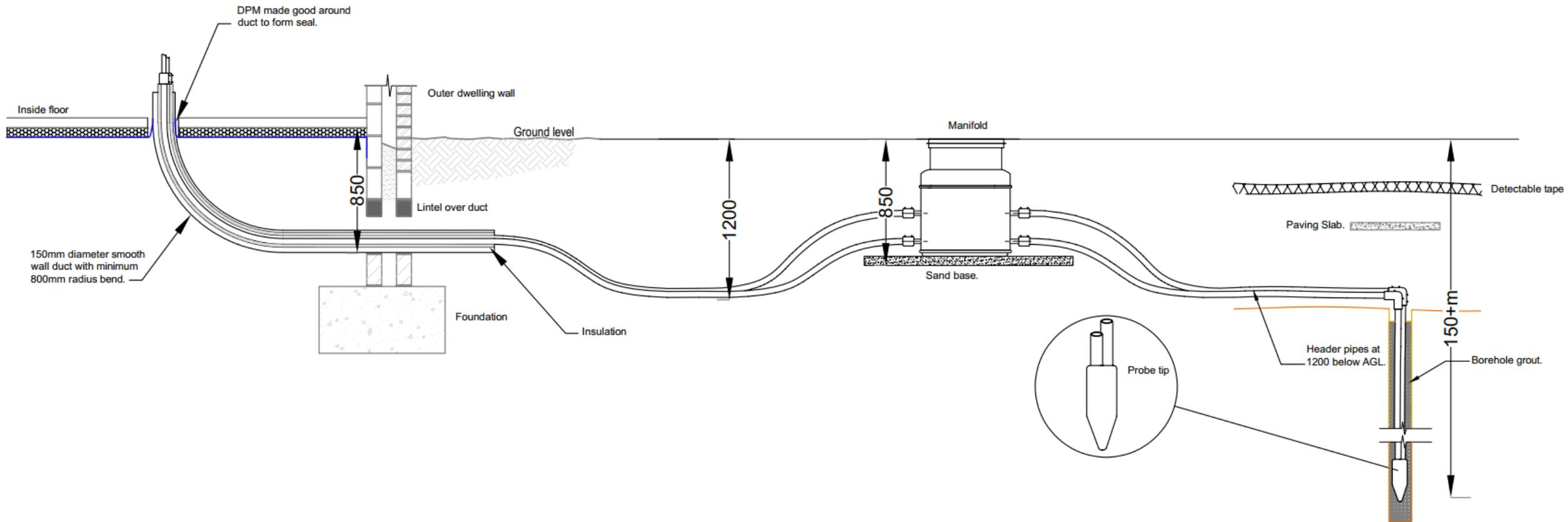
It can fit anywhere



How These 100 Year Old Apartments Bust Heat Pump Myths!

- 81 Edwardian Era mid-rise flats
- 27 boreholes
- Individual GSHPs in each apartment

How it looks underground



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Why Ground Source



Lowest Running Costs



Least Noise

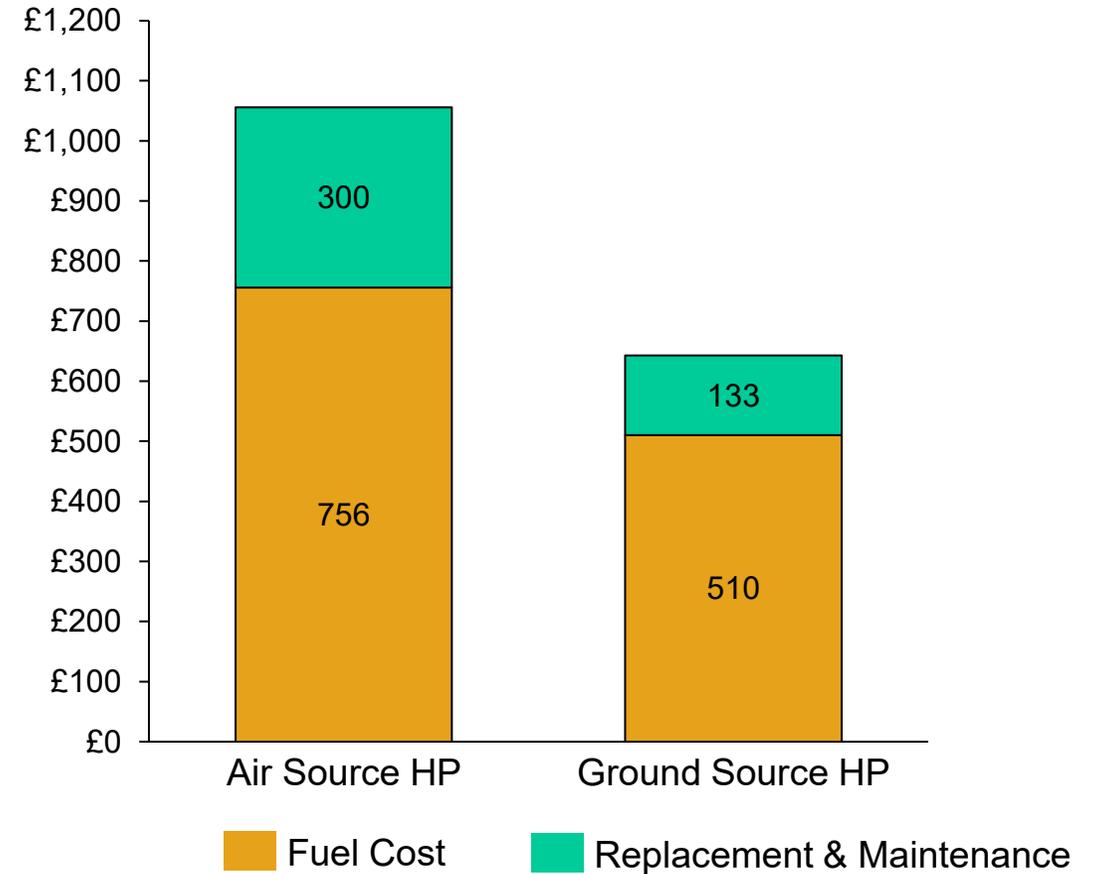


Least Maintenance & Replacement Hassle



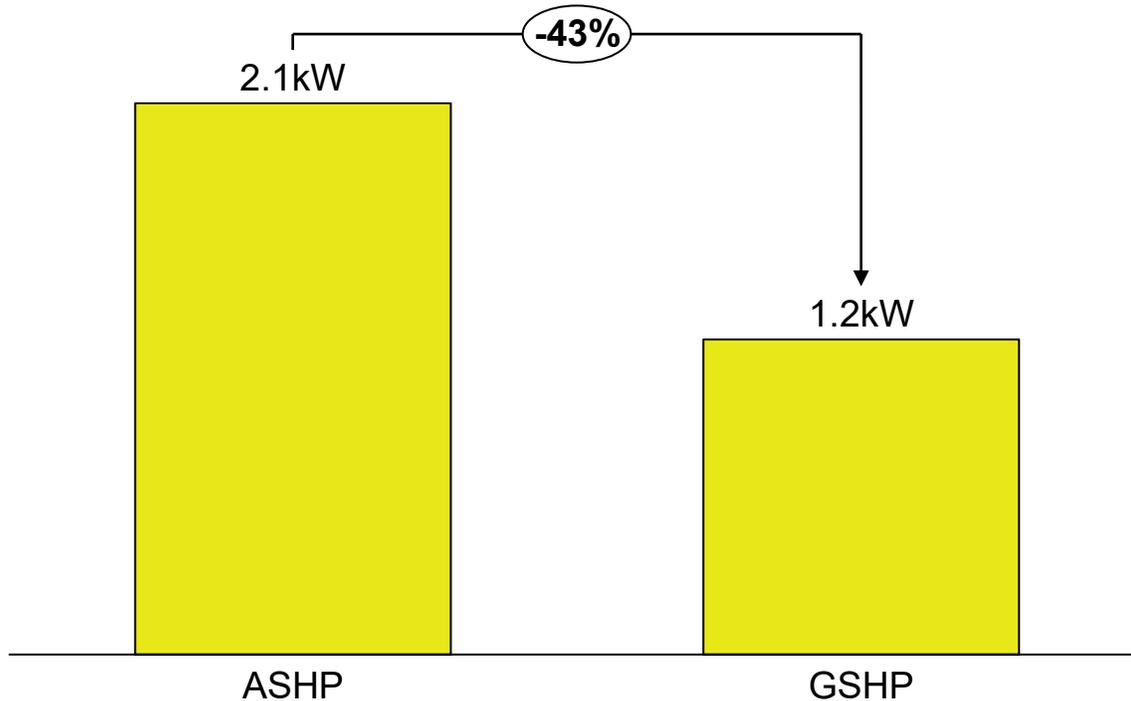
No Visual Impact

Annual Running Costs (£/yr)



Why Ground Source

kW to deliver 5kW heat on the coldest day (peak)



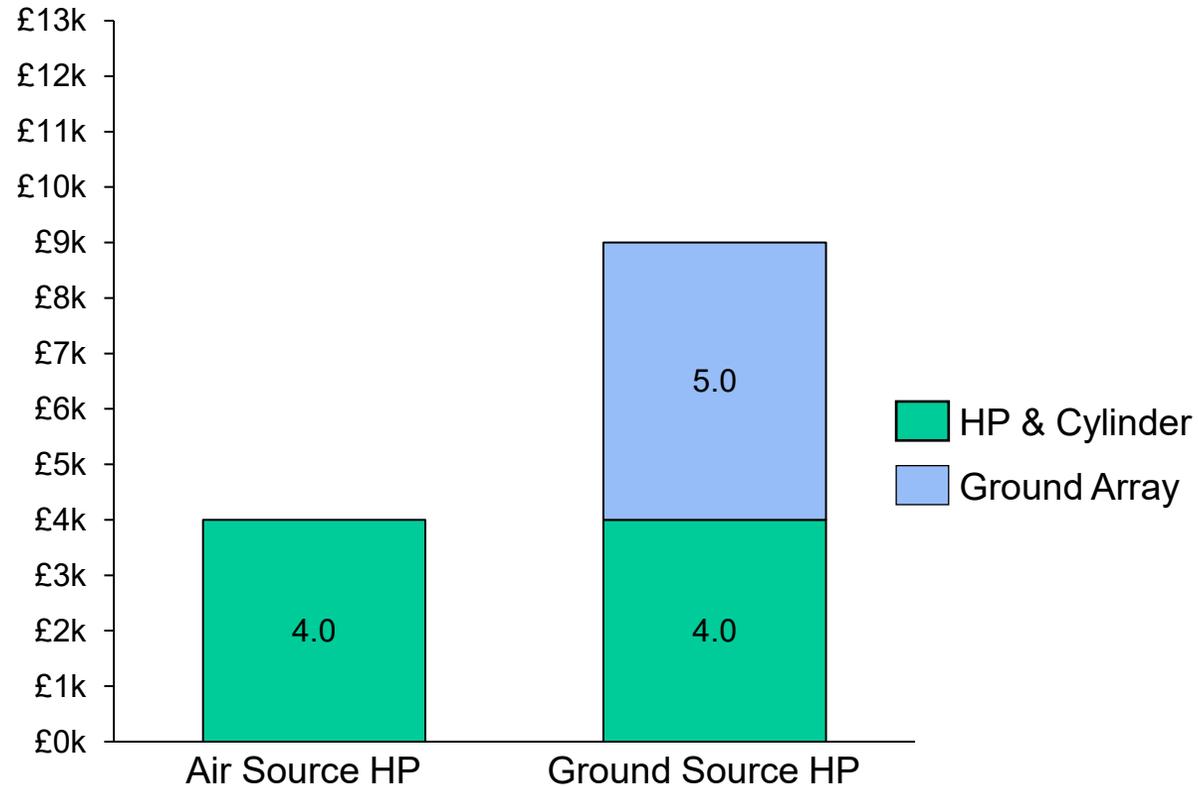
This can mean faster access to site, unlock sites with grid constraints, and cheaper grid/substation upgrades

Why Ground Source → Why Not Ground Source



~~Why Ground Source~~ → Why Not Ground Source

Upfront Cost (£k) to a housebuilder



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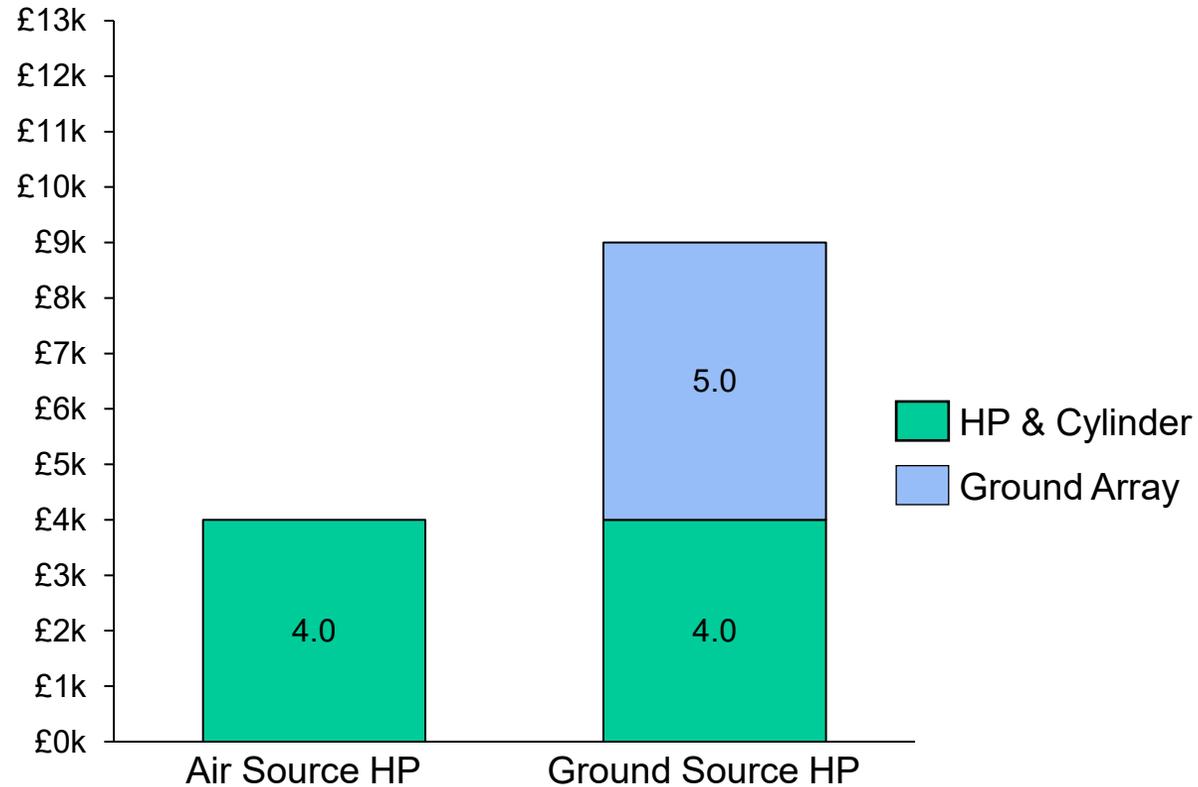
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Why Not Ground Source

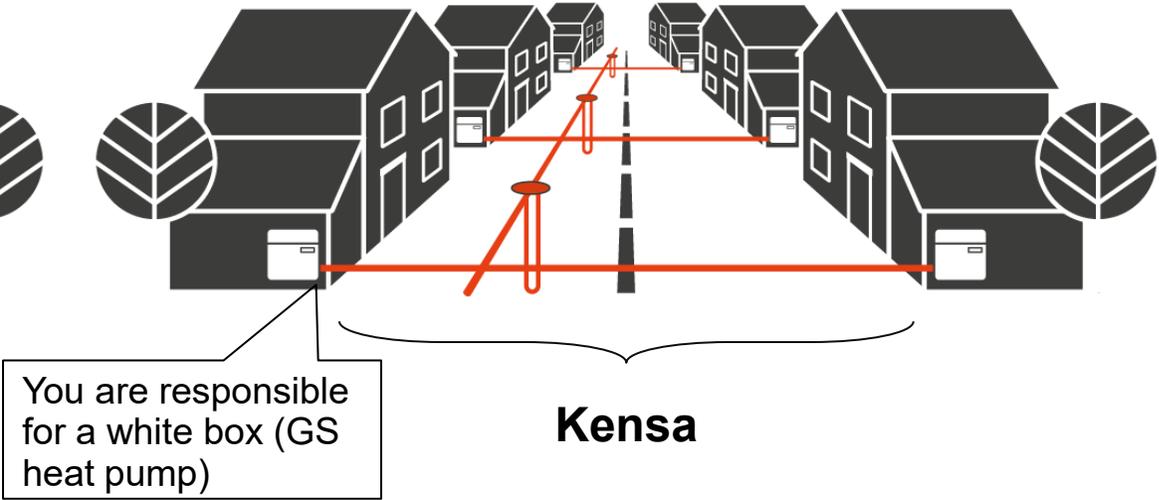
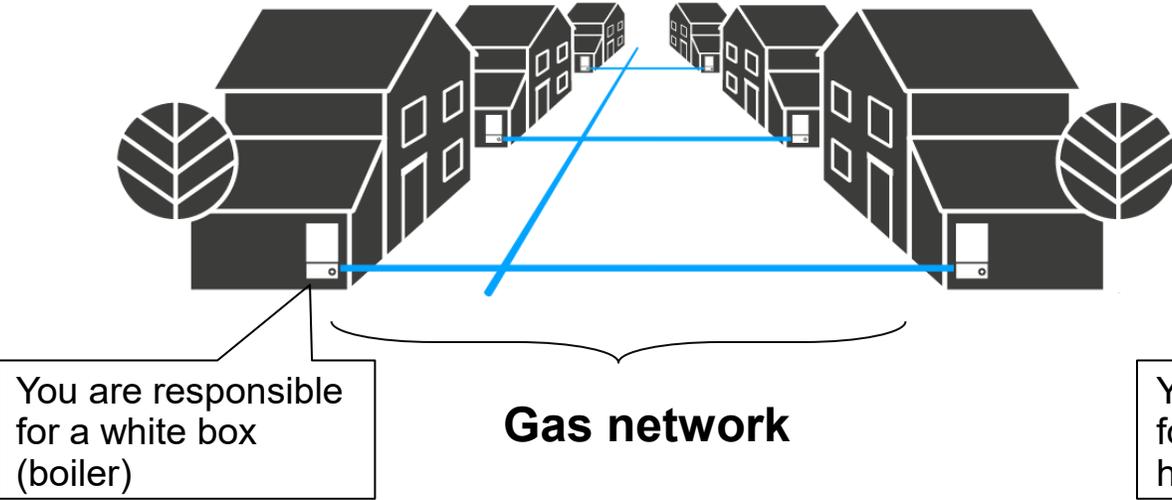
Upfront Cost (£k) to a housebuilder



Think back to the gas network today, you pay a standing charge  to access the infrastructure outside your home

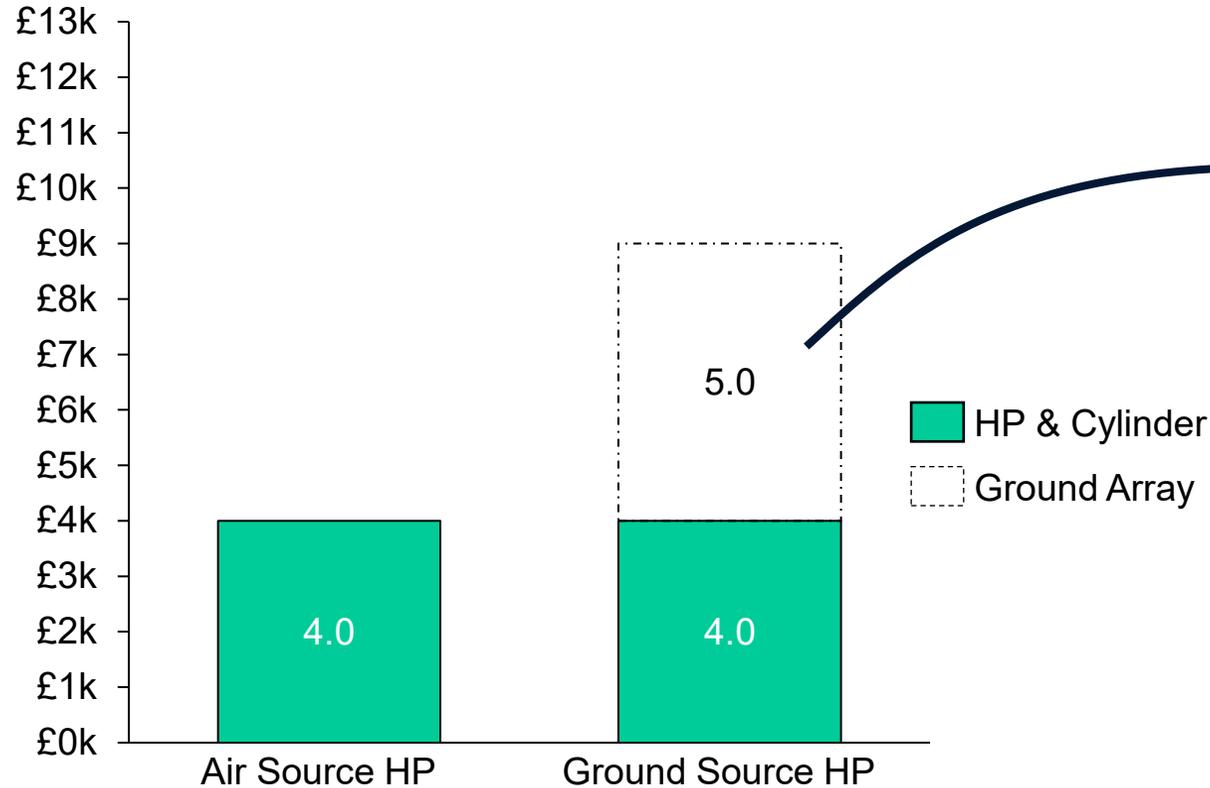
Gas

Networked Heat Pumps

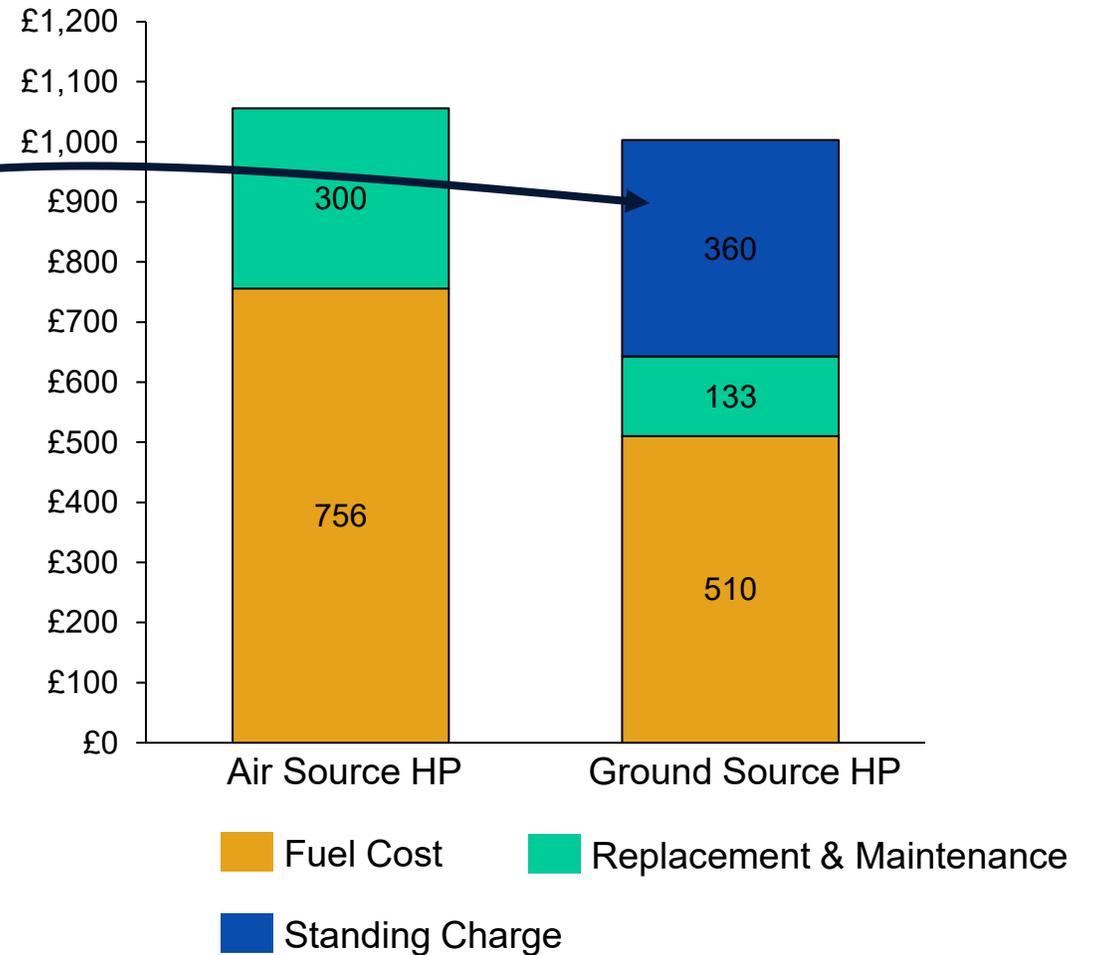


Why Not Ground Source → Why Networked Heat Pumps

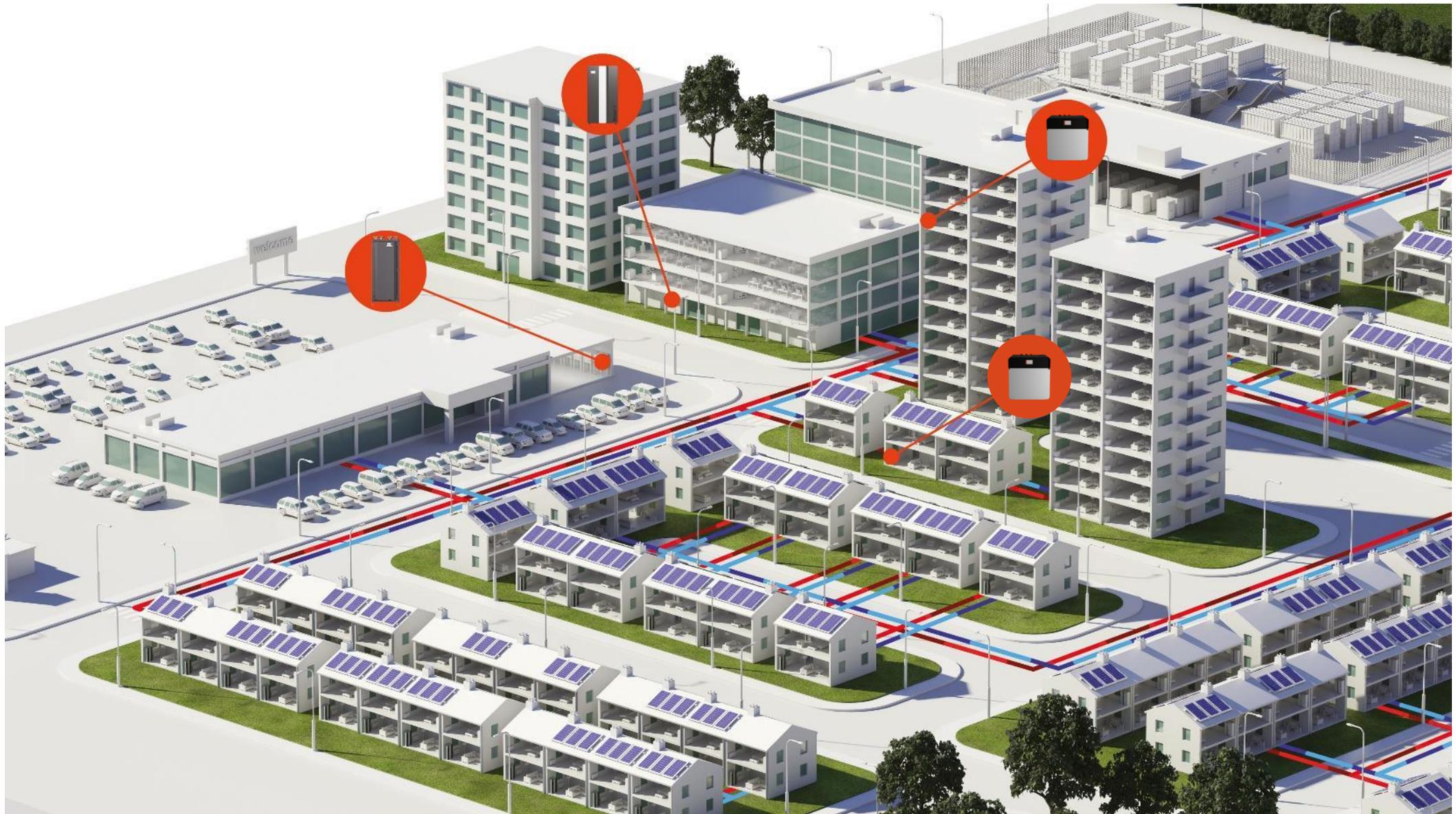
Upfront Cost (£k) to a housebuilder



Annual Running Costs (£/yr)



'Next Generation' Version of the Gas Grid

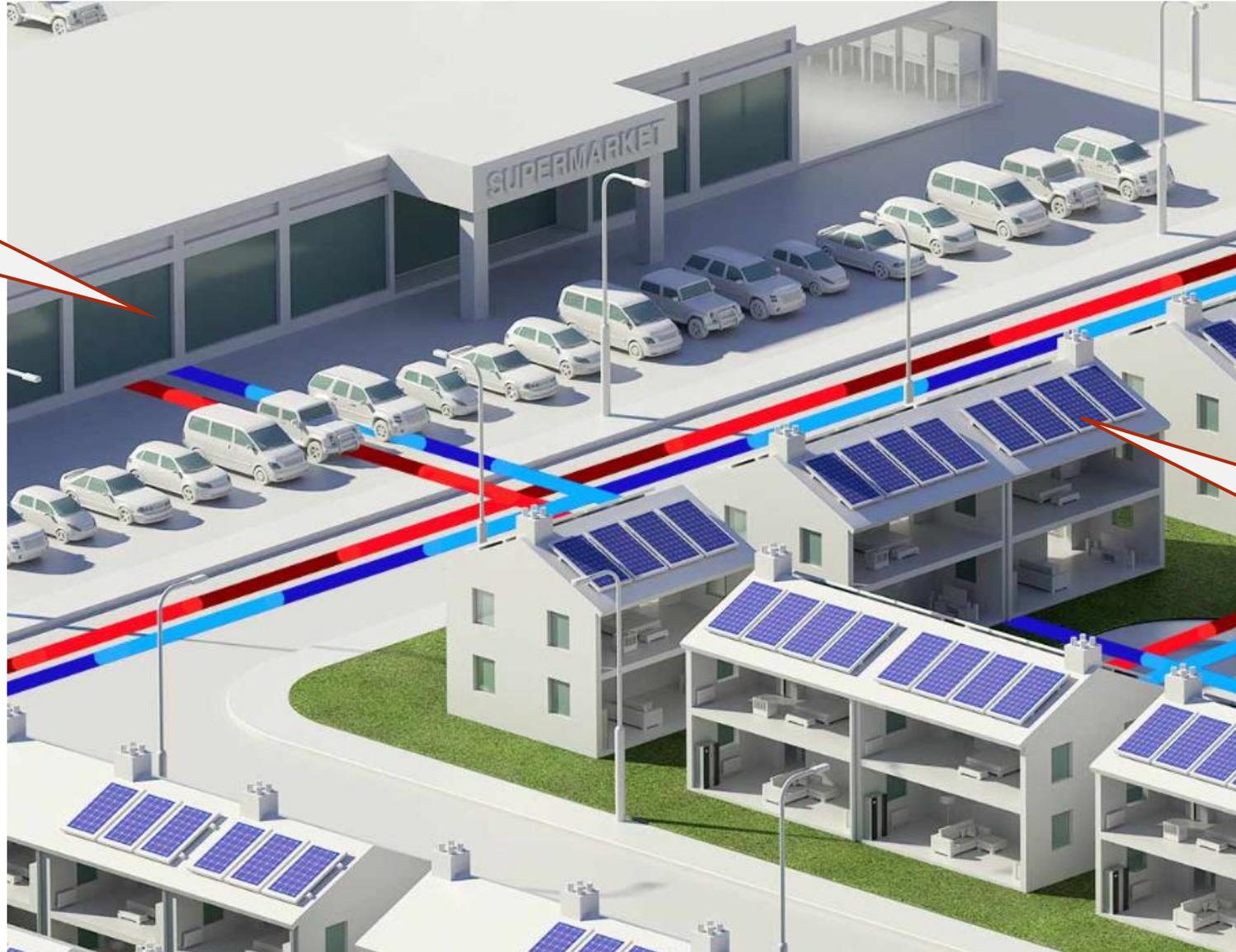


'Next Generation' Version of the Gas Grid



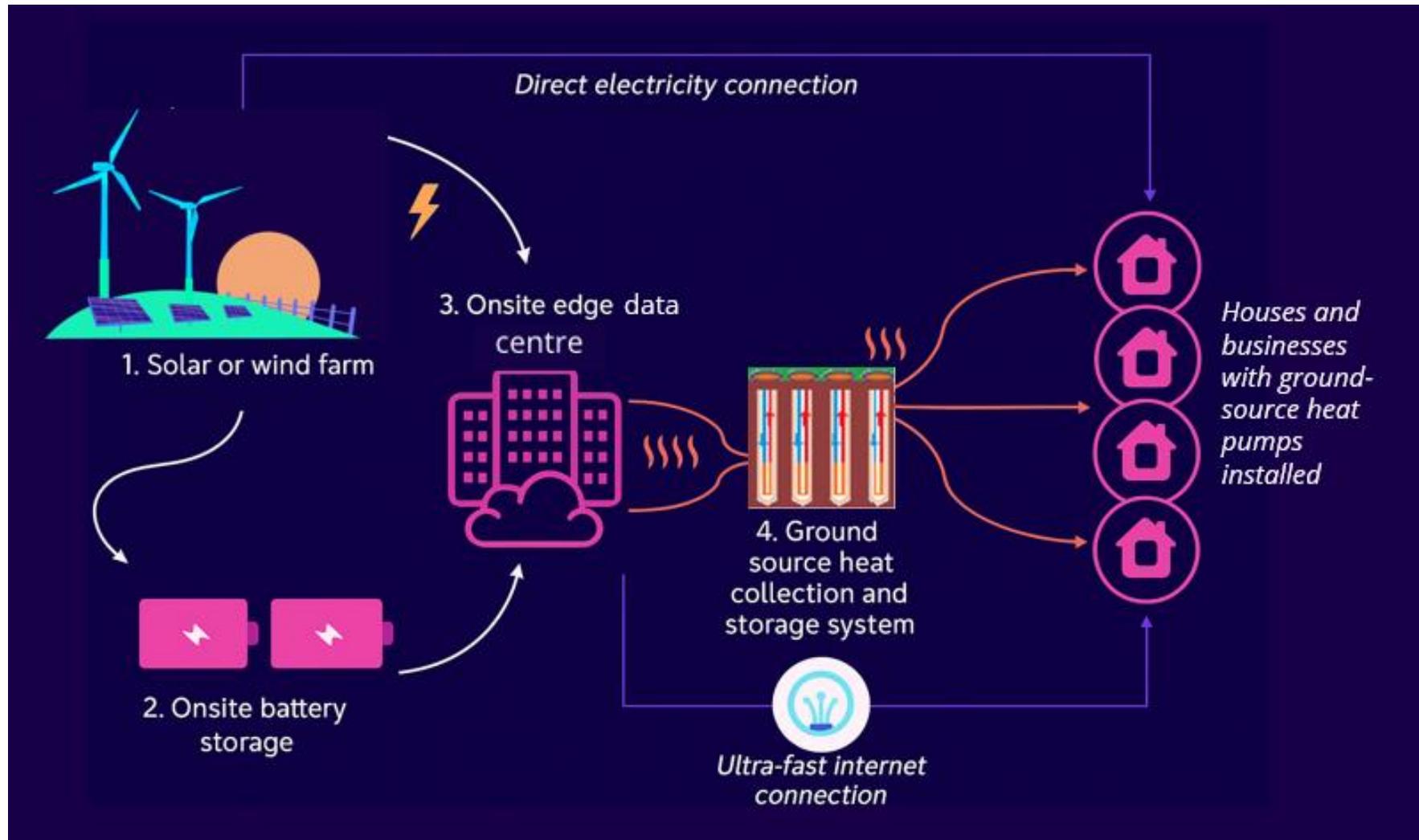
Integrating waste heat

Rejected heat from supermarket (fridges/freezers)

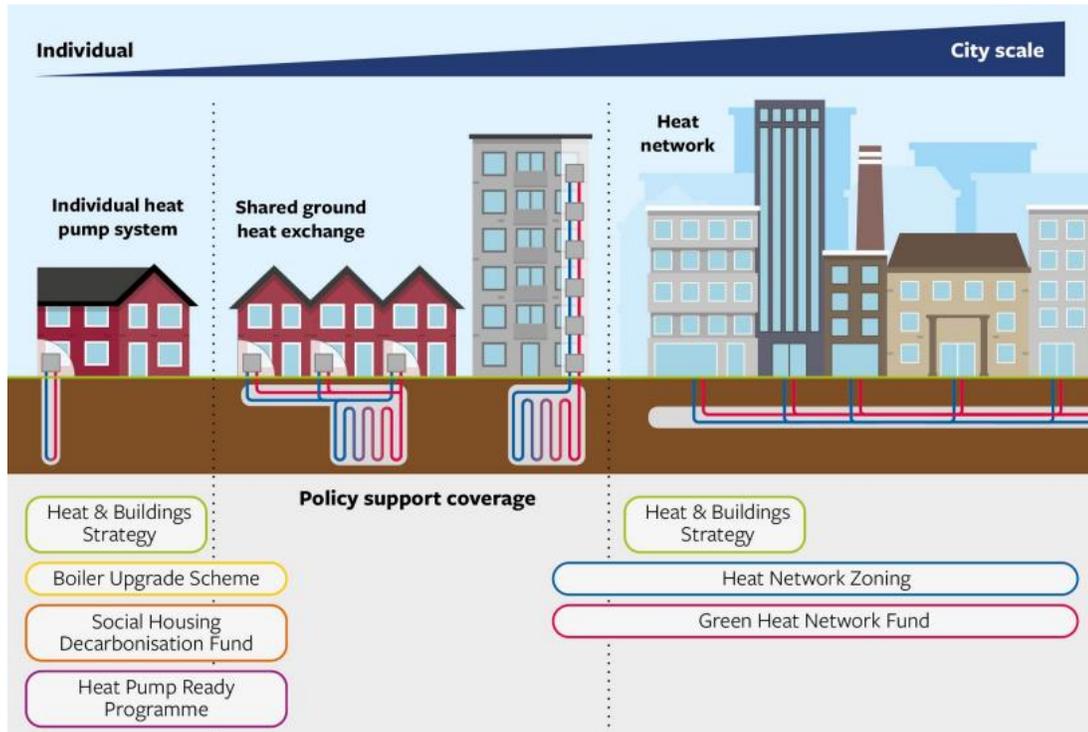


PV → PVT

Integrating waste heat

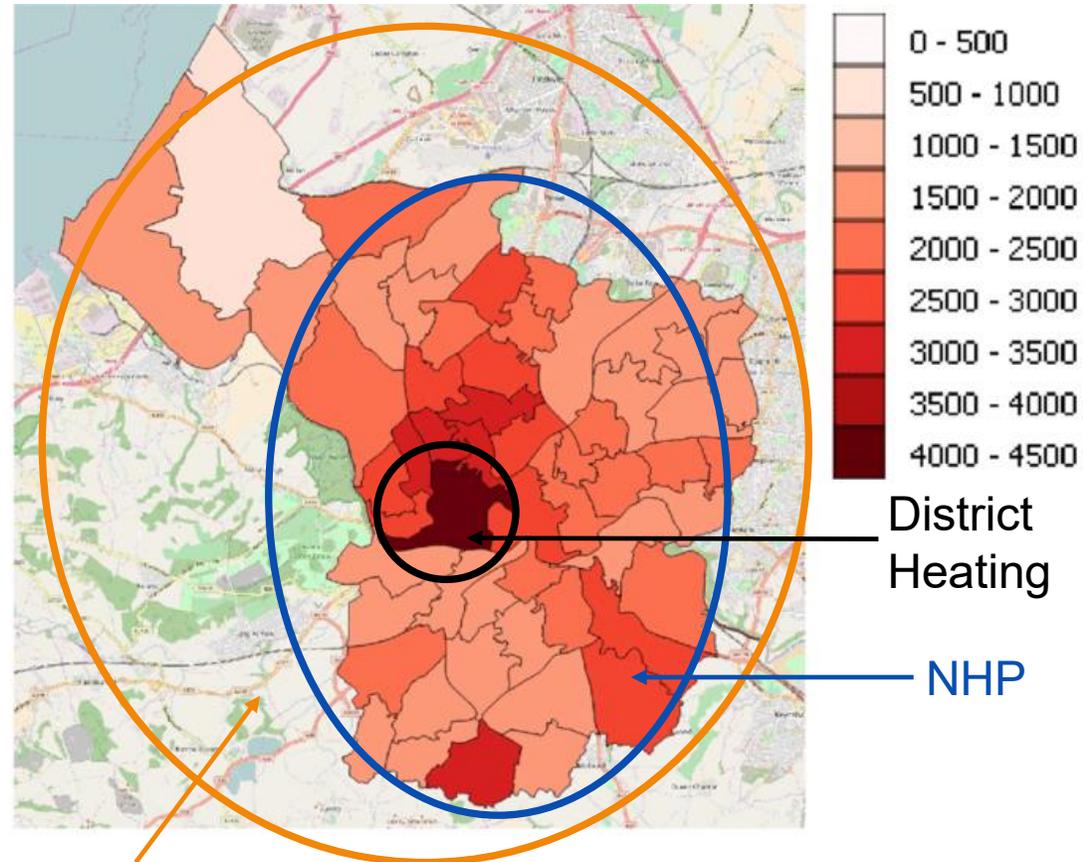


The standout solution especially for the 'middle' of UK housing: terraced streets and flats



The standout solution especially for the 'middle' of UK housing: terraced streets and flats

Bristol City Centre Heat Demand – mWh/m/year



Individual
heat
pump

District
Heating

NHP

Building scale to bring cost downs to realise mass street by street retrofit



Social housing and affordable retrofit



New build development



Commercial and light Industrial retrofit and development

Networked Heat Pumps