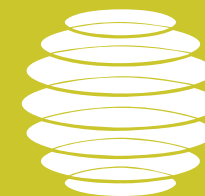


Liverpool City Region Pathway to Net Zero

Our ambition
to reach net
zero carbon



**LIVERPOOL
CITY REGION**
COMBINED AUTHORITY

METROMAYOR
LIVERPOOL CITY REGION

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Foreword

The Liverpool City Region has always been an outlier – a place that is bold, decisive, and never afraid to challenge the status quo.

It was these qualities that drove us to become the first region in the country to declare a climate emergency back in 2019 – a year in which the climate change debate was thrust into the public consciousness like never before.

And it is these qualities that have been the driving force behind our ambitious plans to become net zero carbon at least a decade before the government’s national targets.

That commitment was born out of a recognition that we have a moral duty to play our full part in the fight to save our planet – and that we must do everything possible to reduce our own carbon footprint.

The race to net zero won’t be easy or simple. It is fraught with challenges and hurdles – but there are also unrivalled opportunities along the way.

If trains, docks, and canals made us the gateway to the first industrial revolution – then our emerging strengths in wind, tidal and hydrogen can make us leaders in the green industrial revolution, creating tens of thousands of high-quality, high paying jobs for local people.

Make no mistake, this is our moment. At COP26 in Glasgow last November we demonstrated to the world how we are leading the way through innovative and significant industrial projects including Mersey Tidal, Glass Futures and Hynet.

Here in the Liverpool City Region, we have both the natural assets and the political determination to reach net zero by 2040. It is our time to develop the green technologies and clean industries of the future; to put ourselves at the head. And it is our chance to take local people on this incredible journey with us.



Steve Rotheram

Metro Mayor
Liverpool City Region

Steve Rotheram



Councillor David Baines

Leader of St Helens Borough Council
Portfolio Holder: Climate and Renewable Energy

David Baines



Our record of delivery

Under the leadership of Metro Mayor Steve Rotheram, the Liverpool City Region Combined Authority became the first in the country to formally declare a climate emergency and set the ambitious target for us to be carbon neutral by 2040 or sooner – at least a decade ahead of national targets. Since 2005, carbon emissions have dropped by 40% - but we still have a way to go.

Saving our planet is at the heart of our work and we are making good progress towards improving our environment, decarbonisation and better air quality. Our region's natural assets and technological capability mean that we are uniquely positioned to become the UK's Renewable Energy Coast and one of the leaders of the Green Industrial Revolution.



Good opportunities for active travel and public transport that gives people a genuine alternative to the car are key to tackling the climate emergency. The Mayor is working to deliver a London-style transport system that is quick, cheap, reliable and shaped around local people.

Decarbonising the transport network is at the heart of those plans. From our new £500m fleet of publicly owned trains, which produce up to 30% fewer emissions and have the potential to operate on battery power, to our newly ordered hydrogen buses, which could be on the road as soon as this year.

The city region recently secured £750m of transport funding that will be invested in improving green transport infrastructure, expanding the bus and rail network and building on the Mayor's plans for a 600km network of quality walking and cycling routes.



Plans are progressing to harness the power of the River Mersey as part of a Green Industrial Revolution to transform our reliance on fossil fuel energy to clean, renewable alternatives.

The Mersey Tidal Power Project has the potential to generate enough power for up to 1 million homes, create thousands of local jobs, and put our city region at the forefront of the Green Industrial Revolution – becoming a worldwide centre of excellence in a vital industry of the future.



A third of the region's carbon emissions come from our homes, but work is well underway to tackle that. We have already invested nearly £40m to retrofit more than 3600 homes starting with the most vulnerable households. The first tranche of homes is due to be complete by March 2022 and applications for funding have been submitted to expand the scheme further.

Retrofitting helps people warm their homes, improve insulation and energy efficiency, and cut fuel poverty by reducing fuel bills. It also offers local people a fantastic chance to tap into high quality, high value jobs and training opportunities that will only multiply as the scheme grows.

The Mayor's manifesto also commits to developing a 'Good Homes Standard' to ensure that any new housing is properly accessible and highly energy efficient.



Our record of delivery



HyNet, a pioneering carbon capture, usage and storage scheme, was one of only two pilot schemes recently selected by the government for further development. This innovative project will produce, store and distribute hydrogen as well as capturing and locking up carbon from industry whilst we transition to new, renewable energy sources.

When it is up and running in 2025, HyNet has the potential to reduce the North West's carbon emissions by 10m tonnes annually by 2030 – that's the equivalent of taking about 4m cars off the road. It will also create and protect tens of thousands of jobs across the region.

Alongside Glass Futures in St Helens, this project is key to reducing emissions from industry and helping us reach our ambitious climate targets.



In 2020, Mayor Rotheram launched the Community Environment Fund, which made a number of grants designed to empower and engage the region's residents to take action to improve the environment in their neighbourhoods.

Half a million pounds was invested in 58 grassroots projects, ranging from urban beekeeping, farming and wildflower schemes that taught children about the importance of biodiversity, to workshops on food waste and improving air quality.

The scheme proved so successful that a further £500,000 has been made available to bring the scheme back for 2022, while options are being explored to deliver a longer-term, self-sustaining scheme with private sector support moving forward.



Working together across all Local Authorities

All six Local Authorities in the Liverpool City Region have declared a Climate Emergency and all are taking targeted, local action on hundreds of different aspects of the climate challenge. From LED streetlights, energy efficient homes to zero carbon vehicles, sharing creative ideas and lessons learned is already helping the whole city region to make faster progress to achieve net zero carbon.



Halton Borough Council is leading the way in clean, renewable energy including solar panels, large scale air source heat pumps and biomass boilers that save thousands of tonnes of carbon every year. Halton is also leading on production of hydrogen for industrial sectors.



Sefton Council is leading on engagement with young people, led by the innovative Eco Centre, with dedicated teachers and specialist resources for climate education on topics such as air quality e.g. 'Clean Air Crew'. Sefton is also leading on embedding a climate and carbon assessment in the decision making process and mandating climate training for all staff.



Knowsley Council

Knowsley Council is leading the way on carbon reduction in offices and workplaces, showing what can be done even in non-traditional buildings to minimise energy use. Knowsley is also supporting action on climate resilience, including huge tree planting efforts and surface water management that also benefits biodiversity.



St Helens Borough Council is leading the way on challenging industrial transformations, including transitioning high-energy manufacturing to hydrogen fuels, and has ordered the UK first Hydrogen fuel cell waste vehicle. St Helens is also championing climate engagement, with a dedicated Climate Commission and Youth Climate Commission to support rapid action and have awarded £120k of carbon grants.



Liverpool City Council

Liverpool City Council is leading the way on the transformation of local energy systems through the introduction of shared heat network solutions, and the transformation of local transport systems road transport: increasing active travel options, segregated cycle routes and non-fossil fuelled buses, also championing innovation in urban green infrastructure solutions.



Wirral Council is leading the way on managing land for the benefit of wildlife, aiming to double their tree canopy cover. Wirral is spearheading an innovative, partnership model of climate action working closely with their community to set strategies, setting carbon budgets and integrating climate action into all Council policies.



What is net zero?

'Net Zero Carbon' means dramatically reducing the amount of carbon we emit and then physically removing any remaining emissions, effectively cancelling them out. So as a result, we don't add to the amount of carbon in our atmosphere.

We can move towards this goal of largely eliminating carbon emissions if we reduce our use of fossil fuels which have traditionally provided the energy for our journeys, neighbourhoods and workplaces. We also need to increase the ability of our natural

surroundings to flourish and absorb (remove) carbon. Carbon is emitted into the atmosphere when we burn fossil fuels like natural gas, petrol, diesel (and to a lesser extent, wood and other products).

Carbon isn't the only gas we need to be concerned about (methane from animal and food waste is very damaging too), but it is the largest source of emissions.

To reach our net zero carbon 2040 goal we need to halve the amount of energy that we use. This will mean we can generate the remaining energy we need from clean, renewable energy sources that don't produce any carbon emissions at all.



What is net zero?

The world is heating because of the 'greenhouse gases' we emit that trap the sun's energy and stop it escaping. The biggest source of greenhouse gas emissions is carbon dioxide ('carbon') which is why we talk about the need to become net zero carbon if we are to stop the heating process.

82%

of people in the Liverpool City Region (LCR) agree that we need to take urgent action to reduce carbon emissions



Climate change is the defining crisis of our time and it is happening even more quickly than we feared. But we are far from powerless. This is a race that we can win.”

- United Nations

Secretary-General António Guterres



Why do we need to do it?

As a city region, tackling the climate crisis will mean:

Globally, greenhouse gases are changing the climate, heating the planet.

We will see the effect of this in rising sea levels, heat stress and threats to food production. The impact of temperature rise by 1.5, 2 or 3 deg C will change our way of life; the higher the temperature, the more severe the impact will be. We have to act to limit the temperature change.

The Liverpool City Region recognised the urgent need to act in 2019, when we declared a climate emergency.

We now call on everyone to work with us to tackle this crisis with determination and resolve.

We have already emitted enough carbon into the atmosphere to start changing our global weather patterns. In Liverpool City Region we are more fortunate than many, because our temperate climate protects us from some of these global changes. But this doesn't mean that we won't experience difficult and sometimes dangerous changes that we need to start planning for now.





If working apart, we are a force powerful enough to destabilise our planet, surely, working together, we are powerful enough to save it.”

- Sir David Attenborough, COP26 November 2021



What will the impact of climate change in Liverpool City Region look like by 2040?

More unpredictable weather makes it harder to forecast. This will cause issues for agriculture, food producers and supply chains.

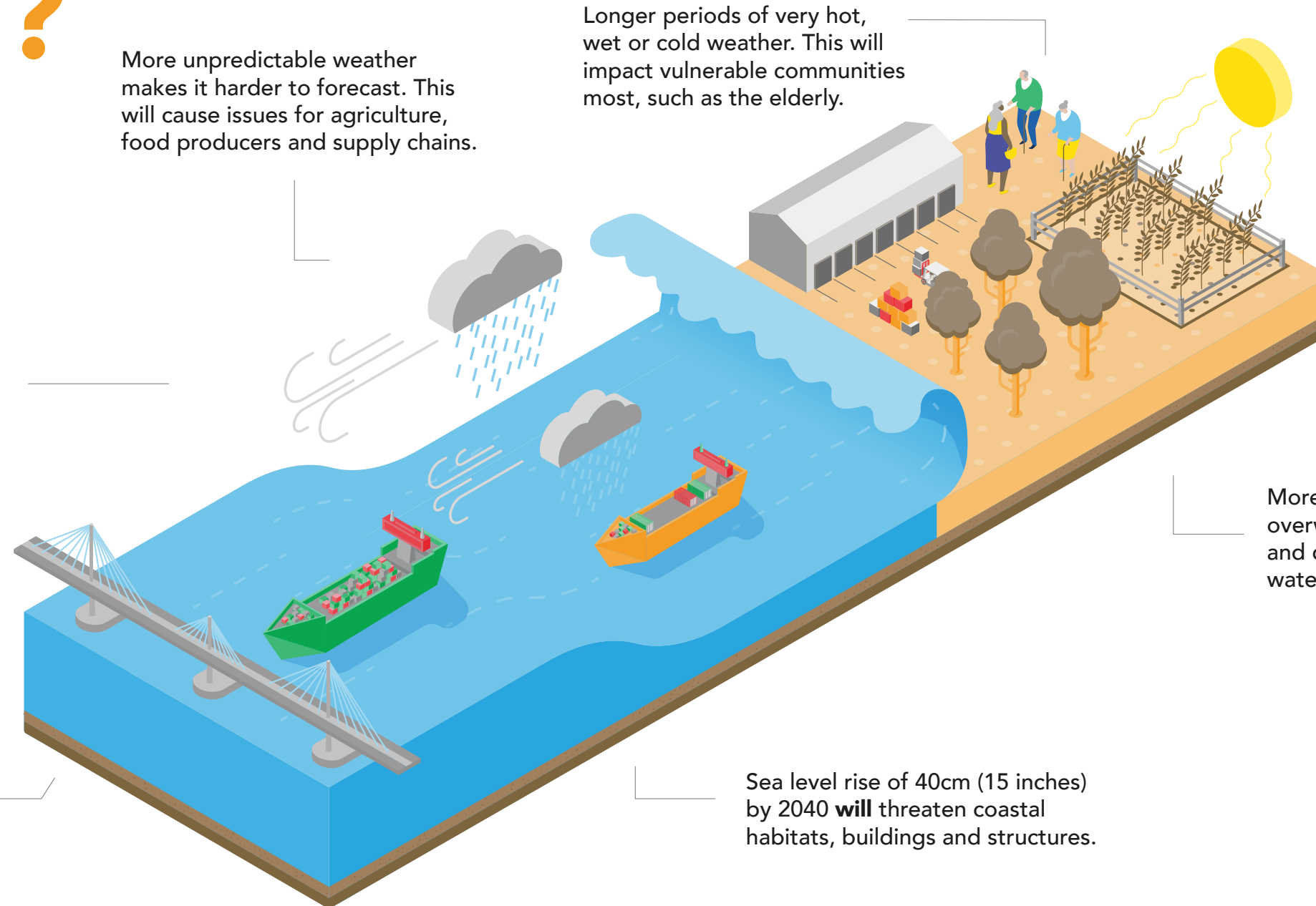
Longer periods of very hot, wet or cold weather. This will impact vulnerable communities most, such as the elderly.

At some times of the year, we may run short of water for drinking or irrigating food crops.

Increased wind speeds and stormy weather will cause high tides, storm damage and dangerous weather, threatening people's homes and businesses.

Increased difficulties connecting to global resources and supplies, including food and goods.

Drought, extreme weather and sea level rise may make some areas of the world uninhabitable, forcing people to move.



More frequent, heavy rainfall will overwhelm drainage systems and cause local flooding and water quality issues.

Sea level rise of 40cm (15 inches) by 2040 **will** threaten coastal habitats, buildings and structures.



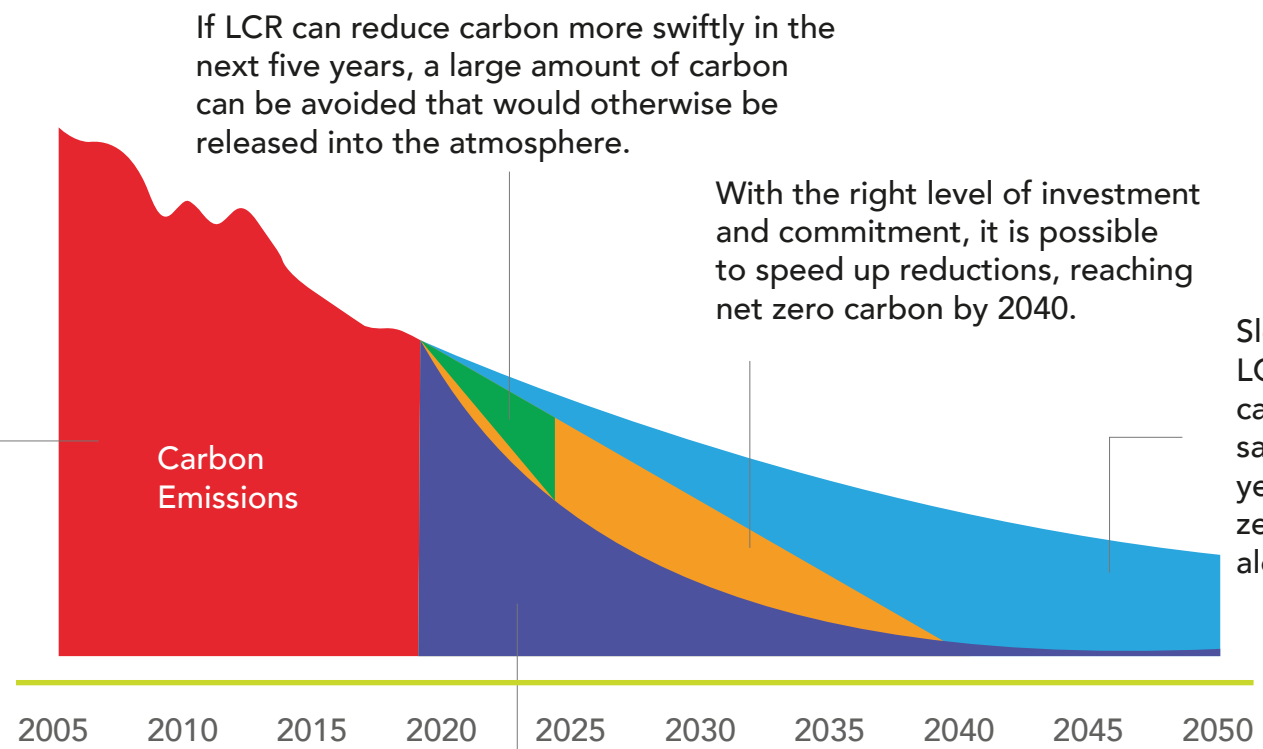
The climate crisis has already been solved. We already have all the facts and solutions. All we have to do is to wake up and change.”

- Greta Thunberg, TEDxStockholm,
December 2018

What does achieving a net zero target mean for the city region?

For net zero carbon to happen, we need to make significant changes to four areas of our shared lives; **our homes, our neighbourhoods, the journeys we make and our workplaces.** [Net Zero North West](#) estimate that Liverpool City Region needs around £45bn investment over the next 20 years to deliver the carbon reductions we need, securing jobs and growing new green skills.

Carbon emissions since 2005 have reduced by 40%. This is mainly due to the electricity grid using more renewable energy and much less coal, meaning all electricity is lower carbon now.



If LCR can reduce carbon more swiftly in the next five years, a large amount of carbon can be avoided that would otherwise be released into the atmosphere.

With the right level of investment and commitment, it is possible to speed up reductions, reaching net zero carbon by 2040.

Slow and Steady: If LCR continue to reduce carbon emissions at the same rate as the last 15 years, we won't reach net zero carbon by 2050, let alone 2040.

Scientific modelling has shown that if we want to play our part in keeping global temperatures under 1.5°C, we need to reduce carbon emissions faster to start with, so we emit less carbon in total over the next 20 years [[Tyndall Centre Manchester](#)].

What does achieving a net zero target mean for the city region?

51% of Liverpool City Region residents said that they had a good knowledge of what they need to do to take climate action.

Thinking about how to take on such big challenges can feel overwhelming. However, there are things we can do as individuals, communities and businesses that will see a positive impact on the climate crisis and get us closer to our net zero carbon goal.

Many organisations and groups over the last few years have looked at the potential ways we could reach net zero carbon. The UK **Climate Change Committee** has completed some of the most comprehensive and complex modelling. They have looked at hundreds of different scenarios, considering possible future technologies as well as those we already have.

When we apply these different scenarios to the Liverpool City Region, it shows that with the right resources, investment and the commitment of our communities, it is definitely possible to achieve net zero carbon by 2040 in the Liverpool City Region. We know that the longer we wait the greater the scale of challenge - which will ultimately cost more in both money and wellbeing for us all.



Thurstaston, Wirral Countryside, Merseyside

What are the benefits of achieving net zero to the city region?

By setting a net zero 2040 ambition we can:

Attract more 'clean' businesses that value a green economy to provide sustainable jobs in the City Region.

Lower risk of flooding and extreme weather.

Increase high quality green spaces, with room for animals, insects, birds and plants, as well as humans.

Double our use of trains, buses and other sustainable transport options.

Improve our air quality meaning better health for residents.

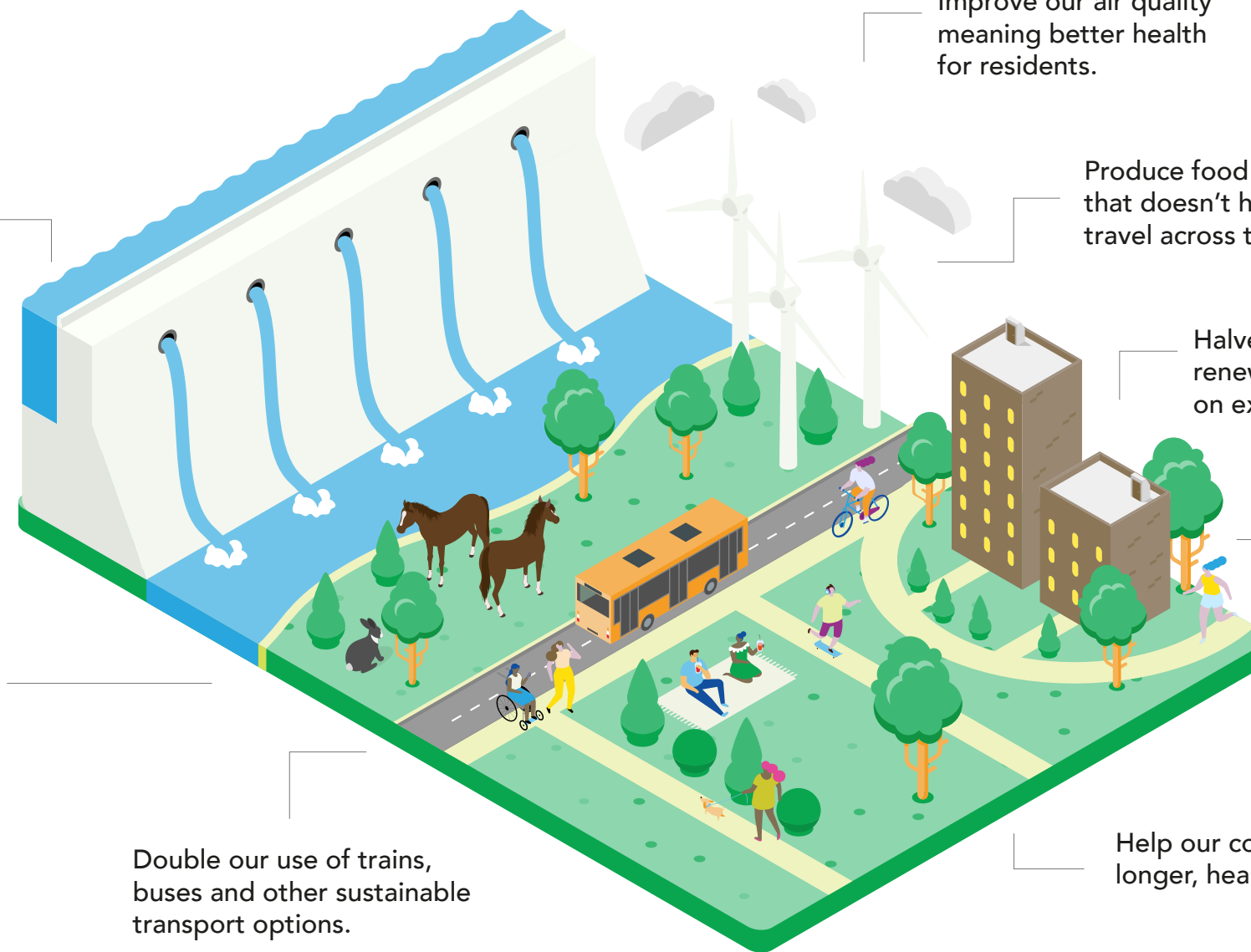
Produce food locally that doesn't have to travel across the world.

Halve energy consumption and increase local renewable energy, so we don't have to rely on expensive fossil fuels from elsewhere.

Make homes and businesses warmer, less draughty and cheaper to run.

Make our neighbourhoods greener, more attractive places to shop and spend time in.

Help our community to lead longer, healthier lives.



Ensuring a fair future for everyone

Whilst action to reduce climate impacts isn't new to us, the declaration of a climate emergency and our Year of the Environment in 2019 helped us to raise our level of ambition and our focus on achievement. Our first step in 2020 was to set up a Liverpool City Region Climate Partnership, who were instrumental in creating our [Year One Climate Action Plan](#) that we're currently acting on.

This is just the start

We want to keep the momentum we have created and continue to focus on measurable, short term actions that fit within a bigger, more ambitious scale of achievement.

Achieving net zero carbon by 2040 would be an immense achievement in itself - but this target isn't enough on its own. We want to create a future where we can live in warm homes, in clean neighbourhoods with access to high quality, nature-friendly green space. We want to grow our food locally and protect ourselves from flooding and extreme weather. We want to be able to travel safely and conveniently and to have access to long term, sustainable jobs.

So our pathway is about more than net zero carbon – it's about creating the kind of future we want, that works for all of us. Our Year One Climate Action Plan focuses on all of the intertwined elements that need to work together to make our 2040 goal a reality.



Ensuring a fair future for everyone

The government plans to make the UK net zero carbon by 2050. In the Liverpool City Region, we want to be far more ambitious and have developed a plan to achieve net zero carbon by 2040 at the latest.

We need action at every different scale to achieve our goal - from individuals making the right choices at home and community groups working at a neighbourhood level right up to nationally important projects like [Hynet](#) and the [Mersey Tidal project](#). Helping our industries and businesses to move to clean fuels helps them to secure their future in our city region, protecting jobs and our economic prosperity.



Why clean energy is vital

The current mix of energy used in Liverpool City Region is dominated by fossil fuels, with around 75% coming from natural gas, petrol, diesel, heating oil and other fossil fuel based energy supplies. This cannot continue.

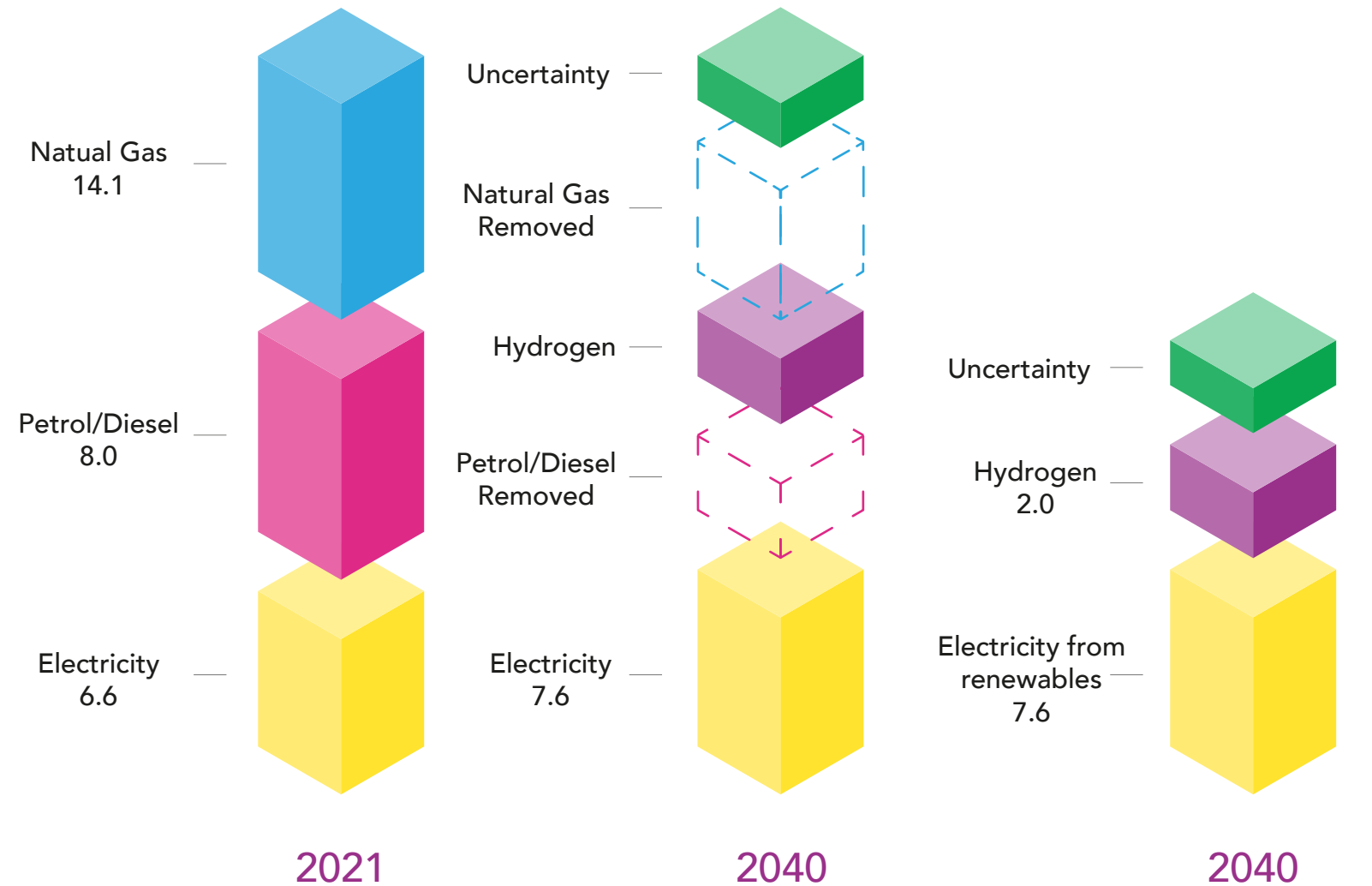
We need to end our reliance on non-renewable energy and transition instead to much cleaner sources like wind, solar, tidal and those can be naturally replenished. Changing the fuels that power our homes, lives and our economy is the key to saving our planet.

Our future clean energy supplies will include low carbon electricity and hydrogen, as a replacement for natural gas, petrol, diesel and other fuels. Electricity use will increase, as we remove other fuels, and hydrogen will be introduced for specific energy intensive uses. There will be a need to change the way our supply systems work and to introduce new equipment and connections.

By 2040, most people will use electricity for car journeys, heating and cooking as well as power. Clean hydrogen will be produced locally to supply industry and larger vehicles, where electricity is not the best answer.

The Combined Authority and the Government will play a major role to help deliver clean energy systems and this has already started, but communities and individuals must act too. By using renewable electricity through energy suppliers and moving away from fossil gases, you can have a tangible impact on the net zero carbon goal as well. Reducing your energy use means that renewable energy supplies go further, so we have set a target to halve our energy use by 2040.

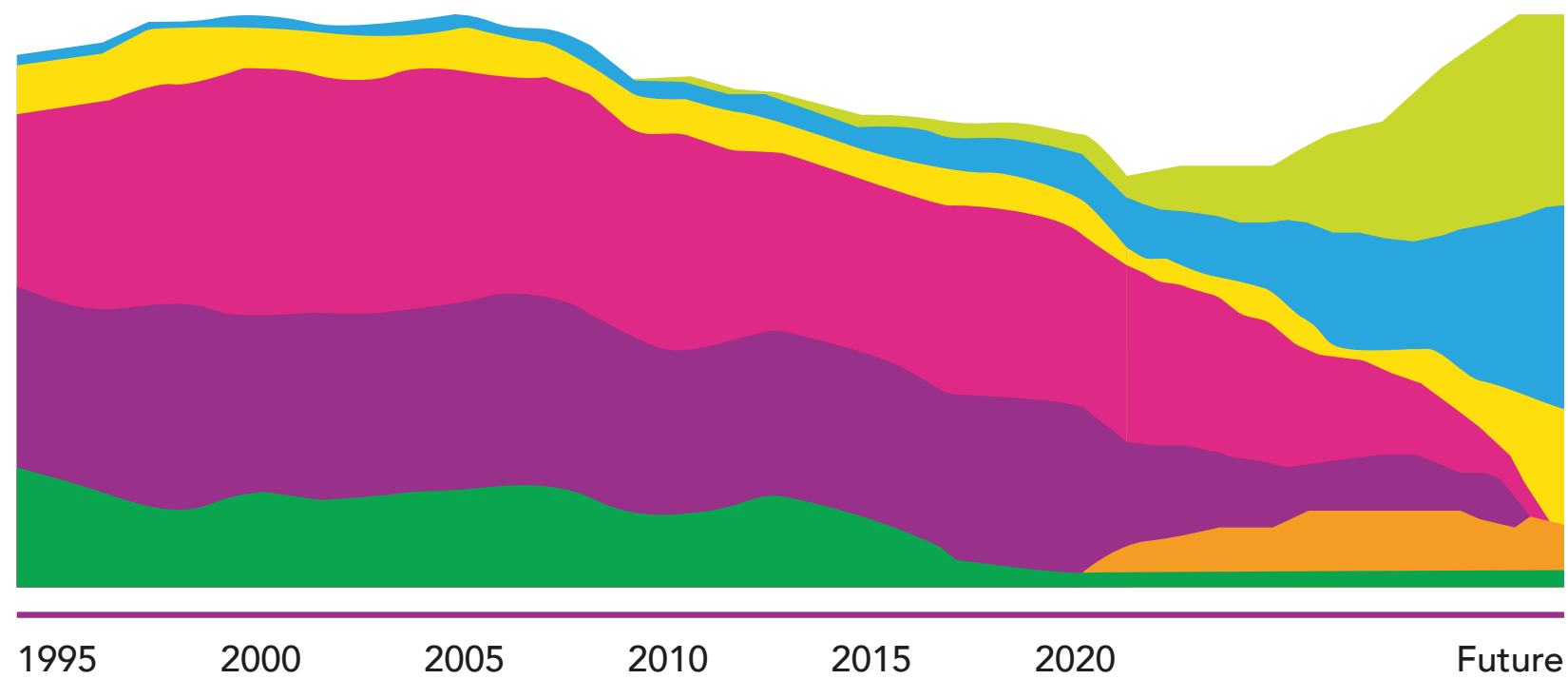
By 2035 we expect the electricity supply to be virtually zero carbon.



Energy figures in tera-watt hours (1 tera-watt = 1 billion kWh units)

Why clean energy is vital

Demand and forecast for energy in the UK, 1995 - 2040



- Wind, solar, hydro, tidal, other renewable
- Bioenergy & Waste
- Nuclear
- Natural Gas
- Petroleum
- Coal
- Imported Electricity

Coal used to be a huge part of our UK energy mix, but has virtually disappeared in an incredibly short time. Over the next 20 years, it's likely that the same will happen to petrol, diesel, oil and natural gas

Our Renewable Energy Coast already has 11 offshore wind farms and another four already in development, more than doubling current output.



Why clean energy is vital

To achieve a clean energy supply by 2040, we will need to:



Halve energy consumption in all our buildings and in transport, so that the clean energy we generate isn't wasted.



Increase energy efficiency across homes, businesses, industry and transport – insulation, smart controls and behaviour change will be needed.



Upgrade energy supply systems to make sure that we have the electrical and hydrogen power when and where we need it.



Ensure that the energy supply needed to keep people safe, warm and prosperous is available affordably.

To achieve this we will need to:

Continue to lobby government to secure policy and funding for delivery.

Work closely with people, energy producers and utility companies.

Support people in fuel poverty or those who are vulnerable to make the changes.

Support, promote and lobby for investment in renewable energy generation and supply in our city region.



To achieve net zero energy in the
Liverpool City Region will require
investment of:

£15bn



Home

Our homes play an integral role in achieving net zero carbon. There are two key areas to understand; **what things look like now and how we're going to tackle these challenges.**



Home

The overall investment required to achieve net zero in homes is £12bn.

Liverpool City Region secured nearly £40m to retrofit more than 3600 of the least energy efficient homes across the city region by March 2023.

Poorly insulated homes disproportionately affect poorer and more vulnerable communities, so it is vital that we target the resource where we need it most.

What things look like now



There are currently 720,000 houses in LCR. There are likely to be 90,000 more homes by 2040.



To achieve net zero carbon, we need to reduce energy use in homes by 60%.



61% of houses in LCR are EPC (Energy Performance Certificates) band D and below. We should be aiming much higher, to make homes as energy efficient as possible.

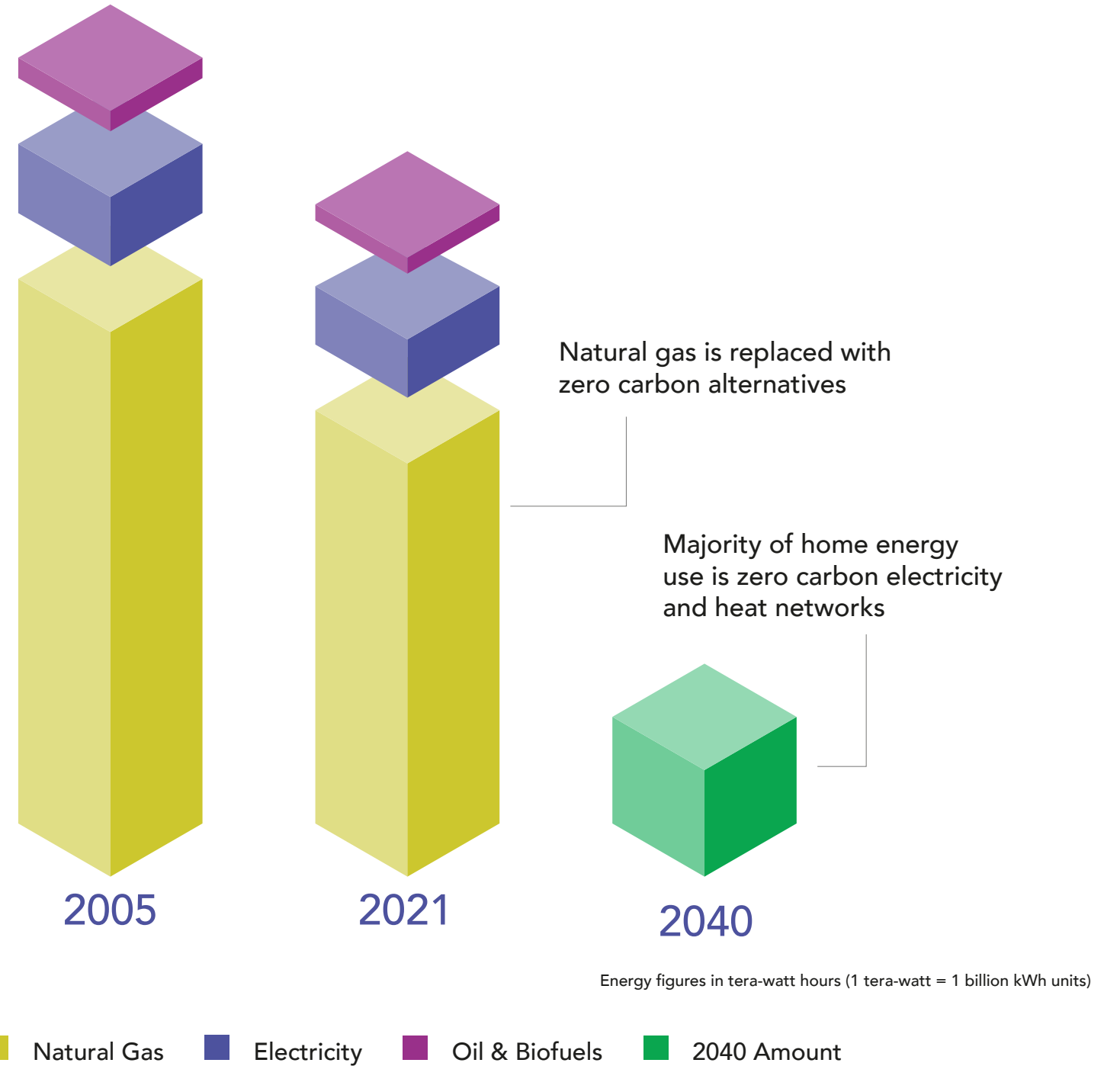


Carbon from home electricity use is dropping fast. Our biggest challenge is gas use for heating and hot water.



We need to reduce other 'domestic' emissions, such as household waste and food related emissions.

Energy use in housing



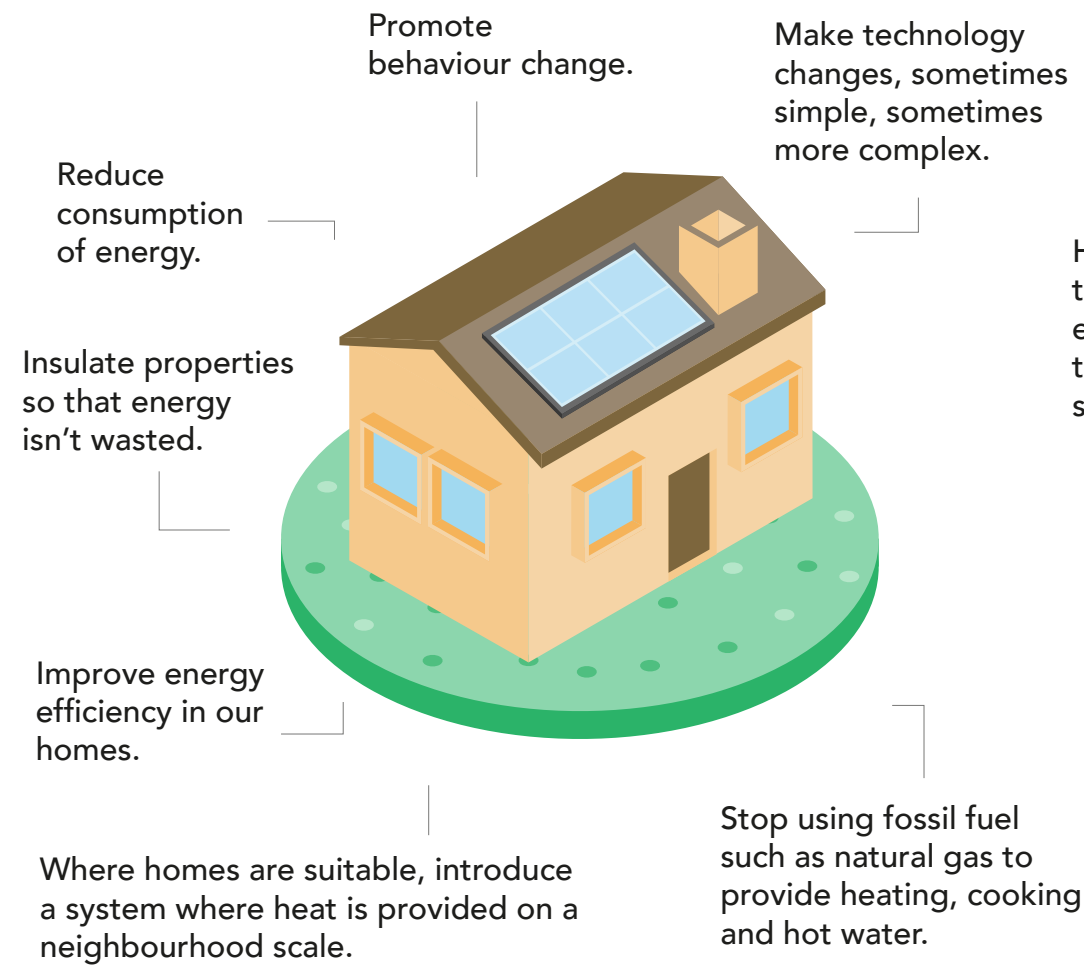
Home

How we're going to tackle these challenges

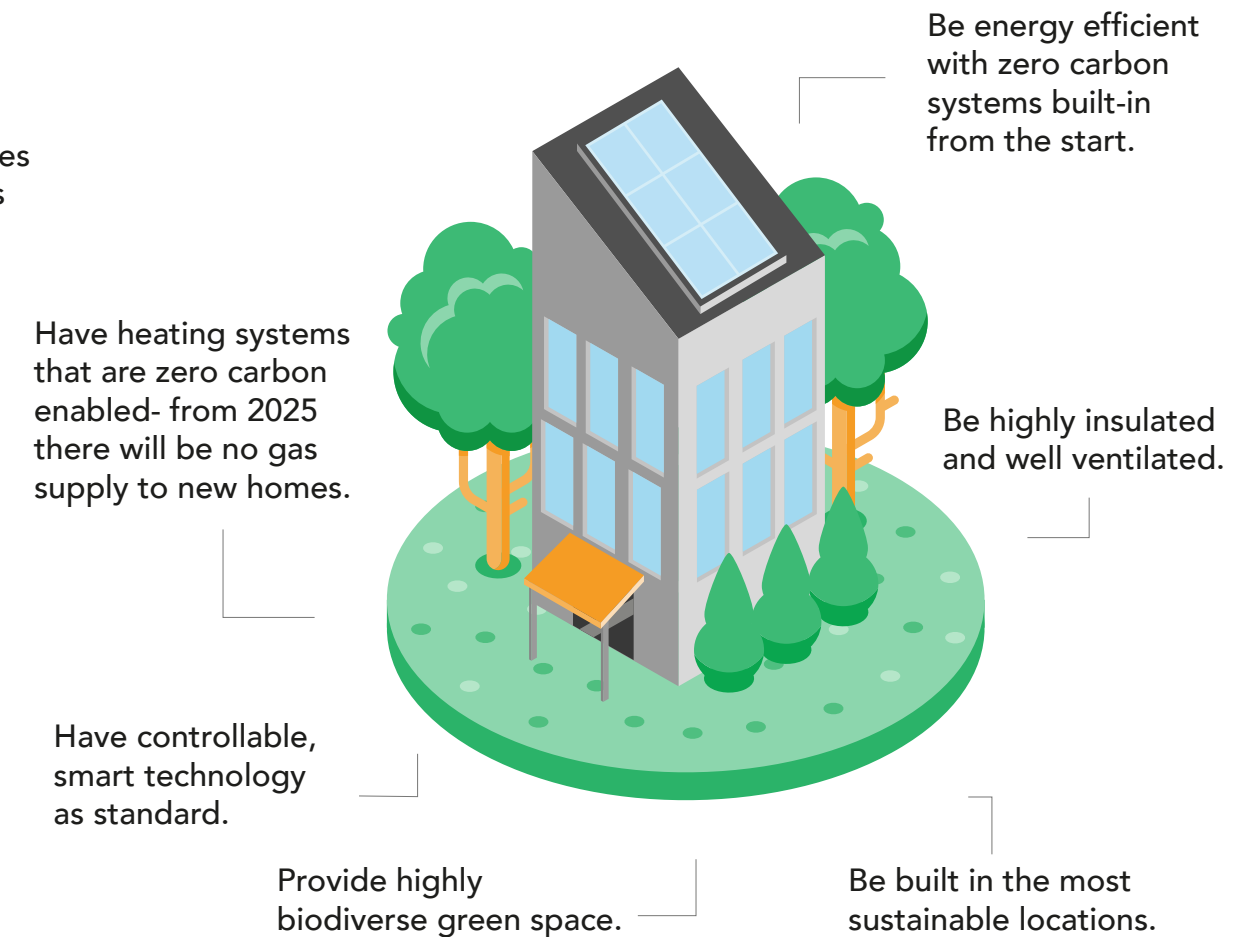
Overall we will need to:



Existing homes will need to:



New homes will need to:



Neighbourhoods

Our neighbourhoods play a crucial role in achieving our net zero carbon future. Neighbourhoods have a huge number of ingredients that all fit together to make them a great place to live and work. In the future we will need our neighbourhoods to work harder than ever to deliver the climate benefits we want to see.



Neighbourhoods

Our neighbourhoods provide space for:



Food growing - by individuals as well as farming and agricultural businesses



Sports, leisure and exercise



Getting around - streets, paths and squares



Community activities including socialising and learning



Water flows, including water courses, lakes, wetlands and our coast



Biodiversity including animals, insects, birds and plant habitats



More local energy generation such as wind turbines, solar panels and district heating where possible.



Carbon storage including woodlands, saltmarsh and other carbon storing environments

All of these different environmental services interact - our green spaces are a biodiverse habitat but they also lock up carbon in the trees and protect us from flooding and air pollution, as well as providing a lovely place to walk and play.

The climate crisis is also an ecological emergency - across the planet, species are going extinct at an accelerating rate and their habitats are being damaged or destroyed.

The UK is one of the world's most nature-depleted countries - in the bottom 10% globally and last among the G7 group of nations.

We know it's important to people that we protect and create more green and blue spaces that people value, especially in areas where people don't have gardens or yards.

That's why we created the Community Environment Fund, which worked to develop and enhance climate literacy at a grass roots level and had a real, demonstrable impact across the City Region.



Neighbourhoods

What our neighbourhoods look like now

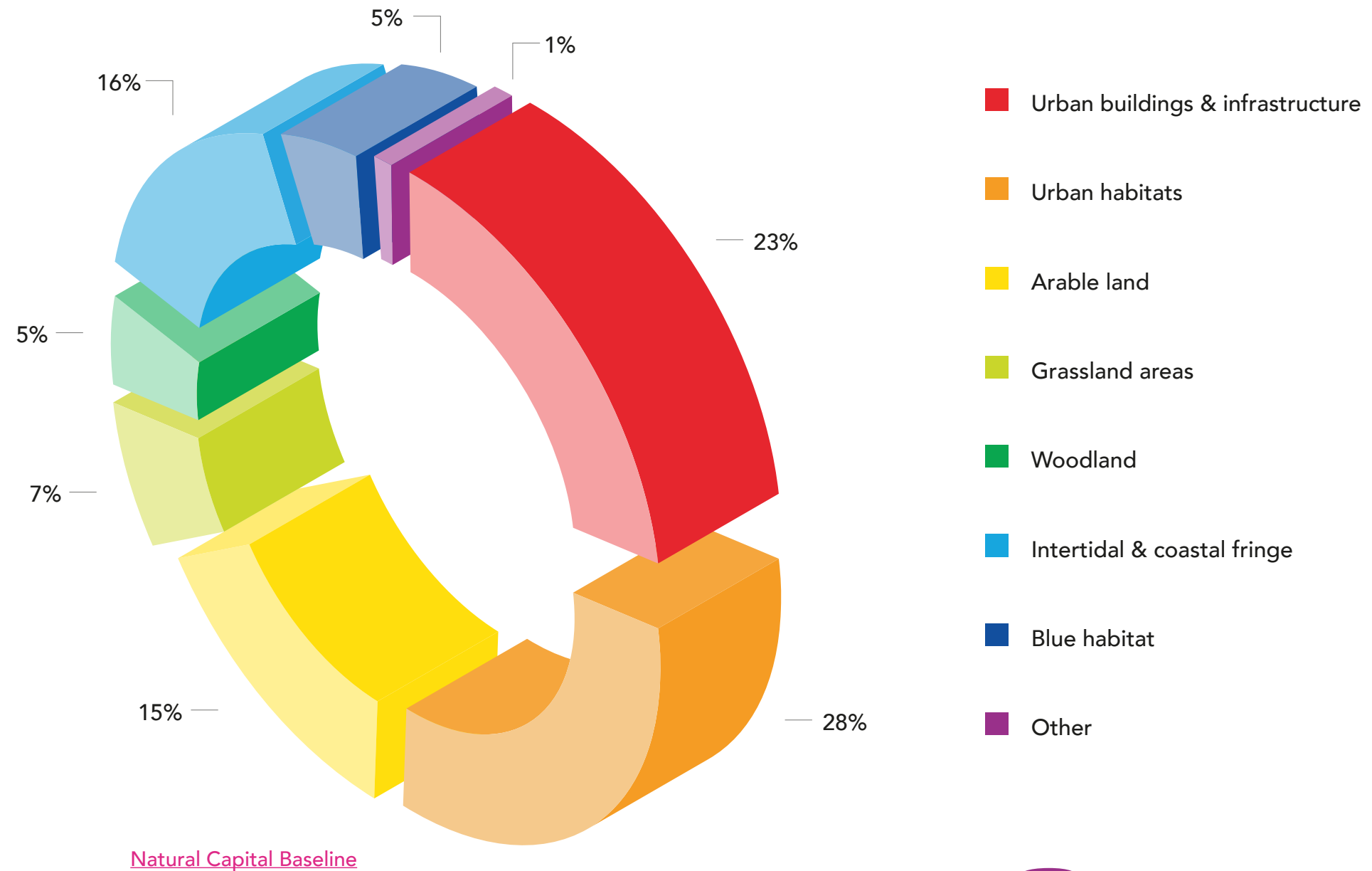
About a quarter of the area of Liverpool City Region is built-up - buildings, streets and hard landscape.

Another quarter is urban habitats like parks and playing fields.

The other half is filled with a range of habitats including farmland, grassland, woodland, water environments and the coastal areas.

Whilst a lot of our land area is green, this isn't well spread around the city region. Some of our built up areas don't have good access to high quality green space and we need to improve that. In addition, even existing green space can be improved, to support more plants and wildlife and to connect habitats together.

Every year, LCR sequesters (stores away) nearly 33,000 tonnes of carbon, mostly in our woodlands and saltmarshes. We need to double that amount by creating more carbon-storing environments. This will help us soak up any leftover carbon emissions that we can't reduce by 2040.



Neighbourhoods

How we're going to tackle these challenges

UK policy is still changing in this area of work, but the Government has committed to planting large areas of woodland in the UK, changing policies for agriculture and the natural environment to reduce emissions, promote biodiversity and provide more locally grown food.

We are also expecting to see changes to pollution regulations for air and water, and more support for sustainable waste management such as food waste. All of this will help us to deliver the future we want to see, and make the most of the places we live and work.

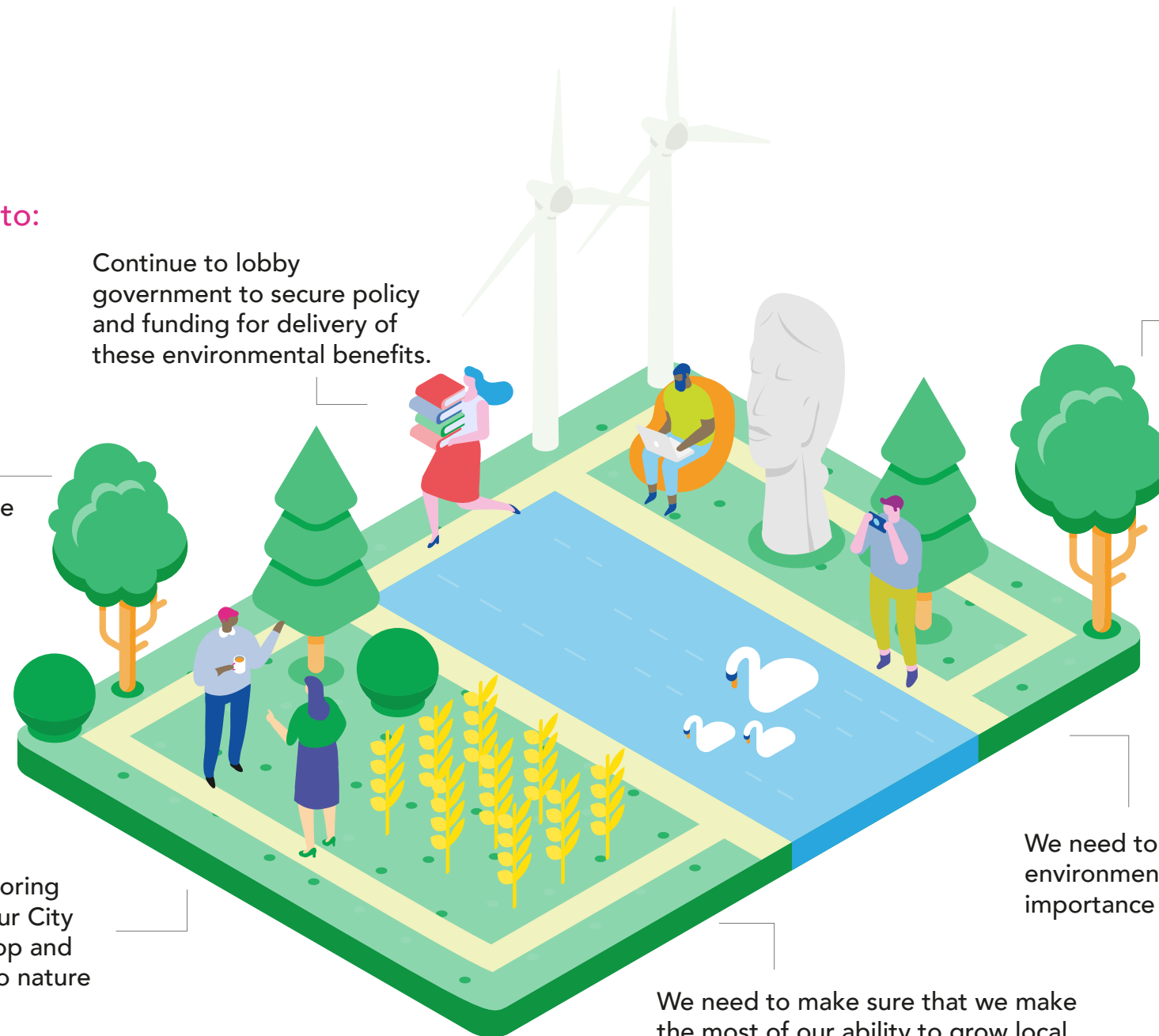
The Liverpool City Region will use its spatial planning powers to promote a climate resilient City Region by promoting blue and green infrastructure and the right development in the right 'sustainable' place.

Overall we will need to:

Make space for green and blue environments right across the City Region, so that everyone can benefit no matter where they live.

Set priorities for restoring biodiversity across our City Region, aiming to stop and reverse the threats to nature in our area.

Continue to lobby government to secure policy and funding for delivery of these environmental benefits.



Improve the way we manage existing greenspace and farmland, so that it locks away more carbon every year. To do this, we need to support farmers and people who manage the land, including our communities, with the skills and knowledge to do this effectively.

We need to help people to connect with natural environments so that everyone understands their importance to our future prosperity.

We need to make sure that we make the most of our ability to grow local food, choose sustainable, low carbon foods, support our growers and avoid food waste.

Neighbourhoods

140,000 tonnes of food is wasted in the Liverpool City Region each year. We need to change our food buying habits to reduce this waste to zero, with more plant-based options. This would reduce greenhouse gas emissions and save people money.

Can we afford to set aside space for nature and biodiverse habitats?

The **economics of biodiversity** are very clear: our economies are embedded within Nature, not external to it. If we fail to protect nature, we can't protect our economic prosperity.

We need to think carefully about how we want to use our neighbourhoods in the Liverpool City Region, how much land we want to use for biodiversity, leisure, growing food, producing energy, buildings and roads.

In 2021, 58 Community Environment Fund projects were delivered, directly benefiting local people across the city region.

Further funding has been secured for 2022 to deliver more grassroots projects to communities.



Journeys

How we travel for work and leisure plays an integral role in achieving net zero carbon. There are two key areas to understand; **what things look like now and how we're going to tackle these challenges.**



Journeys

What things look like now



Government strategy and policy is developing fast on transport carbon emissions. From 2030 sales of new petrol and diesel cars and vans will be banned, and from 2035 all new cars and vans will need to be fully zero emissions at the tailpipe (not hybrid). Liverpool City Region are starting to develop a new Local Transport Plan which will be published in the next few years.

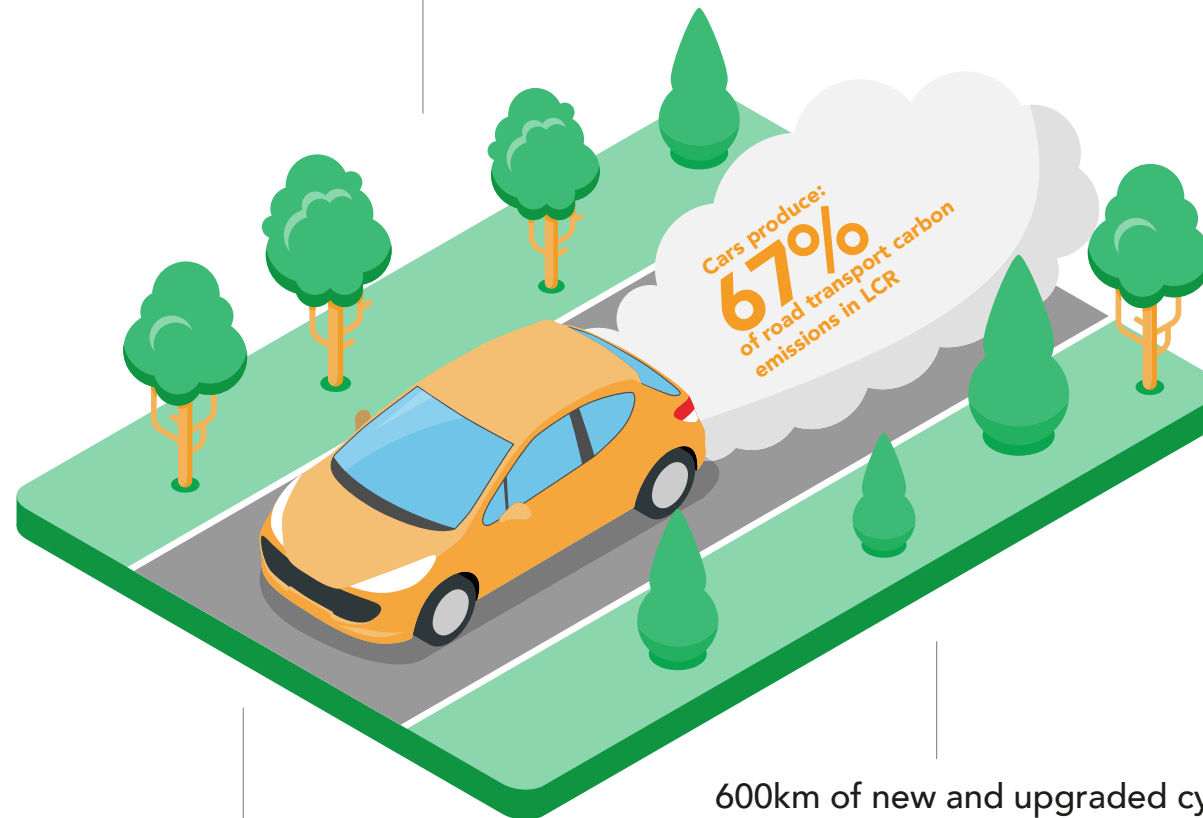


Good public transport is the backbone of any modern - and green - city region. But for too many people, our transport network does not currently work for them. Mayor Steve Rotheram has made it a major priority to improve our region's transport network so that it offers a genuine alternative to the car.



Some people will still need to drive a car, either privately owned or part of a car-hire club. All these cars will need to be fuelled by electricity, with suitable places available to charge them.

2/3 of all LCR journeys are less than three miles. Half of these journeys are made by car.



600km of new and upgraded cycle and walking routes in Liverpool City Region will be delivered in the next few years.

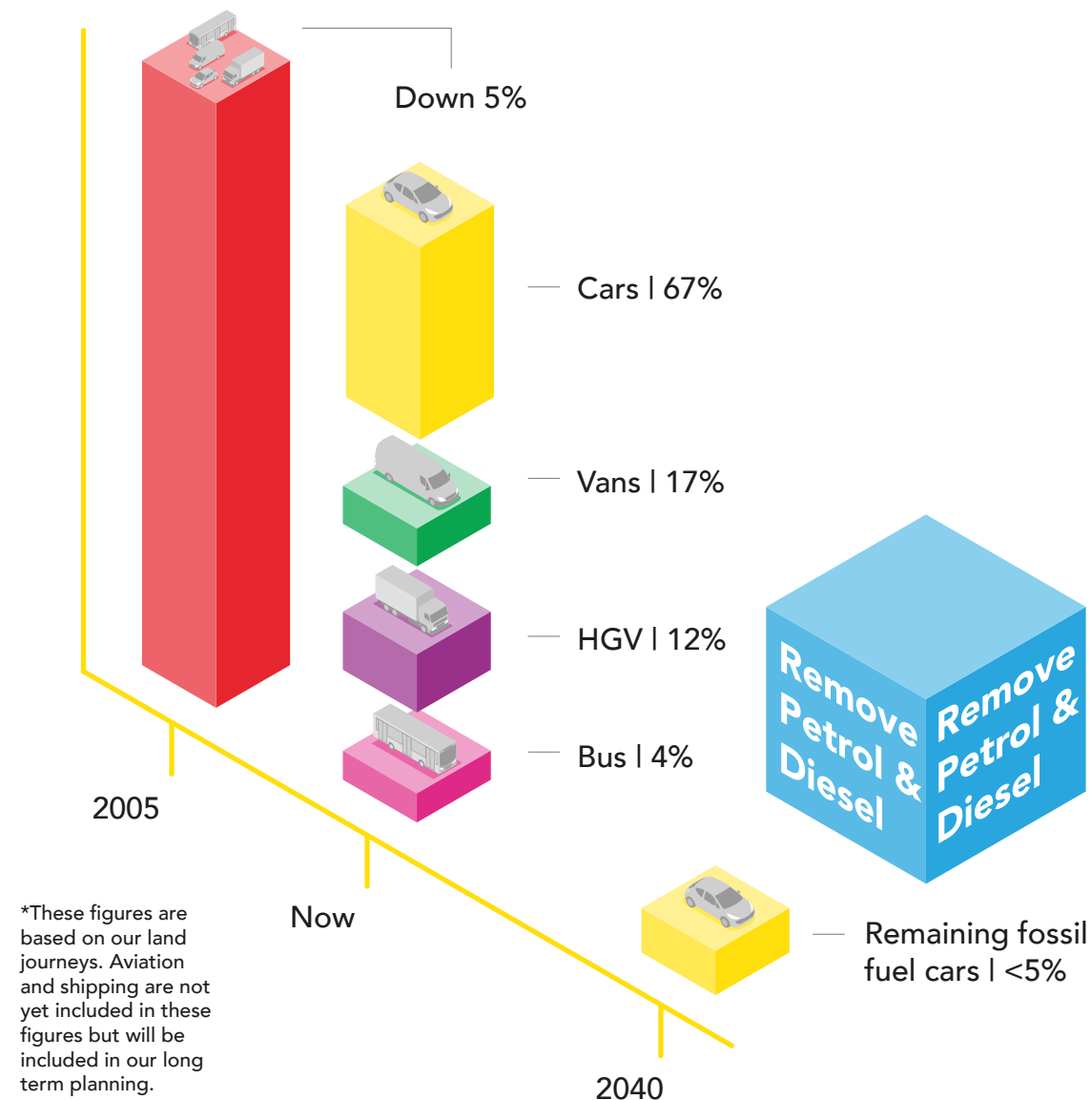
We have invested nearly £500m in a new fleet of green, modern, accessible trains for the Merseyrail network, and are rolling out high tech hydrogen buses from this year.

70% of people support creation of segregated cycle routes.



Journeys

LCR journeys in the past, present and future.



We want to build a London-style transport system that is quicker, cheaper and more reliable. Work is well under way to make that happen.

Liverpool City Region have secured £750m to transform public transport and active travel.



Journeys

How we're going to tackle these challenges

Overall we're going to:

Continue to lobby government to secure policy and funding for delivery.

Prioritise walking and cycling rather than motorised vehicles across the whole city region.

Develop a London-style transport system, that integrates buses, trains and ferries and combines them with a comprehensive cycling and walking network.



Work to make public transport zero carbon, as well as convenient, fast, safe and cheaper.

Support people who will struggle to afford the change and those who are vulnerable.

People will need to:

Choose walking and cycling for more journeys, particularly short trips.

Reduce the number of journeys and choose remote working where possible.



Choose public transport for more journeys.

Swap their car or van (if they still need to own one) to an electric vehicle, charged at home or in a local car charging hub.

Enable homes to make working from home easier, such as digital connectivity.

Move to flexible working to help people to travel less.

Businesses and employers will need to:

Travel using public transport, if possible.

Ensure that all company vehicles are zero carbon when they are replaced.



Make it easy for employees to walk and cycle.

Install electric vehicle charging at workplace car parks or support local car charging hubs.

Workplaces

How we interact with our work environments plays an integral role in achieving net zero carbon. There are two key areas to understand; **what things look like now and how we're going to tackle these challenges.**



Workplaces

The overall investment required to achieve net zero for workplaces is £5 - 10bn.

What things look like now



Some areas of the LCR have high industrial energy use from manufacturing and suppliers, whereas others have relatively little.



The biggest challenge for industrial emissions is to move away from gas – some manufacturing can't use electricity so we need to find an alternative fuel that can be delivered very rapidly.



We need to reduce our industrial energy use by 30% by 2040, regardless of the fuel being used.



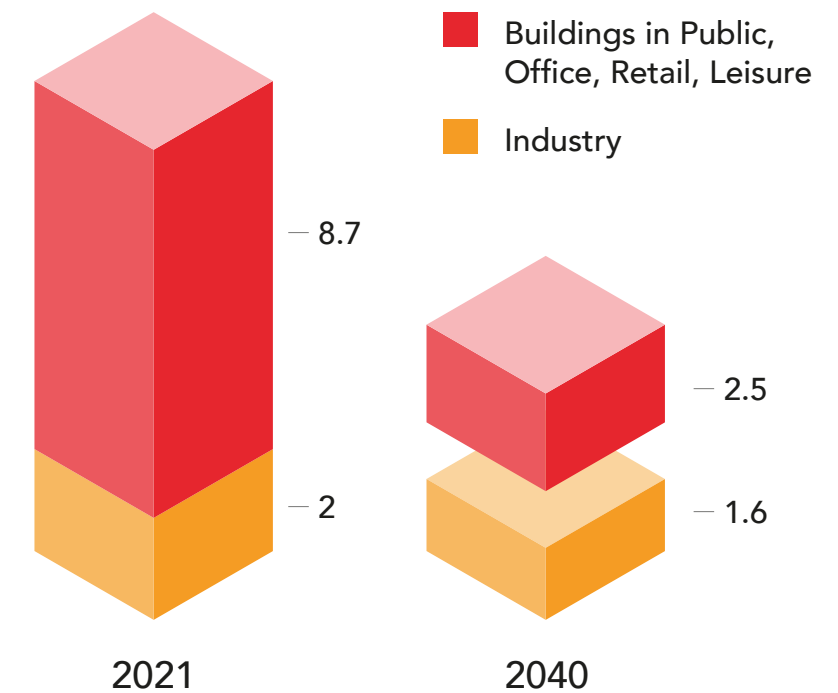
Businesses also have a major role to play in reducing other impacts, such as waste and materials use.



Many of our commercial buildings are poorly insulated and need upgrading, just like our homes.

Glass Futures is a global industry-led glass R&D, innovation and training hub which will decarbonise the production of glass. The initial development, to be located on the former United Glass Bottling plant site in St Helens will have a furnace which enables both individual product testing and small run manufacturing. No such facility exists anywhere in the world.

Workplace Energy



Energy figures in tera-watt hours (1 tera-watt = 1 billion kWh units)

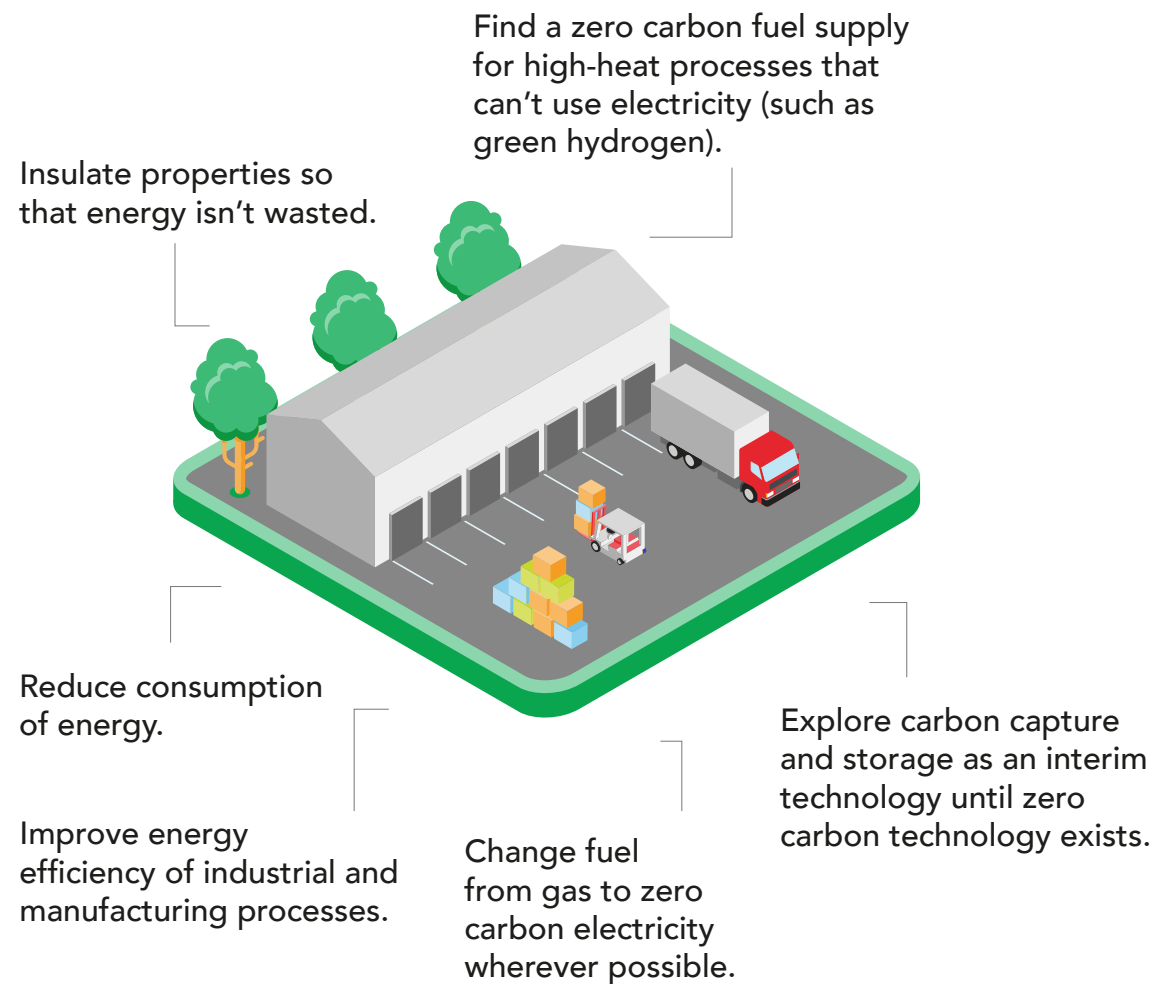
From 2025, HyNet will use state-of-the-art technology to produce, store and distribute hydrogen as well as capturing and locking up carbon from industry.



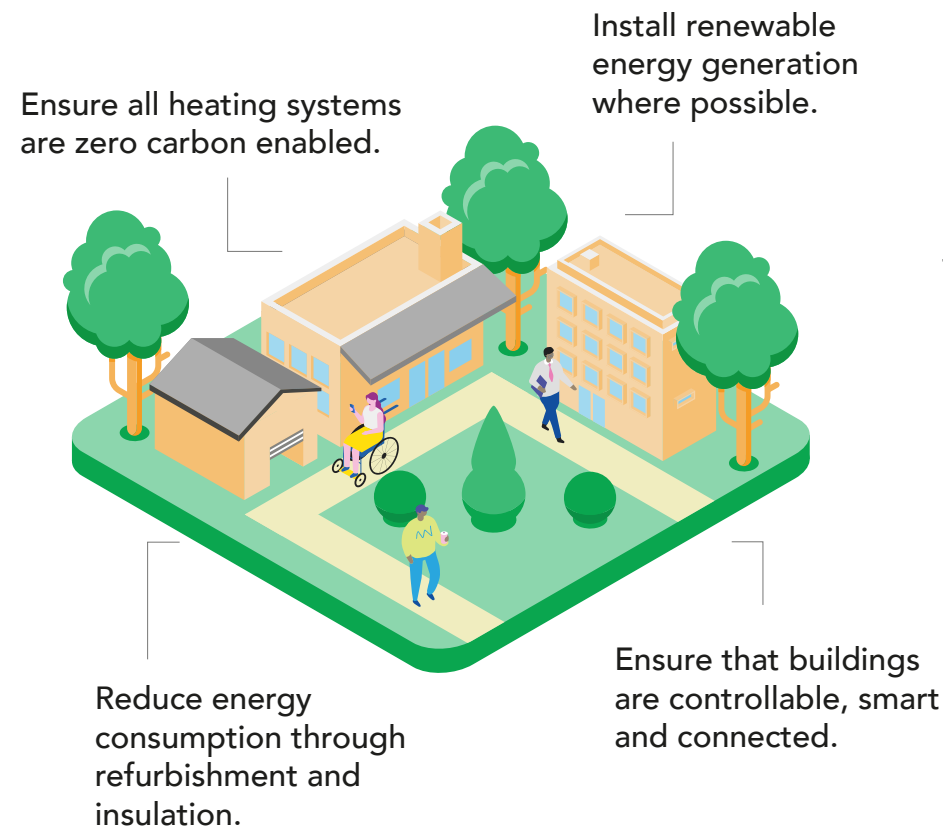
Workplaces

How we're going to tackle these challenges

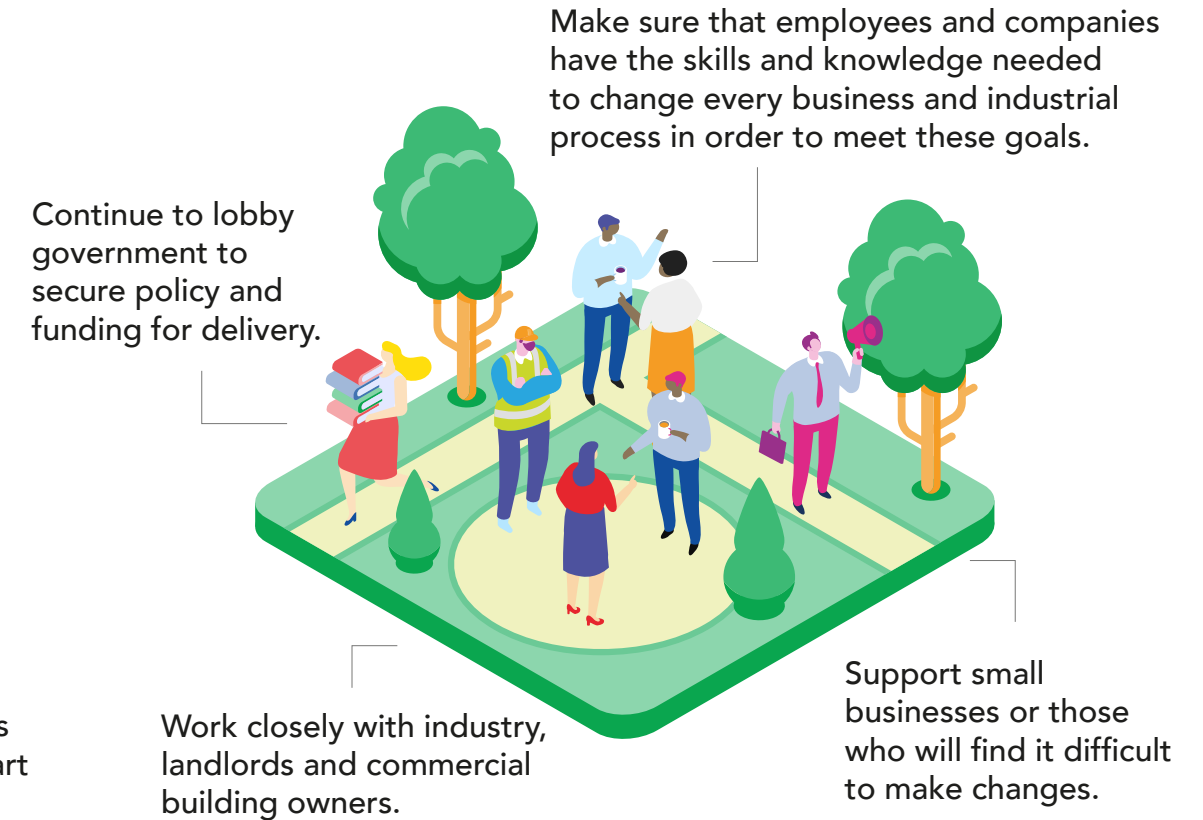
Industrial sites will need to:



Public buildings, offices, leisure and retail buildings will need to:



To achieve this we will need to:



What can be done now and in the future?

In order to achieve net zero in Liverpool City Region we need to work collectively and quickly. Whilst the challenge may feel insurmountable as individuals, together we can achieve our goals. How we interact with the world has fundamentally changed over the last twenty years and to get to where we need to be we'll need to change again. You can be part of this change; here's how.

What can be done now and in the future?

Together we can make the difference

This document is a call to action for everyone; individuals, companies, community groups, local authorities, public sector partners and government.

The Liverpool City Region has made great strides already in our journey to net zero carbon, but there is much more to do. To play our part in avoiding the climate crisis we all need to work together.

Our next stage is to work collaboratively with all partners and stakeholders across the city region to co-create a comprehensive action plan against which short term and longer term progress can be measured.

We are confident that with the right resources, investment and the commitment of our communities, we will achieve the cleaner, sustainable and fair future that the Liverpool City Region deserves.

Three things you can do to get involved in the Net Zero Carbon plan

1 Engage
in how we think about a greener future, have your say on how we change our homes, neighbourhoods and workplaces.

2 Encourage
your community and workplaces to act together to pledge action alongside others.

3 Educate
yourself and others on climate information and simple actions – take a look at [our website](#) which also signposts to Liverpool City Region's Local Authority resources.

