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# Creating future-proof, smart & economic local heating solutions

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Smart Energy Wales

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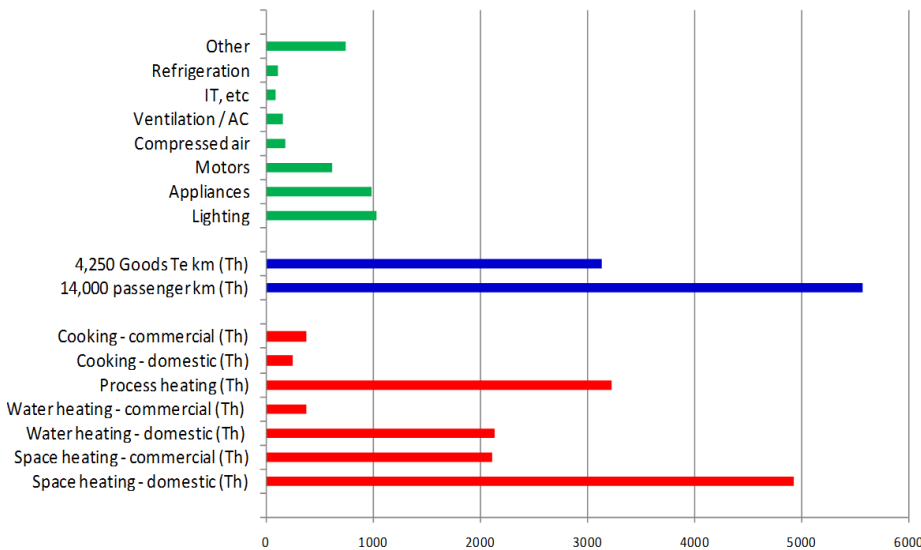
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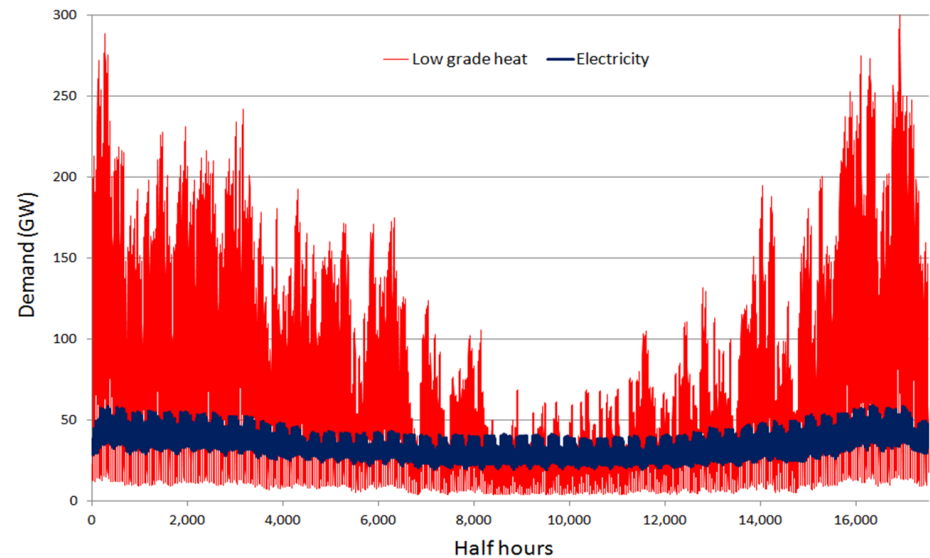
# Heating our homes is a significant end-use for energy

...and contributes significantly to emissions

Energy use per person per year (kWh)



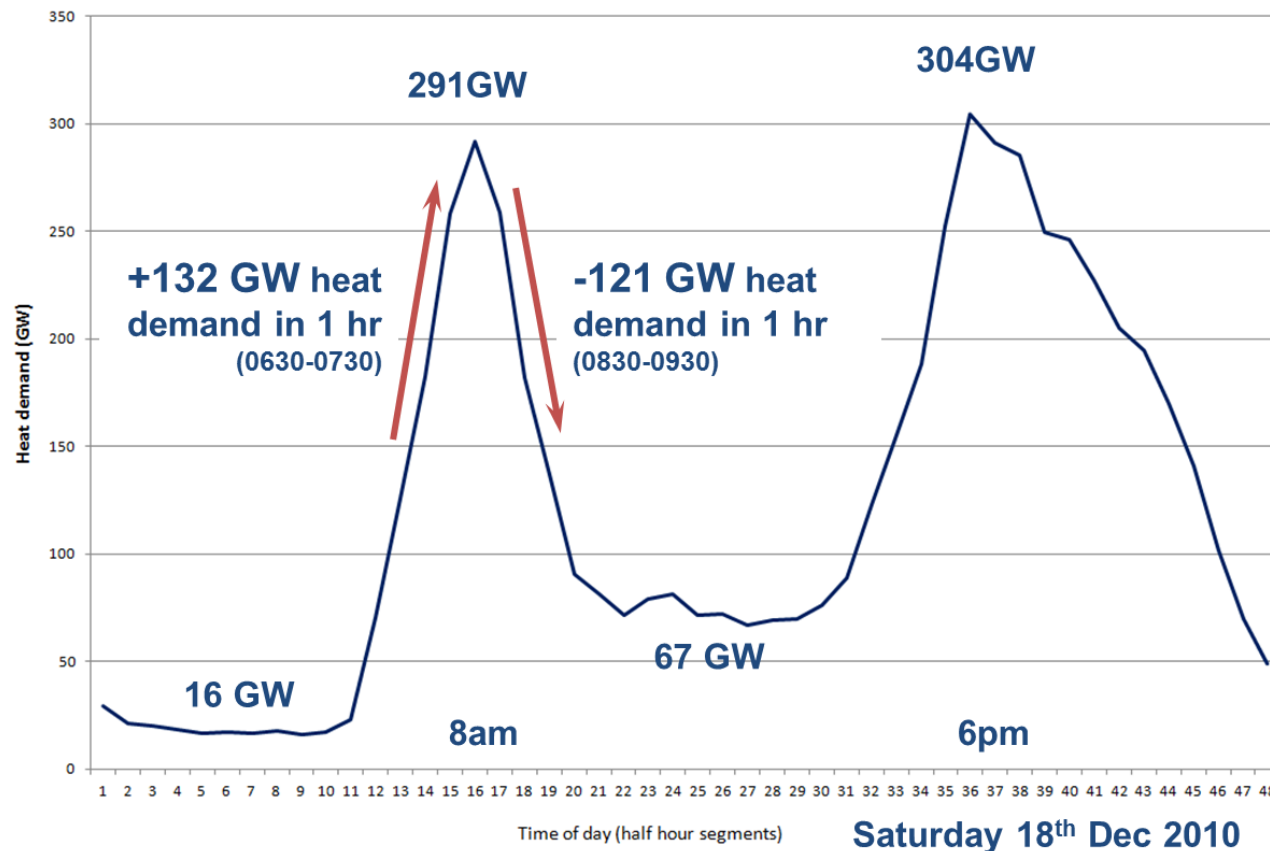
Heat versus electricity demand





# Peak demand for heat can be huge

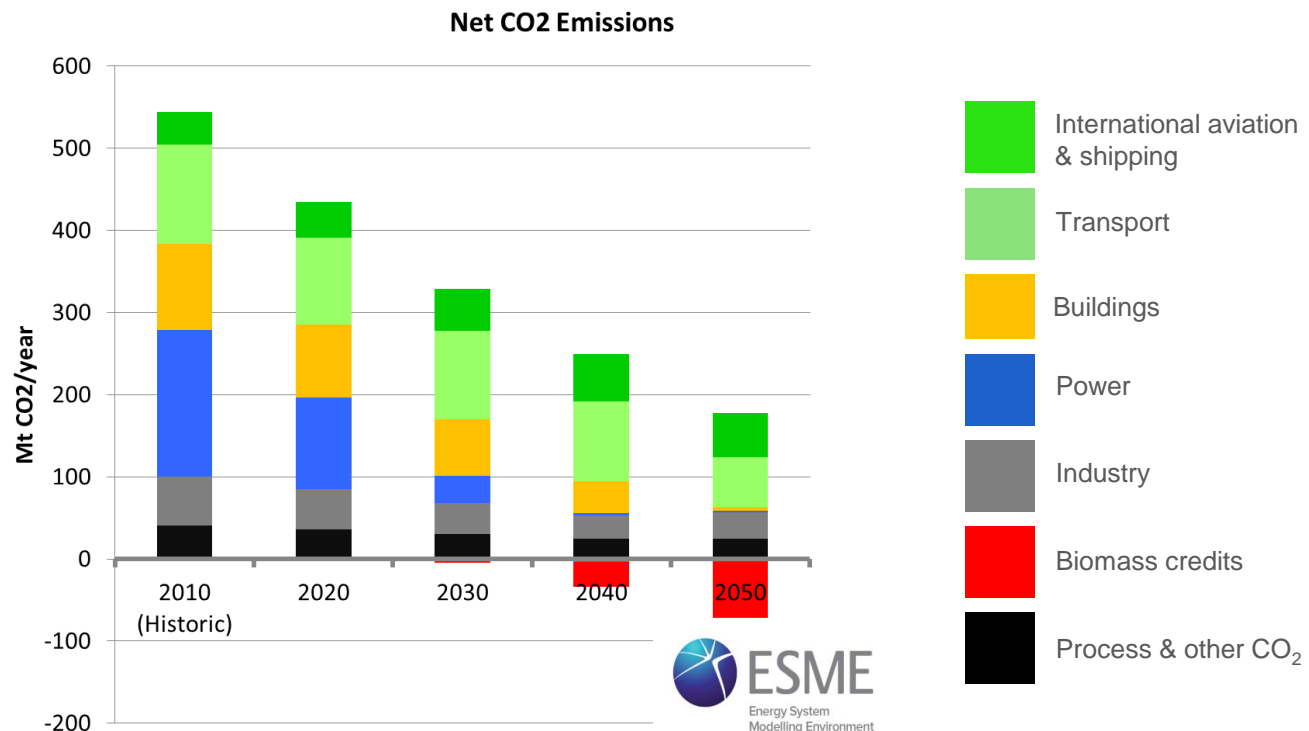
...any new approach has to take this into account





# Decarbonising heat touches every home

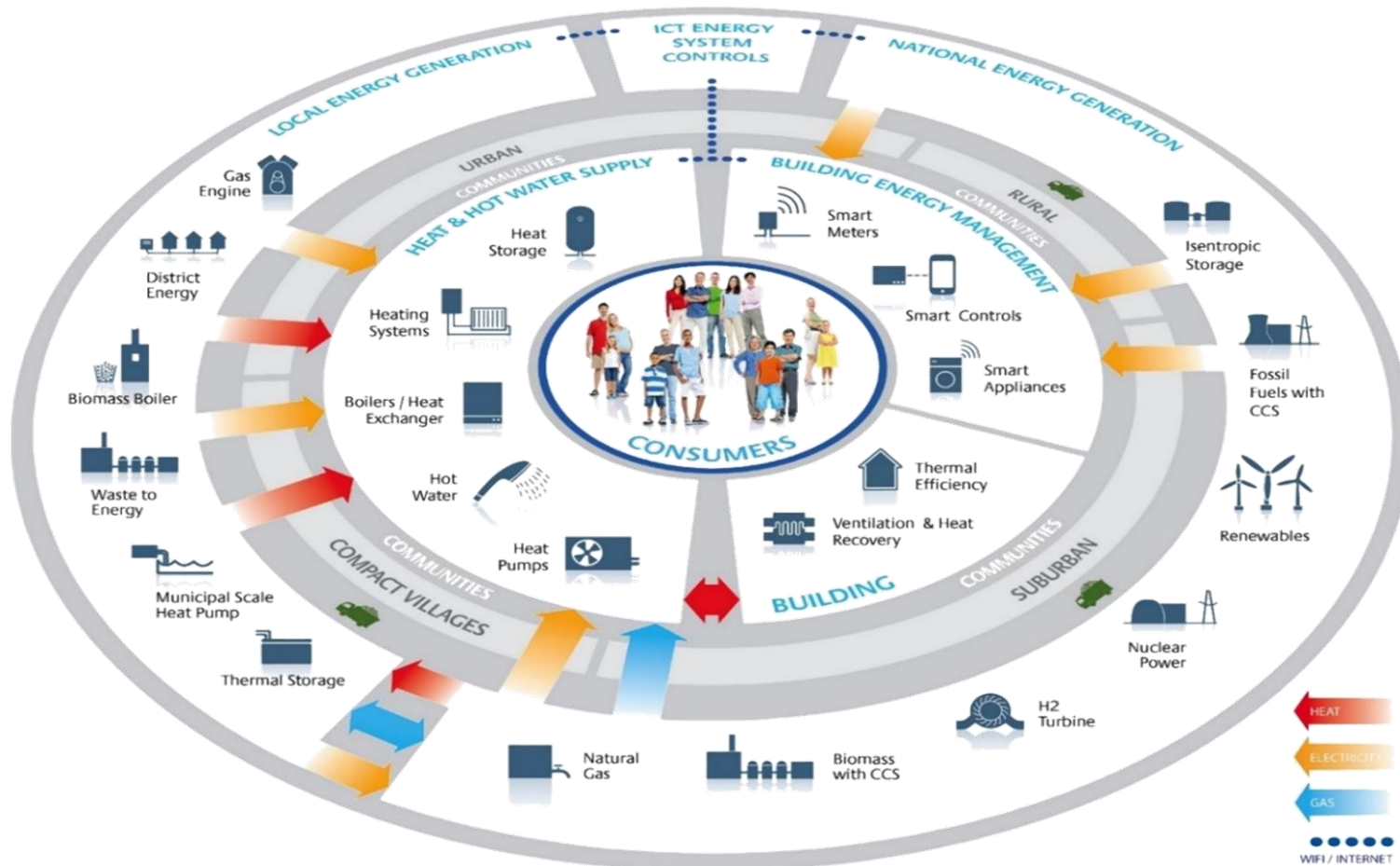
...as part of a least-cost decarbonisation pathway





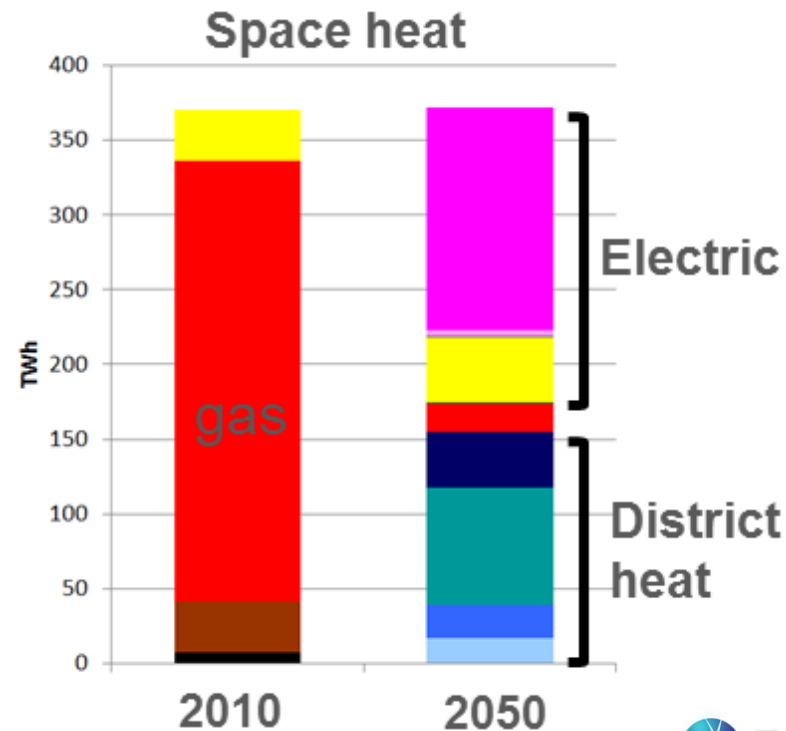
# New heat solutions require a systems integration approach

...which need to be demonstrated at a meaningful scale





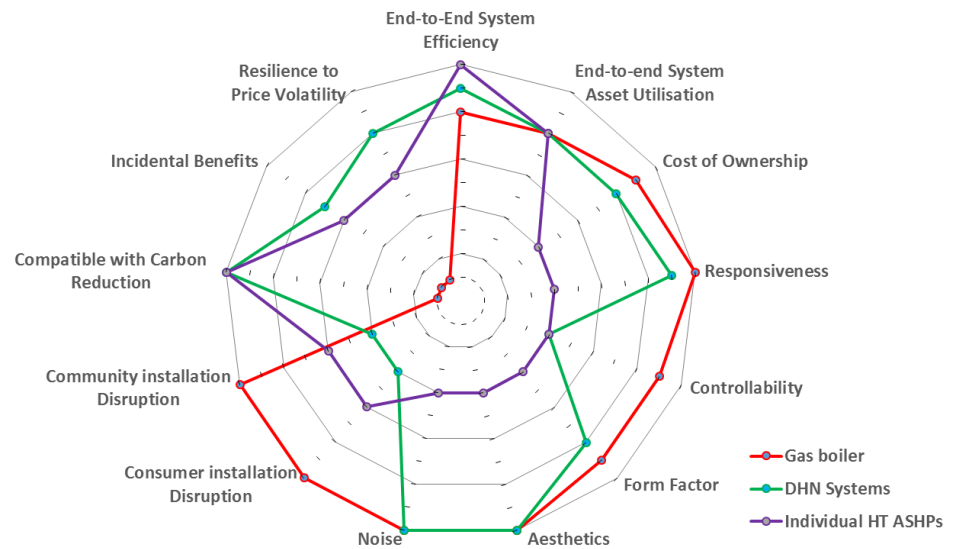
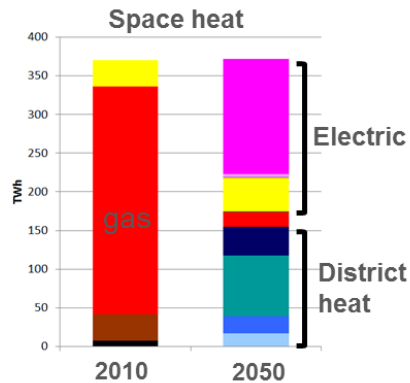
## New heat supply approaches use known solutions





# New heat supply approaches use known solutions

...but the final mix, transition technologies and householder acceptance is unclear, as is the interplay with demand-side approaches



Thermal image from ETI project evaluating the potential to reduce cost of deep fabric retrofit

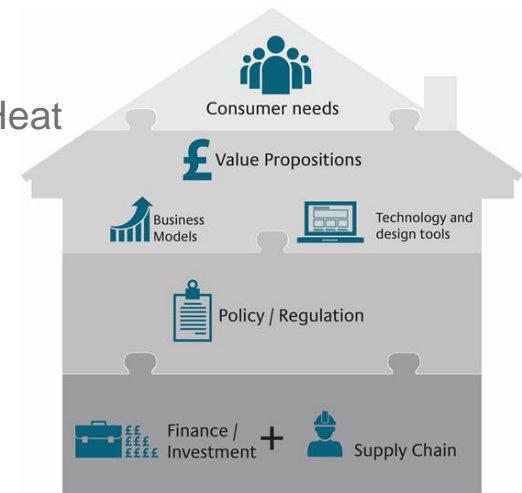
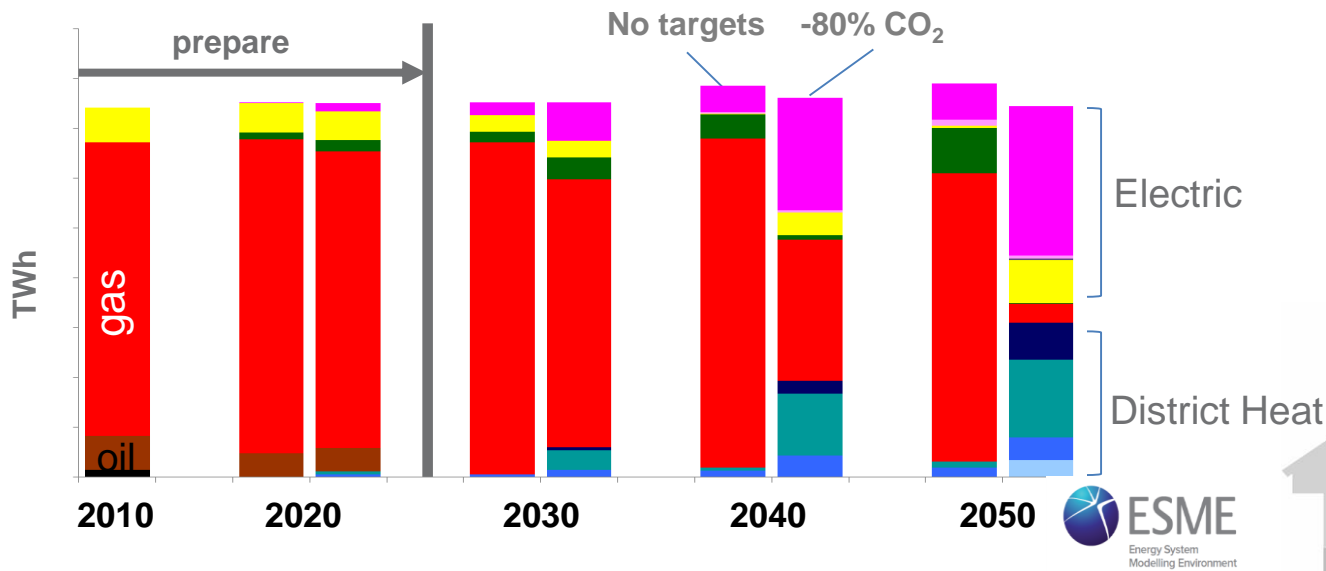
Each area is likely to have different solutions



# We have ~10 years to prepare

...and develop confidence for commercial deployment

UK space heat production



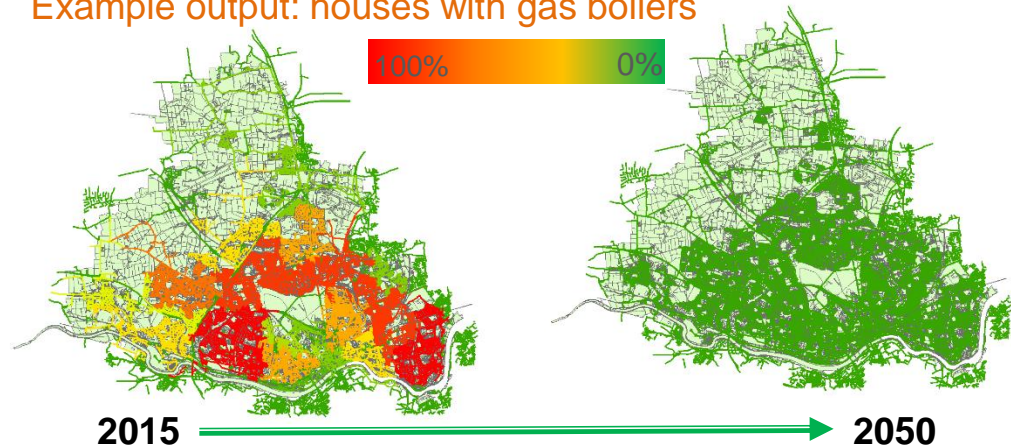




# EnergyPath Networks - Local Area Energy Design tool

...ETI working with Bridgend, Newcastle and Manchester

Example output: houses with gas boilers



Example output: houses with district heating



What solutions

- where
- when
- and with specific local factors



# Working in collaboration towards a full-scale demonstration

## CATAPULT Energy Systems





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