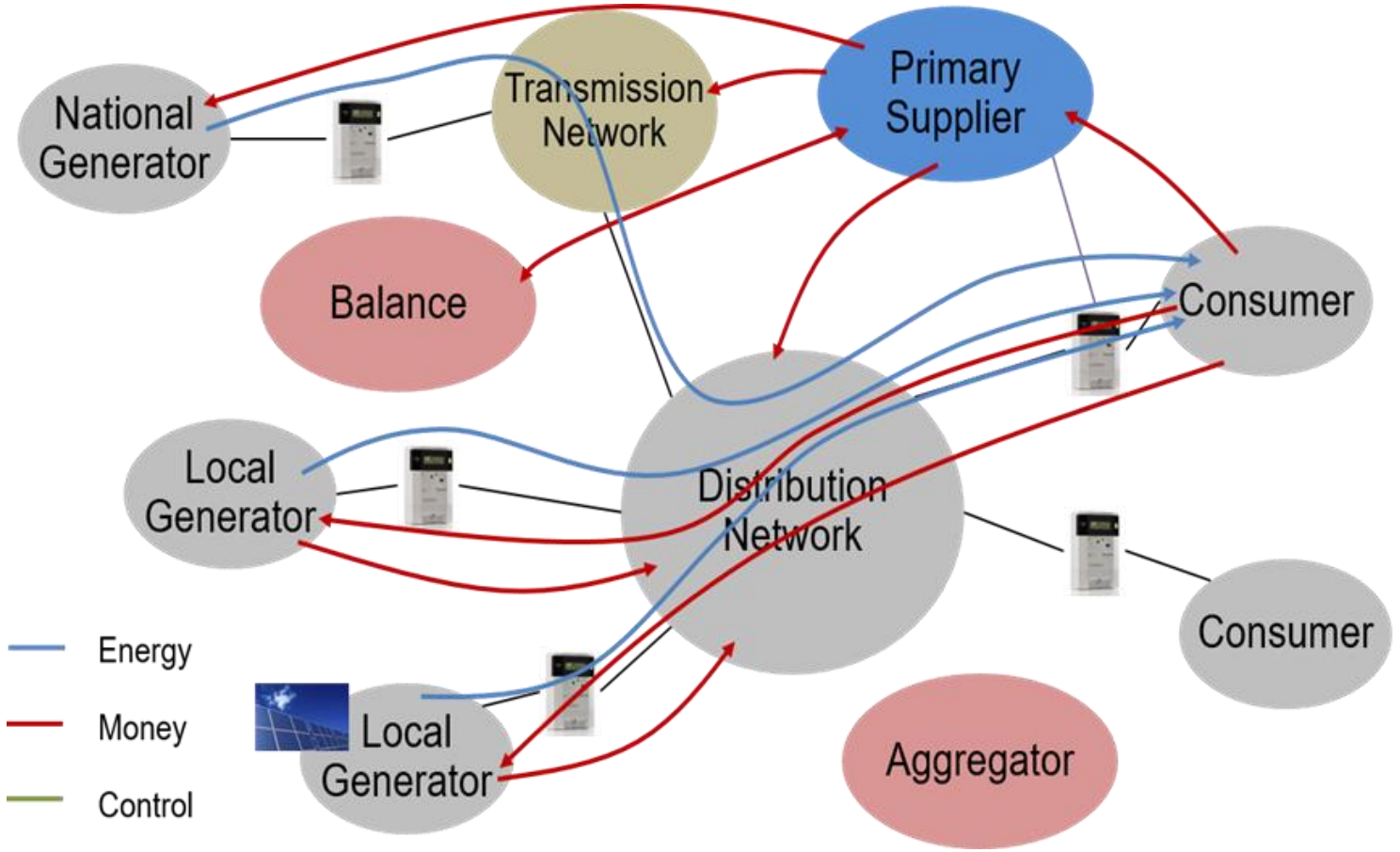
Future Energy Scenarios



Introduction and context

Strong Ambition

- Greater Manchester to decarbonise by 2038. ~60% of ENWL customers are in GM.
- Lancashire and Cumbria currently working to 2050 timescale, although this could change.

Need for Action

- Timescales are challenging. Decarbonisation pathways provide near to mid-term certainties on the future of energy. Long term future is less certain and more dependent on national policy decisions, particularly on heat, which have yet to be taken.
- Collaboration will continue and work will be repeated twice every price control.

Solid Foundation

- ENWL and Cadent have worked with Navigant to produce decarbonisation pathways for GM, Lancashire and Cumbria.
- Navigant developed the UK Pathways to Net Zero work for the ENA – using input from a range of stakeholders, including technology providers.
- This is based on the ‘balanced scenario’, which assumes a role for hydrogen and was the most cost efficient solution for consumers.

Role of grid companies

- This work informs our Distribution Future Electricity Scenarios (DFES) and RIIO-ED2 business plan, which represents £2bn investment in the region.

Comprehensive Pathway

- To create the pathway for Greater Manchester, Navigant spoke to a range of stakeholders, considered strategy documents including; GM’s Spatial Plan, 5 Year Environment Plan, low emission strategy, Local Industrial Strategy and GM’s Plan for Homes, Jobs and the Environment and adopted a bottom-up approach informed by local data.

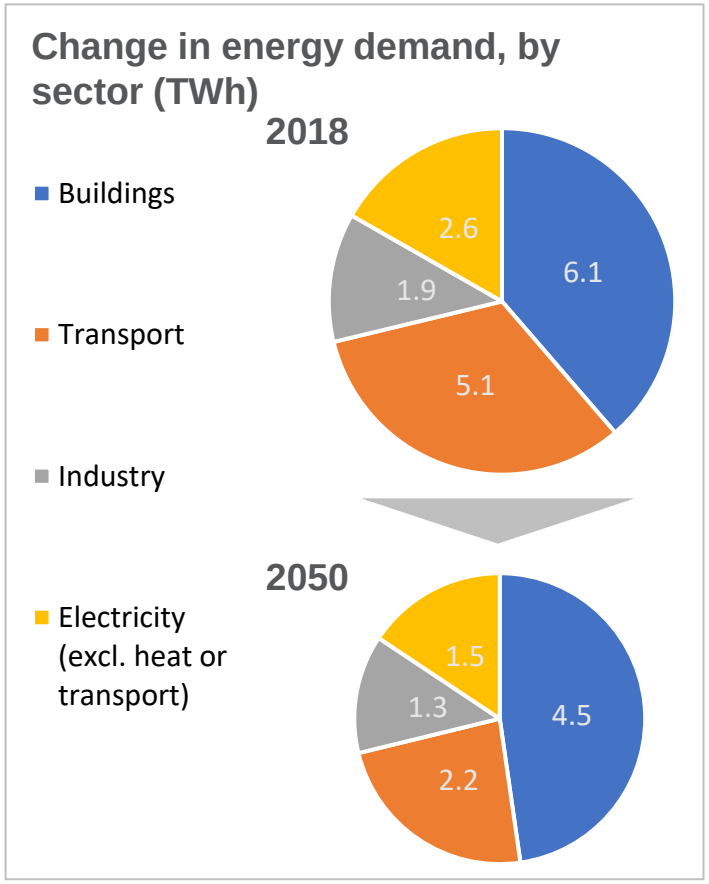
EVOLUTION OF ENERGY CONSUMPTION

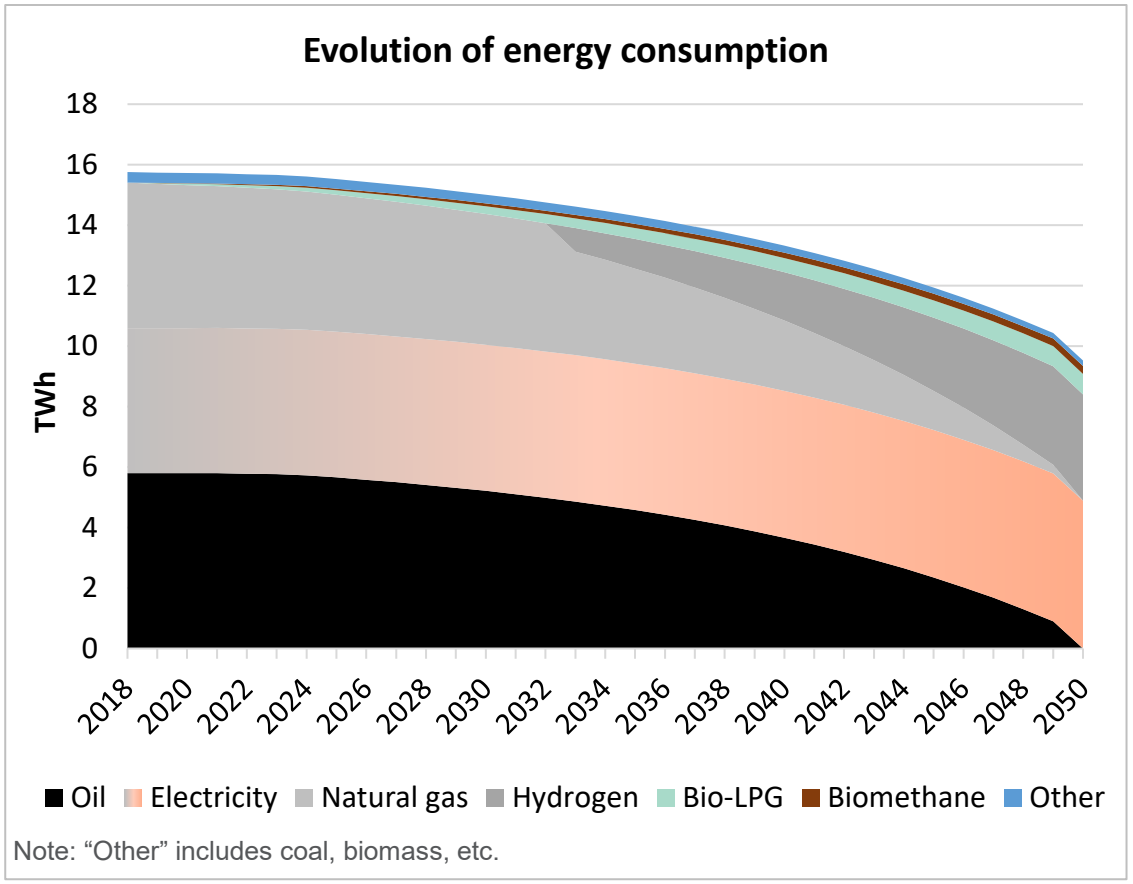
Cumbria's local energy system is expected to undergo a profound transformation as it is decarbonised by 2050. Total energy demand will fall from 15.5TWh to 9.5TWh in 2050 on the back of improved energy efficiency.

On the demand-side, the "buildings" segment will increase from 39% today to 47% of total demand in 2050, whilst the share of transport will fall from 33% currently to 23% of total demand in 2050.

The role of fossil fuels such as oil and natural gas will diminish completely as demand sectors are decarbonised. Instead, zero-carbon electricity will become key along with hydrogen which will become the dominant gas.

The lack of local blue hydrogen production capacity and the distance from other hydrogen-based industrial clusters suggests hydrogen supply to the region may materialise later than in other regions in the North of England.





Note: "Other" includes coal, biomass, etc.

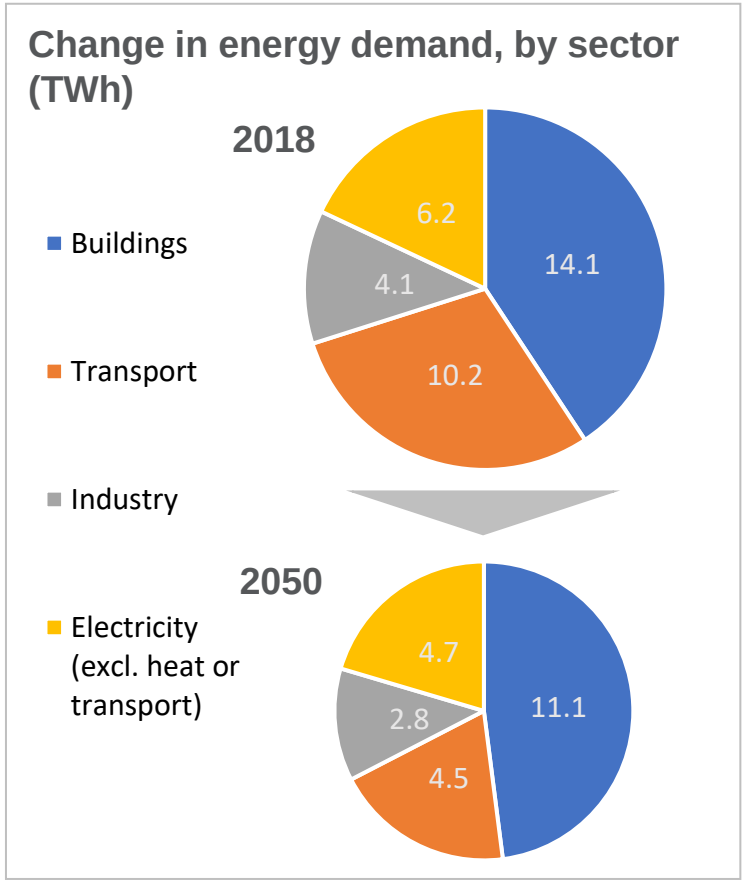
EVOLUTION OF ENERGY CONSUMPTION

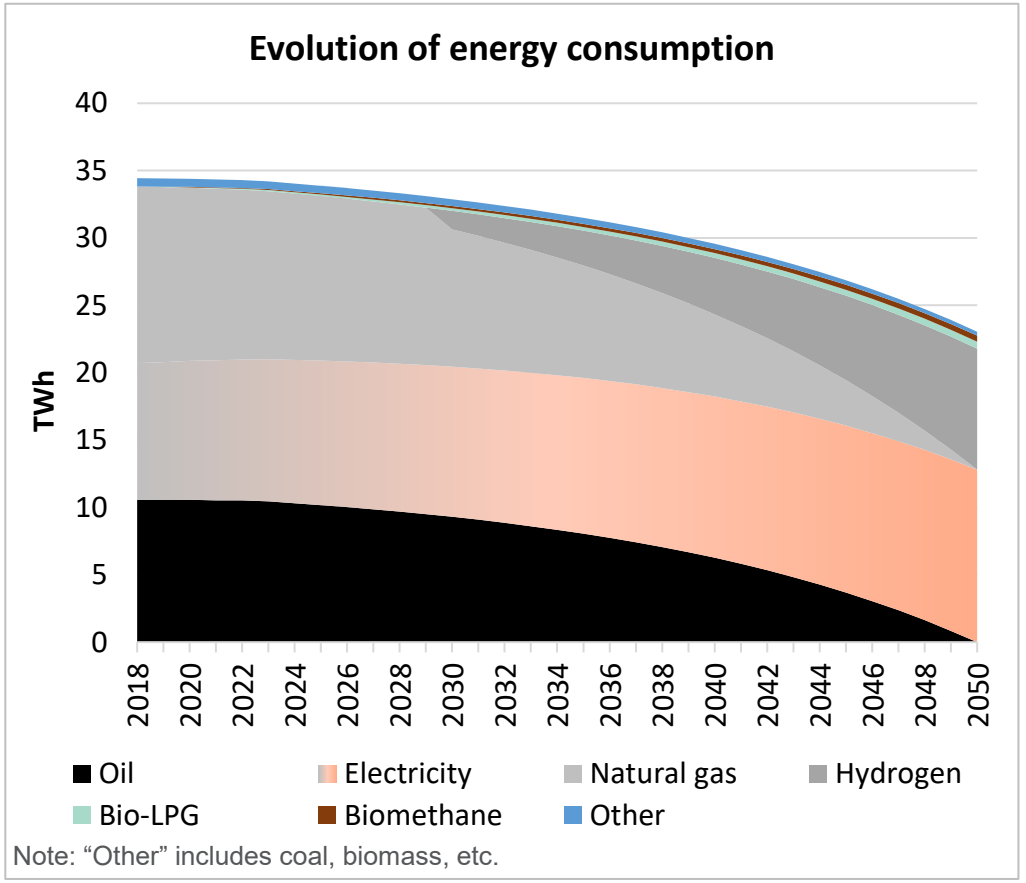
Lancashire's local energy system is expected to undergo a profound transformation as it is decarbonised by 2050. Total energy demand will fall from 34.5TWh to 22TWh in 2050 on the back of improved energy efficiency.

On the demand-side, the "buildings" segment will increase from 41% today to 51% of total demand in 2050, whilst the share of transport will fall from 30% currently to 21% of total demand in 2050.

The role of fossil fuels such as oil and natural gas will diminish completely as demand sectors are decarbonised by 2050. Instead, zero-carbon electricity will become key along with hydrogen which will become the dominant gas.

The lack of local blue hydrogen production capacity suggests hydrogen supply to the region may materialize later than in neighbouring Greater Manchester and Merseyside.





GREATER MANCHESTER DECARBONISATION PATHWAY TO 2038

Three tracks fuelled by **seven priority actions** for the Greater Manchester Combined Authority to start **transforming the energy demand and supply** now

Kickstarting the transition

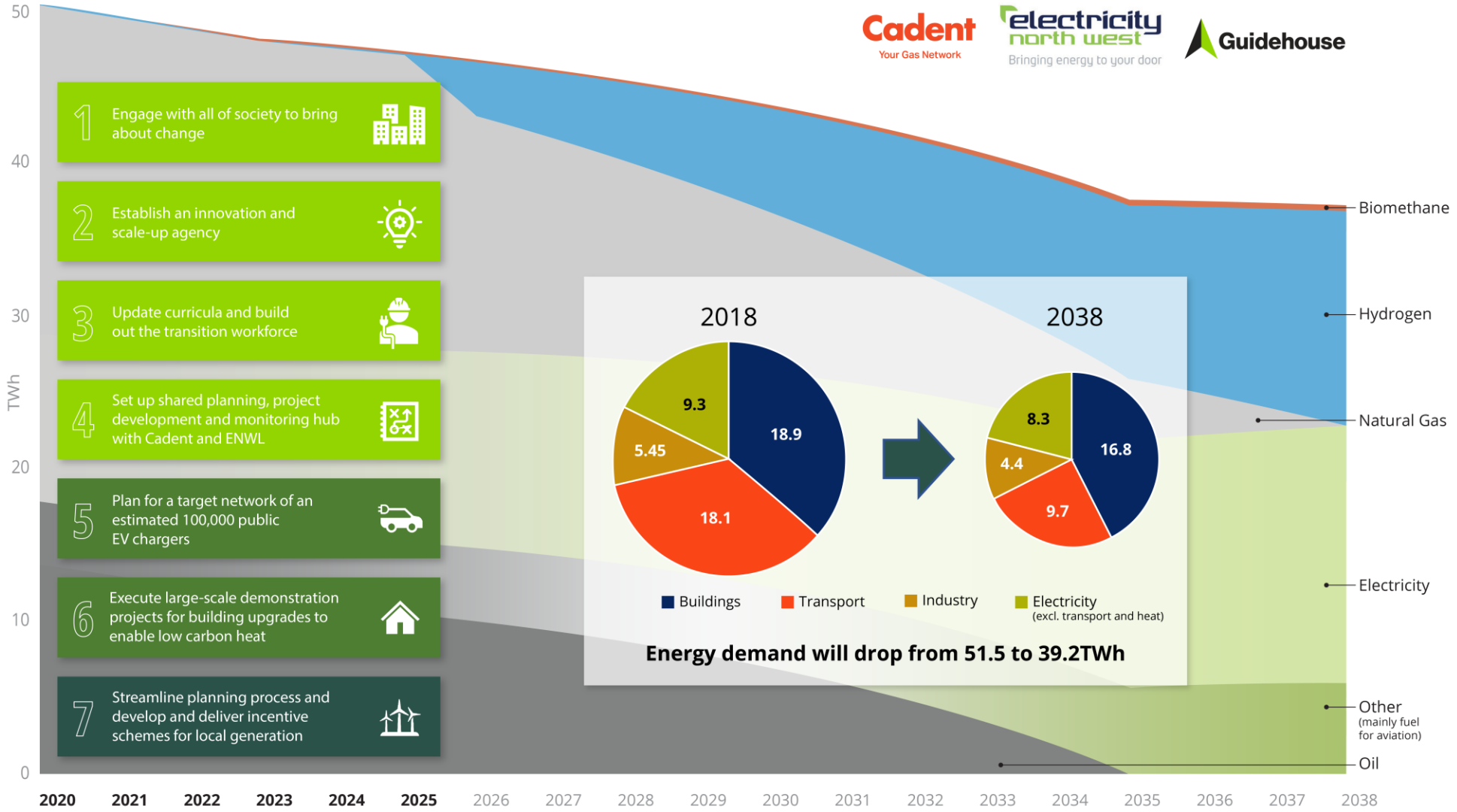
Create a shared sense of purpose, policy framework, detailed planning and upscaling abilities to fulfil the ambition.

Transforming the demand base

Decarbonise across all sectors by switching to hydrogen, green electricity and biofuels.

Securing low-carbon supply

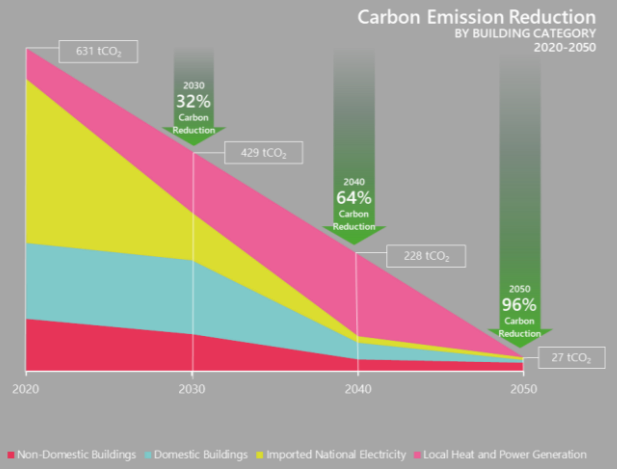
Meet low-carbon demand through more local generation and distribution of clean energy.



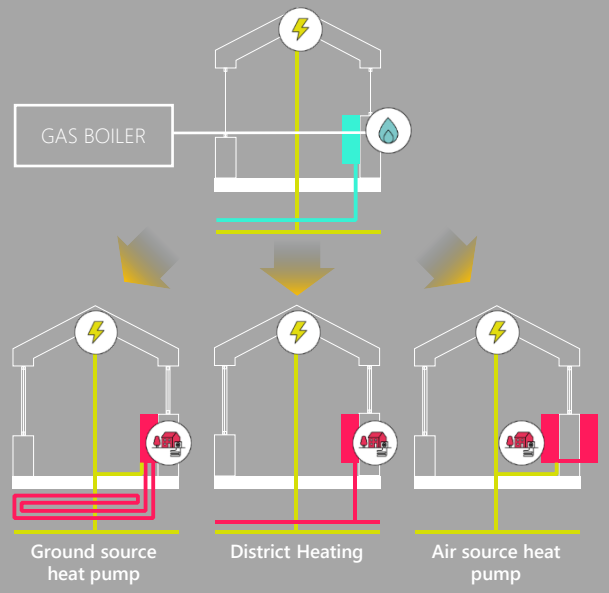
To develop a Local Area Energy Plan for each borough

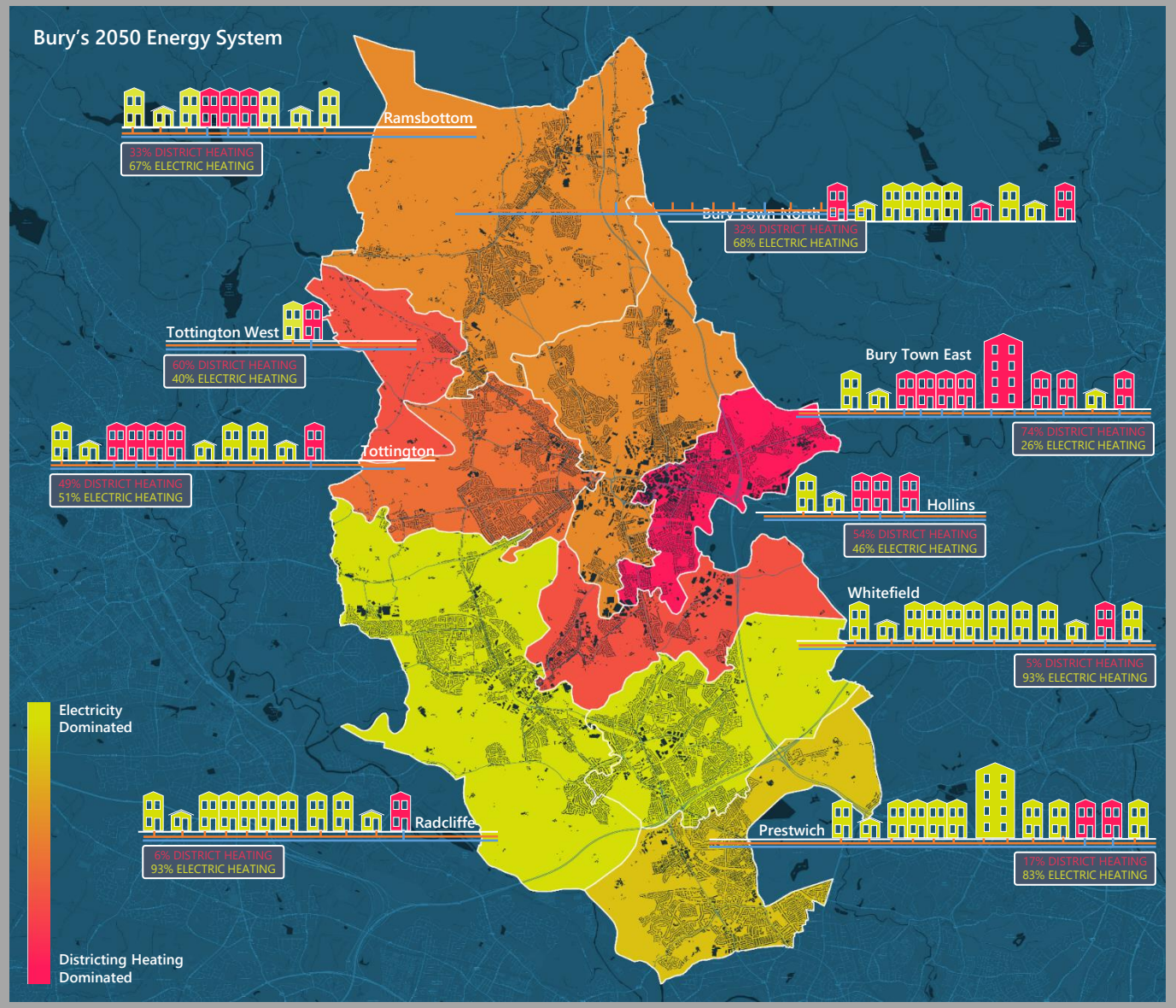
GREATER MANCHESTER
DOING THINGS DIFFERENTLY

Your local energy system is changing to meet our commitment to reducing carbon emissions. This means installing new low carbon technologies and phasing out the use of gas boilers.



Homes with gas boilers may transition to different heating systems, such as those illustrated below.





Future Energy Opportunities

Current unknowns

- Role and timing of hydrogen
- Phasing out of gas boilers
- Building regulations
- Ban on ICE vehicles

No Regret opportunities

- Increase electrification of heat
- Heat pumps
- PV and insulation
- EV’s and V2G