



# North East Zero Emission Vehicle Policy

Moving to a green, healthy, dynamic and thriving North East

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# Foreword

This time last year, I was pleased to introduce the North East Transport Plan, the first to cover the whole region. I stated then that the plan was the first step in a journey towards a green, healthy, dynamic and thriving North East, and this policy represents another step towards that goal.

We know that road transport contributes 37% to the North East's carbon emissions – the most out of any sector. To tackle the climate emergency our region faces and avoid a car-dominated recovery from the pandemic, it is imperative that we increase use of green, sustainable transport. This is why we have developed a Bus Service Improvement Plan in response to the Government's National Bus Strategy, to underpin a dramatic reset of our bus network and encourage greater use. We also continue to invest heavily in better cycling and walking provision and continue to support people as they make the switch from the car to a more sustainable form of transport.

However, we also know that currently many journeys in our region are made by road and 60% of commuter trips are by car. There will be times when car travel is an appropriate choice for your journey, which is why investment in our regional electric vehicle (EV) infrastructure is so high on the North East's agenda.

Electric vehicles provide a cleaner, more sustainable option for motorists than standard petrol or diesel cars and indeed the government has stipulated that all new cars and vans must be fully zero emission by 2035. We want the transition to emission-free driving to be as easy and seamless as possible for local people, and to happen as quickly as possible in light of the alarming climate emergency we all face.

This policy sets out how we will take a co-ordinated approach to the delivery of EV charging infrastructure, ensuring that we have a convenient, accessible and reliable network that meets the needs of local people in both our urban and rural communities. We also need to address any questions or concerns people may have about switching to zero emission vehicles.

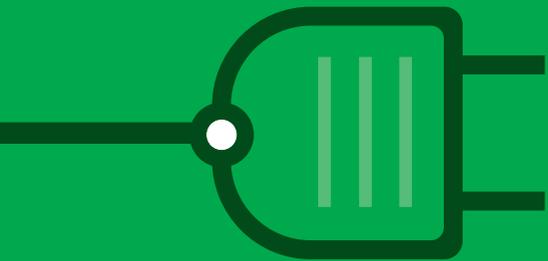
Our region has constantly been at the forefront in promoting the use of zero emission vehicles (ZEVs). The North East is home to Europe's

most successful EV (the Nissan Leaf), the UK's only large-scale battery factory (Envision, Sunderland) and recent announcements from Britishvolt confirm our position as a key global centre in emerging clean energy technologies. Through investing in EV infrastructure and supporting people to make the changes required, we can build on that record of achievement to deliver more zero emission vehicles on our roads, tackling air pollution and creating a better environment. That is the prize we strive to achieve for local people.



**Councillor  
Martin Gannon**

**Chair of North East  
Joint Transport  
Committee**



# Executive Summary

**This is the North East's first region wide Zero Emission Vehicle (ZEV) policy, and it sets out our aim to further develop and expand the North East's ZEV charging network, and to increase the uptake of Zero Emission Vehicles across the region. We define ZEVs as being any vehicle that does not emit pollutants at the tailpipe.**

The policy covers a geographical area that comprises the seven local authorities in the North East, and two Combined Authorities, the North of Tyne and North East Combined Authorities, which are brought together by the North East Joint Transport Committee (NEJTC).

Our vision is one of “moving to a green, healthy, dynamic and thriving North East” and this policy will help by providing a sustainable, emission-free option for journeys that need to be made by car.

**The policy builds on the five objectives of the North East Transport Plan:**

- A Carbon Neutral North East
- Overcome Inequality and Grow Our Economy
- A Healthier North East
- Appealing sustainable transport choices
- Safe, secure network.

The North East Zero Emission Vehicle policy will help people make the right travel choice. It is not the aim of this policy to encourage people who are already walking, cycling or using public transport to switch to a zero-emission vehicle. Instead, we want to promote the use of such vehicles for journeys which have to be made by car, helping to tackle the climate emergency, improve air quality and address transport-related social exclusion.

Transport is the largest contributing sector to greenhouse gas emissions, representing around 27% of all UK greenhouse gas emissions<sup>1</sup> and this policy will assist us to move towards a carbon-neutral north east. It also reflects national government policy, with the sale of new petrol and diesel vehicles to be banned from 2030, and hybrid vehicles to follow in 2035.



Promoting the use of ZEVs not only has environmental benefits, it is also good for our economy since this region is at the forefront of the ZEV agenda, illustrated by developments such as the Nissan Leaf and four planned Gigaplants producing low carbon lithium-ion batteries in the region, reinforcing our role as a leader in the journey towards net zero and clean energy.

We also have a successful track record of securing funding and project delivery, including programmes such as Go Ultra Low and the regional taxi charger project, plus the planned Zero Emission Bus Regional Areas (ZEBRA) project.

The policy focuses on ZEV users that will take advantage of a publicly available infrastructure network while recognising and linking to the work that is happening in other areas of road transport, such as buses, freight vehicles, micro mobility, and car clubs. It also reflects the need to provide accessible solutions for people and businesses who are not currently ZEV users. By delivering a comprehensive and inclusive public infrastructure network, together with clear positive messaging, we can overcome the concerns some people have about switching to ZEVs.

We aim to complement private sector initiatives that are taking place as well as the work of local authorities who are delivering on-street residential charging schemes whilst recognizing the challenge of rolling out ZEV infrastructure to areas of high-density housing without off street parking and remote rural communities.

The policy forecasts the number of plug-in vehicles expected to be on the roads in the region by 2035 and sets out the levels of infrastructure which would be required to support future demand based on the UK government's Transport Decarbonisation plan growth scenarios.



The policy outlines the present situation in respect of the energy supply network and the EV infrastructure currently provided in the region, as well as the role of hydrogen fuel. It reports on the findings of a range of studies that help us to better understand perceptions and barriers for local businesses and residents in making the transition to ZEVs, covering issues such as accessibility of infrastructure, range anxiety and cost.

To meet our ambitions, it is vital that the ZEV infrastructure in the North East continues to grow at pace and this will need to be matched by appropriate capacity in the available power supply. Lack of infrastructure remains a significant barrier to the uptake of ZEVs and so a delivery programme that meets forecast demand is crucial.

The policy therefore forecasts the projected growth in private Zero Emission Vehicles up to 2035 and estimates the amount of public charging infrastructure that will be required to support this growth. With this in mind, we have developed out a series of visionary policy statements that cover Infrastructure, People and Vehicles which set out how we will support the uptake of ZEVs in the region.

The following diagram sets out these policy statements and how they relate to the Vision and Objectives of the North East Transport Plan.

## The Vision

**‘Moving to a green, healthy, dynamic and thriving North East’**

## The Objectives



**Carbon-neutral  
North East**



**Overcome inequality  
and grow our economy**



**Healthier North East**

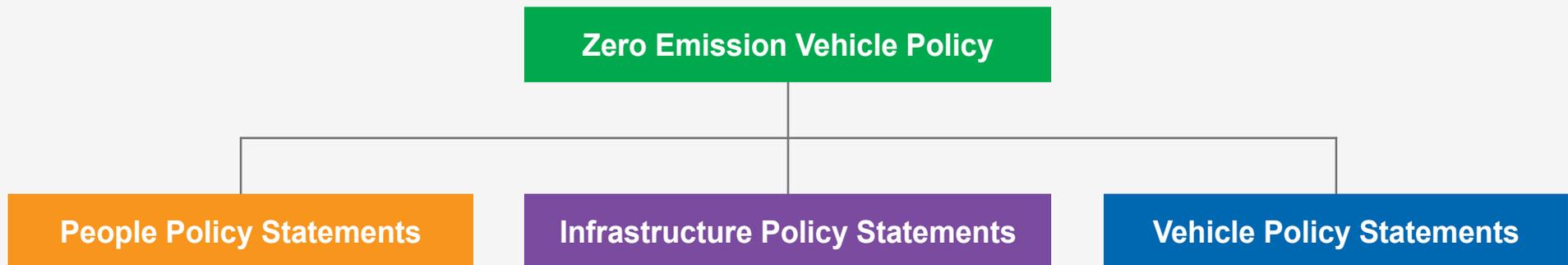


**Appealing, sustainable  
transport choices**



**Safe, secure network**

## Policy Statements



### People Policy Statements

- We will embrace current work being undertaken on accessible and inclusivity standards for infrastructure and support our partners to ensure people with mobility/accessibility impairments are able to access and use charging infrastructure.
- We will engage with the people who live, work and visit the North East to understand their current and future infrastructure requirements to enable their transition to ZEVs.
- We will continue to make use of the Go Ultra Low North East brand, as a way to market and promote activities to support the uptake of electric vehicles.
- We will continue to seek funding to install charge points for shared car club projects, particularly in rural areas and areas of high social deprivation, to help tackle challenges with social isolation and transport poverty.
- We will support a region-wide discussion on the approach to setting tariffs to deliver the best possible customer experience.
- We will procure a supplier to manage any charge points that are within our ownership and they will be required to meet a set of minimum standards including maintenance and quality.

Our prediction is that, in the next 15 years, as many as 28,000 publicly available EV charging points may be required in some scenarios to meet demand from users across the region. This will be progressed through a region-wide programme that sits across all public and private bodies, to direct activities that support the uptake of zero emission vehicles, including monitoring progress made by partners, and making charging information available to the public in simple and easy-to-access formats.

### Infrastructure Policy Statements

**Our prediction is that as many as 28,000 publicly available EV charging points may be required in some scenarios to meet demand from users across the region up to 2035:**

- We will prioritise the remaining priority sites from our regional enabling study (Enabling Electric Vehicle Charging in North East England 2021 to 2025) and continue to seek existing and new funding opportunities to take these and future sites forward.
- We will refresh our regional enabling study on an annual basis ensuring that the priority sites continue to be the most appropriate locations.
- We will seek opportunities to work with the private sector, with the aim of coordinating the installation of ZEV infrastructure in the region, ensuring that future demand is able to be met.
- We will take a flexible approach to filling the infrastructure gaps and monitor the deployment of public charge points across the region, reporting on progress.
- We will seek to enter into a strategic partnership with Northern Powergrid to make sure that the power network can support the installation of new EV charging infrastructure, both in terms of substation capacity and overall demand on the network.
- We will work with partners to review and coordinate the deployment of charging in remote rural areas and areas of high social deprivation to ensure challenges with social isolation and transport poverty are tackled equitably.
- We will work with partners where possible on charging specifications to ensure minimum requirements and robust maintenance agreements are standard across the region, ensuring a more consistent and positive user experience.
- We will ensure that the government's accessibility standards are implemented regionally in future procurement exercises and infrastructure projects.
- We will continue to grow partnerships across the region, working with key regional site owners and local authorities to understand new opportunities for public infrastructure.

### Infrastructure Policy Statements continued

- We will continue to take advantage of our region's expertise and explore opportunities to test bed innovative clean energy solutions.
- We will continue to seek and apply for funding to install and maintain ZEV chargers across the region, especially in commercially-unviable locations, for use by the public and the taxi and private hire industry.
- We will work closely with the R&D sector to exploit hydrogen technology for vehicle propulsion and to deploy at scale if required, particularly as a means of decarbonising Heavy Goods Vehicle fleets.

### Vehicle Policy Statements

- We will monitor the uptake in zero emission vehicles across the region and report on progress against projected growth.
- We must strengthen use of cleaner, greener cars and vans.
- We will continue to seek funding opportunities to deliver zero emission buses.



# 1. Introduction: What is the Zero Emission Vehicle policy?

**This is the North East's first region wide Zero Emission Vehicle (ZEV) policy, and it sets out our aim to further develop and expand the North East's ZEV charging network, and to increase the uptake of zero emission vehicles across the region.**

**Definition:** A Zero Emission Vehicle is defined in this policy as any vehicle that does not emit any pollutants at the tailpipe. For example, Battery Electric or Hydrogen Fuel Cell vehicles

The geographical area addressed by this policy comprises the seven local authorities in the North East, covering two Combined Authorities, which are brought together by the North East Joint Transport Committee (NEJTC):

- **The North of Tyne Combined Authority (NTCA)** (comprising Newcastle, North Tyneside and Northumberland)
- **The North East Combined Authority (NECA)** (comprising Durham, Gateshead, South Tyneside, and Sunderland)

Our goal is to greatly improve the lives of everyone living or working in our region. We want to deliver a modern, robust transport system region-wide and promote greener, more sustainable travel and we are working to implement our vision of “moving to a green, healthy, dynamic and thriving North East.” This policy will help us to achieve that vision by providing a sustainable, emission-free option for journeys that need to be made by car.

### How this policy is structured

**This chapter** sets out how the policy aligns with the North East Transport Plan and government policy, and the reasons why it has been developed now.

**Chapter 2** details the role of the region, the scope of the policy and the case for investment in our ZEV infrastructure.

**Chapter 3** explains the current situation in the North East in terms of Infrastructure, People and Vehicles and what the public have told us about their attitudes to ZEVs.

**Chapter 4** looks at future demand and how current projections for electric vehicle take-up in the region compare with government targets.

**Chapter 5** is a key chapter, setting out the main policy areas and listing a series of clear policy statements aimed at supporting the delivery of the Transport Plan vision and objectives.

**Chapter 6** focuses on policy delivery and outlines the governance structure that will oversee it.

**Chapter 7** covers the next steps.

**Chapter 8** concludes the document.

## The Zero Emission Vehicle policy and The North East Transport Plan

In 2021 the JTC published the North East Transport Plan (NETP) which sets out our strategy for ensuring that the transport network delivers improvements to the health, environment and economy of the North East. Our plan sets out a vision of “moving to a green, healthy, dynamic and thriving North East” and outlines our region’s transport aspirations up to 2035.

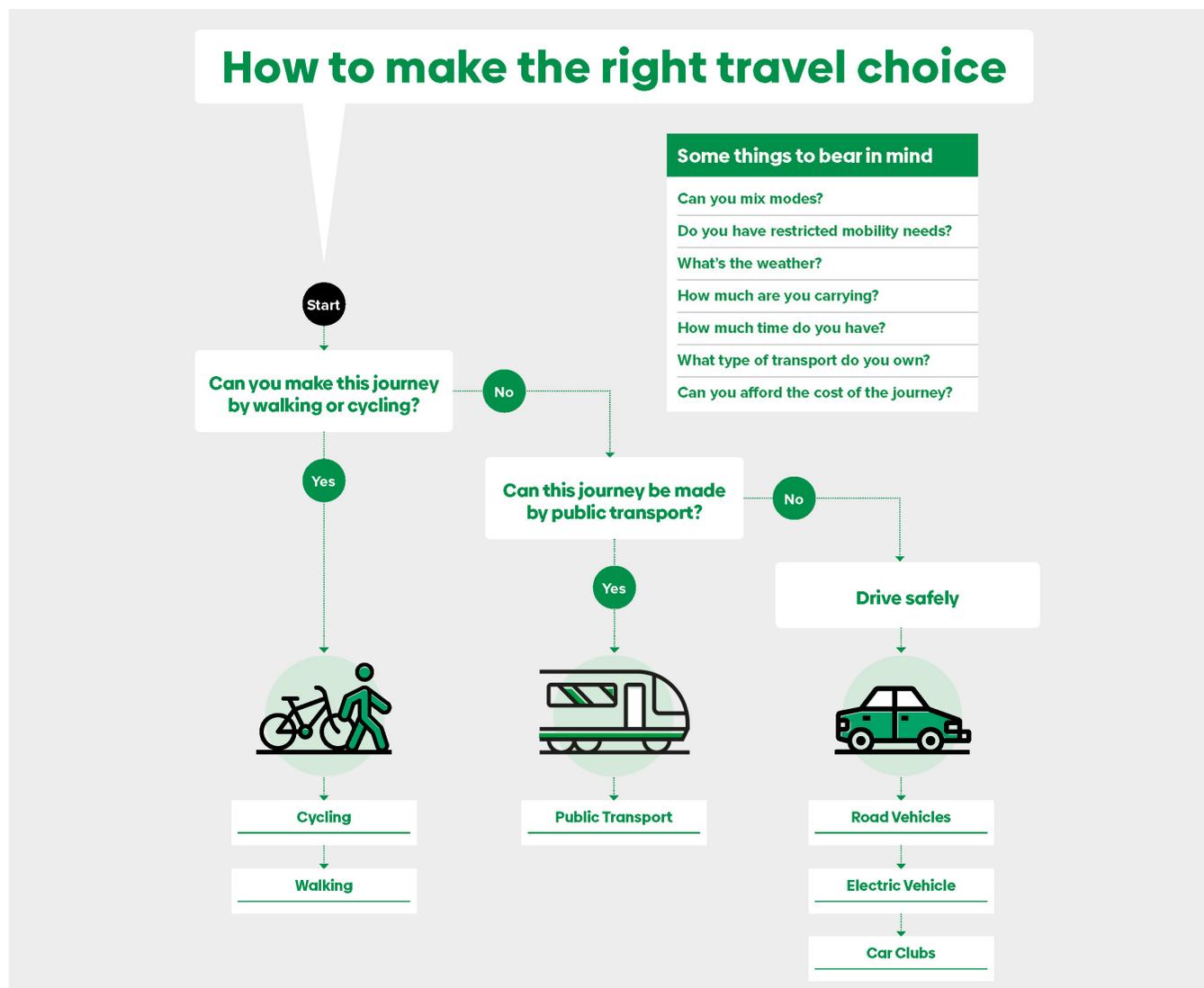
### The Transport Plan has five clearly defined objectives:

- A Carbon Neutral North East
- Overcome Inequality and Grow Our Economy
- A Healthier North East
- Appealing sustainable transport choices
- Safe, secure network.

The North East Zero Emission Policy is a key commitment within our Transport Plan and aims to set out how we will plan and deliver the ZEV charging infrastructure and behaviour change initiatives required to achieve a shift to zero emission vehicles. This will support the objectives of the Plan and help us to achieve our vision.

## Making the right travel choice

Central to the North East Transport Plan is our ambition to provide solutions to help people make greener travel choices where it is appropriate to do so and at a price they can afford. We want to encourage people to think through their travel options and make the right choice for their journey.



Whilst we aim to encourage the use of public transport, walking and cycling, we recognise that the car is the only suitable option for some journeys. 60% of commuter trips in our region are made by car<sup>2</sup> and this ZEV policy is intended to help reduce the environmental impact of car travel by encouraging the switch to zero emission vehicles.

If our vision is to be achieved then people should travel by sustainable options, such as walking, cycling or public transport, wherever possible. It is not the aim of this policy to encourage people who are already walking, cycling or using public transport to switch to a zero-emission vehicle. Instead, we want to promote the use of such vehicles for journeys which have to be made by car, enabling drivers to avoid the use of petrol or diesel fuels.

### Why is a Zero Emission Vehicle Policy needed?

Successful delivery of the ZEV policy will address a number of challenges in the North East, particularly carbon emissions, air quality, transport poverty and transport related social exclusion, and contribute to the delivery of all five of our Transport Plan objectives.

### Carbon emissions

In May 2019, the UK was the first national government to declare that there is an Environment and Climate Emergency, passing legislation requiring the government to reduce the UK's net emissions of greenhouse gases by 100% relative to 1990 levels by 2050.

Subsequently, our two Combined Authorities and seven local authorities have all declared their own Climate Emergencies, introducing climate change plans that centre around the need to reduce carbon emissions by at least 45%, with four of the authorities in the region committing to carbon neutrality by 2030.

Transport is the largest contributing sector to greenhouse gas emissions, representing around 27% of all UK greenhouse gas emissions<sup>3</sup>. As part of its strategy to tackle transport emissions, the UK Government's 2020 "Build Back Better: Our Plan for Growth" brought forward the ban on the sale of new petrol and diesel only engine cars and vans by 10 years, from 2040 to 2030.

The plan also stipulated that all new cars and vans will be fully zero emission at the tailpipe from 2035.

### Air quality

The government has also called for action to improve air quality and to address harmful nitrogen dioxide emissions largely resulting from diesel-fueled road transport. Four of our seven local authorities, Durham, Gateshead, Newcastle and South Tyneside, have identified Air Quality Management Areas. In July 2022, a Clean Air Zone will be introduced to Newcastle City Centre and the Tyne, Swing, High Level and Redheugh Bridges to combat pollution levels. The Clean Air Zone charge will apply to all taxis, vans, buses, coaches and HGVs that do not meet the legally required emissions standards.

### Transport poverty and transport related social exclusion

Low income, poor availability of public transport and lengthy journey times to access essential services result in some households and individuals in the North East experiencing transport poverty. Transport poverty is experienced in both urban and rural areas of the region; however, a Transport and Inequality Evidence Review for the Department for Transport has found that the impacts of transport poverty are worst for disadvantaged people in rural areas.

A more recent study carried out for Transport for the North<sup>4</sup> found that the extent of transport related social exclusion was under-recorded and stated that “...there is a very wide range of people for whom transport is a barrier to social inclusion.” The study area included a number of communities across the North, one of which was based in Western Gateshead.

Transport poverty and transport related social exclusion have health and wellbeing and economic impacts and the ZEV policy can help to address these by identifying the infrastructure needed to connect people to employment opportunities, essential services and healthcare. Although outright purchase of a ZEV may not be a viable option for individuals experiencing transport poverty, such vehicles could be provided as part of shared mobility and car club initiatives.

## Government legislation

The UK Government is committed to a transition away from internal combustion engines (ICE), with a ban on the sale of new petrol and diesel vehicles in 2030, and hybrid vehicles to follow in 2035. It is anticipated that this will cause a step change in uptake of electric vehicles across the region and nationally.

## Government carbon targets

To meet the overall net zero target, all transport emissions will need to be eliminated before 2050; as the average life of a vehicle in the UK is 14 years, phasing out of petrol and diesel engine vehicles should be achieved in advance of 2050.

This was followed by the UK’s Transport Decarbonisation Plan in July 2021 setting out the central role for zero emission vehicles in decarbonising the entire UK transport sector, and the need for infrastructure that is easy to use, accessible and affordable to support users in their transition away from petrol and diesel vehicles.

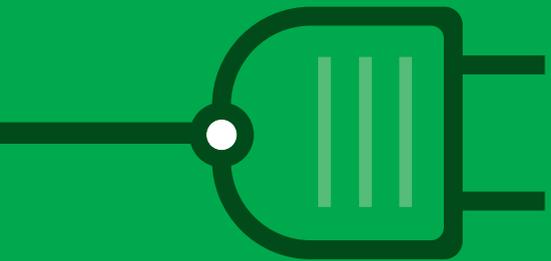
## Summary

The delivery of a North East ZEV policy that covers our two combined authorities will ensure a consistent approach to delivering an accessible and sustainable ZEV public infrastructure network that helps achieve our Transport Plan vision and objectives, tackles the region’s climate emergency and helps to address transport poverty and transport related social exclusion. The policy will also assist with the government’s target to phase out the sale of new petrol and diesel engine cars.

The policy is intended to provide a strategic overview in planning and delivering a ZEV infrastructure network for people who live, work, and visit the North East by ensuring that all future public ZEV infrastructure projects:

- Cover both urban and rural areas
- Are sustainable and well maintained
- Meet current and future legislative requirements
- Plug the gap between commercial and home charging facilities – supporting local authority infrastructure plans and ensuring charging infrastructure is provided in areas that are not covered by commercial operators
- Support the full range of users who will make use of a public network, including those with disabilities, mobility issues, and the elderly
- Are actively promoted, highlighting the benefits to the region, such as reduced CO2 emissions and improved air quality through the complete removal of localised and toxic tailpipe emissions.

It is recognised that the forecasts in this policy are aspirational, and are dependent upon long-term availability of government funding, together with private sector funding.



## **2. The Role of the Region and Scope of this Policy**

### Our case for investment

While 28% of households in the North East do not own a car – the highest proportion outside of London – we know that car ownership has grown sharply in recent years, with the number of households without a car falling from 37% in 2002/3.<sup>5</sup> It is also the case that road transport contributes 37% to the North East's carbon emissions – the most out of any sector.<sup>6</sup>

With car ownership growing and large rural areas that have limited or no bus or rail alternatives, it is essential that our investment in public transport, walking and cycling is accompanied by investment in ZEV infrastructure to provide clean options for journeys that have to be made by car.

We are in a strong position to make the economic case for this investment. As home to one of the world's first electric vehicles, the Nissan Leaf, home to the U.K.'s first drive-through rapid filling station since 2019 and Europe's first battery production facility, the North-East is at the forefront of the ZEV agenda, enabling us to provide sustainable alternatives whilst growing the economy.

The recent announcement to deliver the UK's first Gigaplat producing low carbon lithium-ion batteries in Cambois, Northumberland further reinforces our role as a leader in the journey towards net zero and clean energy.

We do not only lead the way in EV infrastructure and battery production, our research and design (R&D) centres are also working to identify alternative fuel sources, with 17 of our 21 centres focusing on electrification.

Our region's experience and determination to reduce carbon emissions means we have the capability to not only develop clean transport solutions but to identify innovative test bed solutions which can be replicated elsewhere to assist with the UK's move to net zero. We aim to maximise this potential by increasing the provision of charging infrastructure in the North East, helping to build on our status as a global leader in growing ZEV uptake.

### Our role

Our role is to support the large-scale uptake of ZEVs across the North East. In the first instance this means ensuring that ZEV charging infrastructure is widely available and readily accessible. We will identify the areas where EV publicly-available charging infrastructure needs to be installed across the region in order to ensure widespread availability, and work with partners to ensure that installation takes place.

In many cases we anticipate that installation of publicly-available charge points will be carried out by the private sector, either as part of the

facilities provided to the general public in a commercial setting (such as a supermarket or retail park), or where a charge point provider installs a charge-point at its own cost and risk in order to generate a commercial income. Our role in these cases is to ensure that information about the charging point is made widely available to the general public.

In many other cases it is likely that public sector bodies will have their own plans to install publicly-available charge points. Where this is the case our role is to assist with sourcing funding (where appropriate), to provide support and advice to the public sector body to facilitate installation, and to ensure that information about the charging point is made widely available to the general public.

In a relatively small number of cases there may be no plans for any existing body to install publicly-available charge points. In these cases we may seek appropriate funding streams which will enable us to install charging infrastructure on behalf of the region.

### Our experience

We have a successful track record of securing funding and delivering the associated projects. This policy will build on our work to date including:

### Go Ultra Low North East programme

We received £3.053m for our Go Ultra Low North East programme, which was jointly funded by the European Regional Development Fund (ERDF) and the Office for Zero Emission Vehicles (OZEV). The funding was awarded to research the most effective configurations for rapid EV charging infrastructure in order to inform future investment and activity as well as enhance the regional rapid charging infrastructure. The main deliverables of the programme, which ended early in 2021, consisted of:

- the delivery of 11 Rapid Hubs
  - Gateshead Leisure Centre
  - Angel of the North
  - Metrocentre
  - Gosforth High Street
  - Kingston Park
  - Beaconsfield car park, Tynemouth
  - Bournemouth Gardens, Whitley Bay
  - Smithy Square, Cramlington
  - Wentworth Leisure Centre, Hexham
  - Blyth- Keel Row
  - Washington, Speculation Place
- the delivery of the UK's first electric vehicle rapid charging station

- Partnership work with businesses to encourage more take-up of the growing EV charging network, helping the business community take steps to lower their carbon footprint.
- A wide range of marketing and promotional activities, raising awareness of the project and highlighting the wide-ranging benefits of sustainable travel.

NECA own charge points installed through the GUL North East programme. This includes the filling station at West Wear Street, Sunderland and 11 charging hubs. NECA lease the land that these chargers are located on from the local authorities. Through an installation, operation and maintenance contract, an external Contractor provides the operation and ongoing maintenance of the network. Charge points installed through GUL have a 15-year economic lifespan with a major upgrade planned for year 7.

### Key Lessons

Through the delivery of this programme, the following lessons have been learned and will be implemented when delivering similar future projects:

- Partnership working between regional bodies and local authorities is fundamental to the success of delivery;
- No two sites are the same in terms of costs and deliverability;
- Future proof sites where possible;
- Early engagement with the Powergrid;
- Delivering and engagement with private developers is still in its infancy;
- High levels of continued charge point reliability and visibility are key to raising driver's confidence and usage.

The data and analysis obtained through the project will help with future recommendations and interventions.



### Go Ultra Low Taxi Project

We secured just over £500,000 in grant funding from the Office of Low Emission Vehicles to deliver 10 rapid chargers for taxi and private hire vehicles across the seven local authorities. Marketing and engagement activity is also being carried out to encourage taxi and private hire companies to switch to zero emission vehicles. The charge points delivered through the project are owned by the local authority in which they are located.

### Zero Emission Bus Regional Areas (ZEBRA)

Working in partnership with Go North East, Durham County Council and Northumberland County Council, we submitted a successful Expression of Interest to the Department for Transport's (DfT), Zero Emission Bus Regional Areas (ZEBRA) Scheme requesting funding to deliver 73 zero emission buses in the region.

### Local Growth Fund EV project

We successfully bid to receive Local Growth Fund monies from the North East Local Enterprise Partnership to:

- produce an Enabling Study and 5-year Blueprint for delivering the next wave of electric vehicle chargers across the region
- Install charging infrastructure at the seven priority sites identified in the enabling study.

As a region, we have experience of delivering ZEV infrastructure to meet today's needs whilst developing a blueprint for additional infrastructure to meet future demand.

Our links with the automotive sector (one in three British cars are built at the Nissan plant in Sunderland) and the research expertise of our local universities underpin our case for investment from government to build on our impressive achievements to date, level up the economy and secure a green and lasting economic recovery.

### Scope of this policy

The policy focuses on ZEV users that will take advantage of a publicly available infrastructure network while recognising and linking to the work that is happening in other areas of road transport, such as buses, micro mobility, and sustainable travel. It will be followed in 2022/23 by a Road infrastructure and Zero Emission Vehicle Strategy setting out in more detail how we will support sustainable, low carbon travel around and through the region, including rural areas, making clean alternative fuels a realistic and attractive option.

#### What is in scope?

- Public electric vehicle charging infrastructure delivered by TNE on behalf of the regional partners
- Battery electric vehicles and hydrogen vehicles
- Hydrogen refueling infrastructure
- Promotional and marketing activities delivered by TNE under the Go Ultra Low North East banner
- Plug in hybrid vehicles are considered in the medium term as they will require infrastructure to charge them
- Cars, small vans, HGVs, taxis and private hire vehicles and fleets making use of the public charging network

- Shared mobility services such as electric car clubs and the effective integration of ZEV provision with the wider transport network, such as through the provision of charge points at Metro stations
- Buses are included within the scope of the policy but will mainly be addressed through North East's Bus Service Improvement Plan (BSIP).

### What is out of Scope

- On-street residential charging schemes will be delivered by local authorities. However, we will look to allocate a proportion of regional funding for ZEV infrastructure to areas of high-density housing without off street parking, areas with limited public transport provision and remote rural communities.
- Private networks and home charge points are not included
- HVOs (hydrotreated vegetable oil), CNG and biodiesel, are not included in scope because, despite being cleaner alternatives with lower tailpipe emissions than their conventional counterparts, they are not zero emission vehicles.
- E-bikes and E-scooters will be covered under the regional Active Travel Strategy.

### Structure of the ZEV Policy

The policy aims to complement the work being undertaken at a local authority level in delivering electric vehicle charging infrastructure. Working on a regional footprint, the JTC aims to add value by taking a strategic overview of the network, ensuring any identified gaps are filled, and that refuelling infrastructure is inclusive to all users.

Whilst every authority is unique, we recognise that there are some common challenges that we face at a regional level, such as the provision of charging infrastructure in areas of old, high-density housing without private parking space, as well as the need to ensure rural communities have equitable access to charging sites. Some investment should therefore be targeted specifically at rural areas and areas of housing in urban districts without off street parking.

The policy forecasts the number of plug-in vehicles expected to be on the roads in the region by 2035 and sets out the levels of infrastructure which would be required to support future demand based on the UK government's Transport Decarbonisation plan growth scenarios.

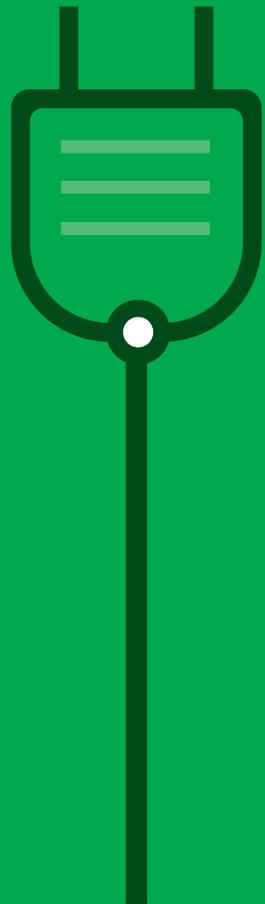
Research carried out by the energy regulator Ofgem in May 2021 reveals that almost one in four (24%) consumers plan to buy an electric

vehicle or plug-in hybrid in the next five years. There are, however, still concerns about the availability of charging infrastructure and the range of journeys, with research by Aviva also showing that 81% of people were concerned about the battery charge and range of electric cars. These concerns will be discussed in more detail in the Current Situation: People section of this policy.

It is our belief that, by delivering a comprehensive and inclusive public infrastructure network, together with clear positive messaging, we can overcome these concerns and people will feel more confident in switching to ZEVs.

We have therefore structured this ZEV Policy to focus on the approach that:





## 3. Current Situation

**The North East has been at the forefront of decarbonisation and developing low-carbon solutions for our transport network, with a number of successes in progressing the delivery of ZEV facilities. This chapter details our wealth of experience in bidding for and installing EV infrastructure and provides an overview of the feedback we have received from EV users and non- users.**

### The energy supply network

In order to meet the growing demand for electric vehicles, as we strategically plan the growth of our charging network it will be important to ensure that we consider the energy supply network in our area. Any lack of capacity on the local energy network can be a major barrier to the widespread installation of electric vehicle charge points. This issue can be exacerbated in areas where there is likely to be an even greater demand for charge points, such as densely populated urban areas where car ownership is high, but space is a premium, and in the most remote locations in the region, where travelling distances are greater. When identifying locations for new public charging infrastructure, energy supply must be considered to ensure that there is sufficient energy to enable vehicles to be charged.

Northern Powergrid (NPG) are the custodians of the electrical network in our region. Any work which is undertaken in this area will be done through partnership working with NPG.



### Infrastructure

To support the widescale transition to zero emission vehicles, the North East will require a mix of differing infrastructure options that meet the needs of users. This section describes the current status of electric vehicle charging infrastructure and hydrogen refuelling infrastructure in the region.

## Electric Vehicle Charging Infrastructure

As outlined earlier, the North East has consistently been at the forefront of electric vehicle charging since the 2009 “Plugged in Places” programme was launched and we are experienced in bidding for ZEV funding and delivering associated infrastructure.

Funded by the Office for Zero Emission Vehicles and the European Regional Development Fund (ERDF), the Go Ultra Low North East (GULNE) programme has delivered the UK’s first Electric Vehicle filling station and 11 new rapid charging hubs across the region since 2016 to support the increasing uptake of ZEVs. Estimates produced as part of the programme indicate that the infrastructure

which was deployed through the GULNE project has the potential to save 1820 tonnes of Carbon by 2030.

Newcastle University, who were partners on the now completed GULNE programme, have installed two ultra-rapid and four rapid chargers at their Helix site and are set to further expand their charging offer through The Garage project which is a transport hub and car park with sustainability at the core, offering a range of fast chargers.

The region has also secured additional funding from OZEV to install rapid electric charge points for taxis and private hire vehicles at 10 locations across the North East. These are currently being installed, with eight of the chargers now in operation.

There are currently over 800 publicly accessible charging posts in the North East, offering a range of different charging speeds ranging from 3.7kW to >50kW, as detailed in Table 1.

It should be noted that there are various options for charging a vehicle from slow to ultra-rapid. The most suitable solution will depend on the needs of the user. Ultra-rapid chargers are the fastest way to charge an ZEV and take a fraction of the time a slow or fast charger would take. However, the rate of which ZEVs are able to charge is ultimately dependent on the vehicle model. Consequently, only the newest ZEVs on today’s market are able to maximise these newest charging rates at 100-150kW when they plug in.

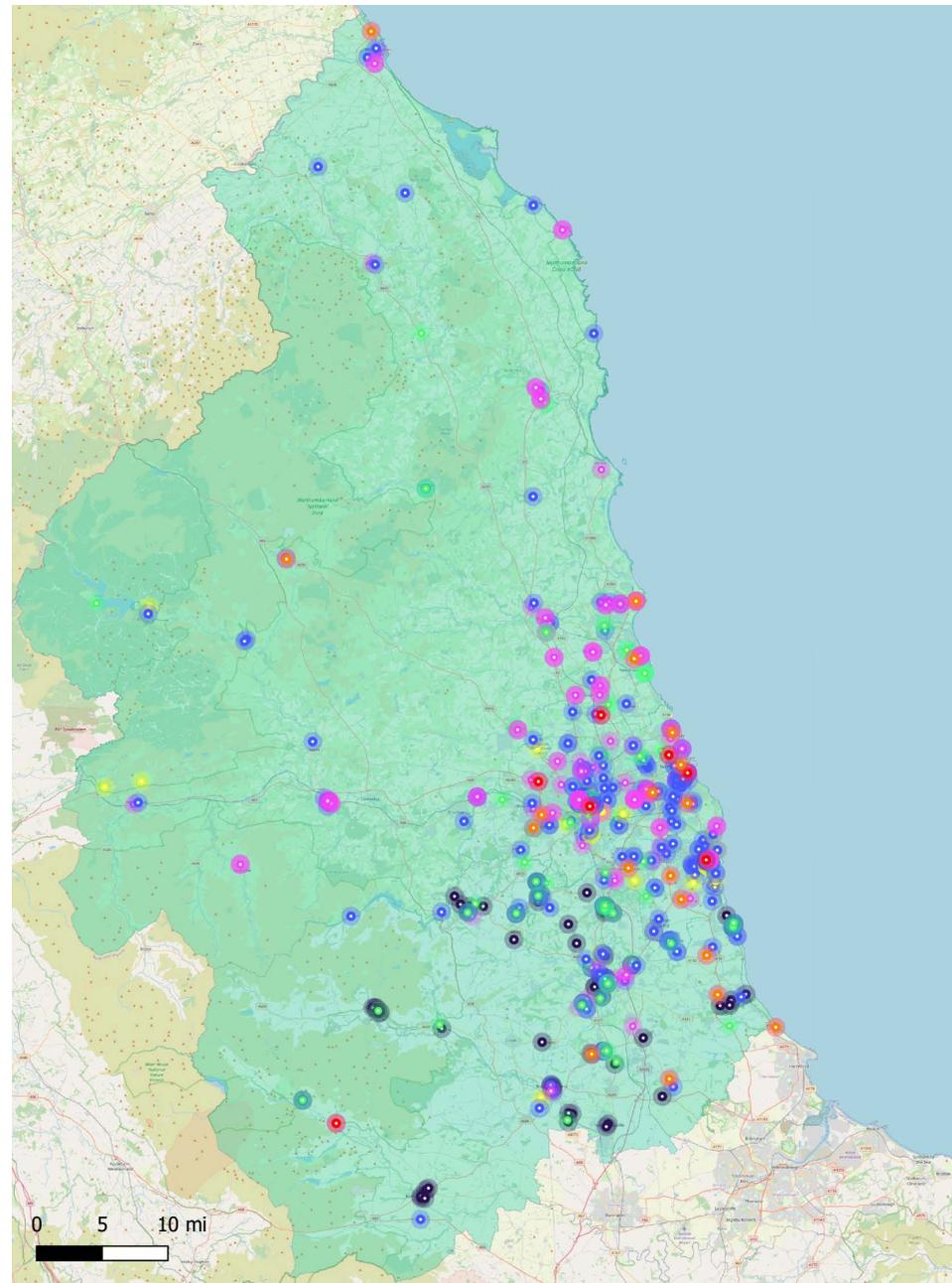
Characteristic	Slow	Fast	Rapid	Ultra-rapid
Power	3.7- <7kW	7-22kW	43-50kW	>50kW
Mileage added per hour	10-<30 mi	20-94 mi	116-215 mi	300-400mi
Charging time	10-12hrs	3-4hrs	40 minutes	20 minutes
Primary use	Residential	On-street and Destination	Taxi ranks, motorway services, and Hubs	Taxi ranks, motorway services and Hubs

Figure 1: Overview of the current charging technology in the North East

Approximately 560 of the public charge points in the North East are Fast (7kW-22kW). On average, fast chargers are situated 1.45km apart, but the gap can be up to 16.76km from the nearest available charger in some more rural areas. These are followed by 231 Rapid and Ultra-Rapid charge points, offering greater opportunities for a quick top-up at the edge of urban centres, along motorway services and in more rural locations. The average distance between rapid chargers is 3.37km but with some up to a maximum of 33.2km.

ZEV charging infrastructure is situated in both urban and rural areas across the North East; however, the majority of charge points are found in urban locations (see Figure 2). Some of this infrastructure is located at public transport interchanges and stations, enabling ZEV trips to form an integrated part of a wider sustainable journey. There are 34 charging points in total across 11 public transport stations in the North East (4 Park & Rides, 2 Bus Stations, 1 Rail station and 5 Metro stations).<sup>9</sup> These are aimed at encouraging use of ZEVs as part of an integrated journey using public transport which is reflected in the type of charger used in such locations.

**Figure 2:** Existing and planned public charge point infrastructure across the region's seven local authority areas



### A plan to refresh and grow an ageing network

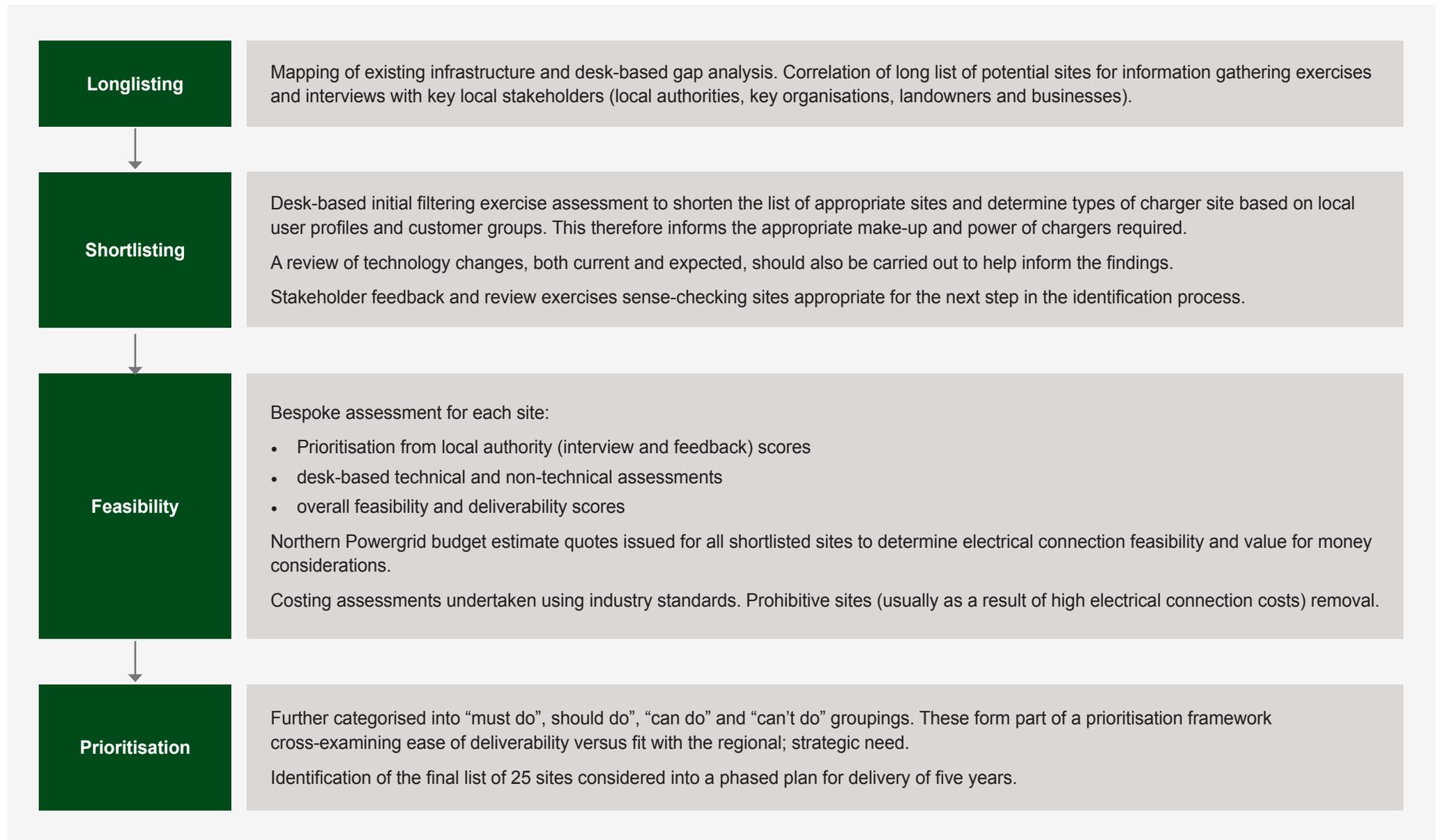
There is a diverse range of chargers in use across the region and demand continues to grow; however, approximately 30% of the region's public network hosted by local authorities is now very old, with a significant proportion of these chargers installed as early as 2011. As a result of the end of maintenance agreements and warranty periods, and the development of technology, users across the region may discover that many of these chargers are either faulty or out of use, something reflected in public comment with 42% of those surveyed as part of the North East LEP area EV Charging Behaviour study in 2020 stating that the charge point they tried to use was sometimes not working.

To kick start the next stage in development of the public charging network and ensure that infrastructure is situated to support ZEV uptake, a study<sup>10</sup> was commissioned in 2020 to identify a series of new priority sites and develop a blueprint for delivering the next generation of charge points across the region over a five-year period.

Starting with a longlist of over 700 potential sites across the region, the study identified 25 new priority sites for charge points over the coming years. Funding was received from the Local Growth Fund to install infrastructure at the first seven priority sites, one in each local authority area, and this work will be completed in 2022. Subject to funding becoming available, the remaining 18 sites will be delivered in later phases, potentially providing an additional 68 charge points in total. The study will be refreshed on a regular basis to ensure that the prioritised sites continue to be the most appropriate ones for the region. This puts the North East in a strong position to proceed with pace in the provision of further charge points, since vital planning and preparation work has already been undertaken.

Charge point sites were identified based on the prioritisation criteria shown in Figure 3 and work took place with local authorities and Nexus to identify suitable sites. By taking this approach with our local authority partners and Nexus moving forward, we will be able to identify sites that fill network gaps and are also affordable to deliver. This evidence-based approach also puts our region in a strong position when applying for new funding opportunities.

Additionally, the seven local authorities, Nexus and TNE are working with the North East Procurement Organisation (NEPO) to bring forward a concession agreement to enable long-term investment in the regional electric vehicle charging infrastructure (EVCI). This investment is needed to upgrade, operate and maintain the current network and to resource its expansion in order to secure a sustainable long-term future.



**Figure 3:** Overview of steps in our prioritisation criteria for identifying new charging locations

### Additional projects

In addition to the ongoing investment in EV infrastructure by all local authorities, four of the region's councils (Sunderland, Northumberland, Durham, and South Tyneside) have secured additional funding from the Office of Zero Emission Vehicles (OZEV) to deliver on-street charge points in residential areas.

Durham County Council, working in partnership with Innovate UK, is delivering the Scaling On-Street Charging Infrastructure (SOSCI) project seeking to install 200 fast (22kW) charge points across the county.

#### Case Study:

### Scaling On-Street Charge point Infrastructure (SOSCI)

The Scaling on-street charging infrastructure (SOSCI) project, managed by Cybermoor Ltd and Charge My Street, is an Innovate UK funded project with a target of installing 100 22kW fast chargers across the rural areas of County Durham over a period of 15 months.

The SOSCI project is designed to support County Durham residents who are unable or unsure of buying an electric vehicle because they do not have access to off-street parking to charge it. The project is therefore focusing on sites such as community centres which are not usually used for public parking at night, allowing residents without off-street parking to be within 5 minutes' walk of a Charge Point.

As of October 2021, SOSCI have installed 23 fast chargers in car parks and Park and Ride sites across County Durham. The list of current locations is available on the project website.

### Private sector commitments

Considerable activity to progress ZEV charging capacity is being undertaken by the private sector and it is important to understand their current plans and commitments in order to avoid duplication of charge points in an area. However, the majority of such investment will take place in locations that attract significant footfall and are likely to generate the greatest revenue. This means that locations that may not meet these attributes, such as those in more rural and less heavily populated areas, are less likely to be supported by private operators in the near term, or without additional support.

### Hydrogen Refuelling Infrastructure

In 2021 the government launched their Hydrogen Strategy for the UK which sets out their approach to developing a thriving low carbon hydrogen sector which can provide greener, flexible energy to the transport sector.

This aligns with the Transport Decarbonisation Plan that describes Hydrogen as being most effective in transport areas 'that batteries cannot reach', where energy density requirements or duty cycles, weight and volume restrictions and refuelling times make it the most suitable green energy source (such as for Heavy Duty vehicles).

Compared with electric vehicle charging infrastructure, the development of hydrogen refuelling infrastructure is in its much earlier stages. There are currently only 10 operational and publicly accessible hydrogen refuelling stations across the UK<sup>11</sup>, and none between Sheffield and Aberdeen.

Our neighbouring region, Tees Valley, is currently in the planning stages of developing two refuelling stations to serve the wider region in the coming years. These stations will support the introduction and trial of hydrogen cars, delivery vans, buses, and Heavy Goods Vehicles (HGVs). Government funding has been received for a trial that will see supermarkets, emergency services and delivery companies using hydrogen-powered transport to move goods and carry out local services, helping to understand the role hydrogen can play in achieving 'net zero' targets.

The delivery of a hydrogen infrastructure network that complements the investment by local authorities and the private sector, whilst being open and accessible to all, will support the North East's momentum in the adoption of ZEVs and could provide additional options for vehicle types not suited to battery power.

## Summary

The North East has a positive record in the delivery of significant electric vehicle infrastructure projects, and we are continuing to seek funding to install additional infrastructure that will support the transition to ZEVs.

## People

The people and businesses of the North East are at the centre of our policy and it is important that we listen to them and understand their motivations and challenges in respect of ZEVs to inform the decisions we make.

Several studies have recently been carried out in the region, the findings of which have helped us to better understand perceptions and barriers for local businesses and residents in making the transition to these vehicles. They have also enabled us to strengthen our understanding of the behaviour of existing ZEV users. They are:

- North East LEP area EV Charging Behaviour (September 2020)
- Fleet Revolution (business-focused)
- North East Transport Plan Consultation.

This research has shown us that there are four key themes that are important to people when considering ZEVs:

- Accessibility of infrastructure
- Range anxiety
- Environmental concerns
- Cost of vehicles and charging.

## Accessibility of infrastructure

Accessibility and availability of charging infrastructure is very important to our residents and concerns over access to infrastructure is a key topic raised during studies into the transition to zero emission vehicles, with many respondents telling us that more infrastructure is needed and that current chargers needed to be more reliable.

“How are we expected to make the switch with a chronic lack of infrastructure and investment?”

87.69% agreed that more public charge points were needed in their local area.

North East LEP EV Charging Behaviour Study

A significant proportion of existing and future ZEV owners in the North East will not have off street parking and will be reliant on public charging infrastructure and a third of electric vehicle drivers who took part in our EV Charging Behaviour study told us that they were completely reliant on access to public infrastructure to charge their vehicle<sup>12</sup>.

“Living in a terraced street with no private parking I do not see how an electric car could work.”

North East LEP EV Charging Behaviour Study

There appears to be agreement that the provision of public charging infrastructure in places where there is a large workforce or high footfall will be beneficial.

Transport Plan Consultation Quote:  
‘Encourage charging stations at large workspaces and public buildings as this will be hugely beneficial.’

We understand that accessibility of charging infrastructure is a particular concern in rural areas and during the Transport Plan consultation we heard from some rural

residents who want to drive an electric car but feel unable to do so due to the lack of charging infrastructure in their village and surrounding area.

This concern was also raised by respondents to the North East LEP EV Charging Behaviour Study who felt that charger coverage in rural Northumberland was lacking which was a particular problem for visitors<sup>13</sup>.

“The private sector isn’t going to put them in some rural village in Northumberland so someone has to fill the gaps.” North East LEP area EV Charging Behaviour study (September 2020)

Availability was also a problem with 62% of people responding to the same study saying that sometimes they found that the charge point was already occupied and 24% stating that this usually happened<sup>14</sup>.

Businesses have also told us that lack of awareness of public charging infrastructure acts as a barrier to the incorporation of ZEVs in their fleets. 66% of businesses engaged in the Fleet Revolution programme<sup>15</sup> were concerned that a lack of public charging infrastructure would restrict them from incorporating ZEVs into their fleets.

Our consultation respondents also told us that if they are to switch to ZEVs then they need confidence that the charging infrastructure will be maintained and operational. Research has found that satisfaction with the current charging estate is fairly low, receiving an average rating of 3 out of 10<sup>16</sup>.

“The thing that is most frustrating about using an electric car is that hardly any rapid chargers in the region actually work. The network isn’t reliable enough to drive somewhere without having at least enough battery left to get back home.”

North East LEP area EV Charging Behaviour study (September 2020)

“Drivers cited needing more chargers, but they also felt strongly that the current estate needed better maintenance and quicker repairs, commenting that this had a detrimental effect on their satisfaction levels.”

North East LEP EV Charging Behaviour Study

### Range anxiety

Range anxiety is frequently cited as a barrier to the use of electric vehicles with some people expressing concern that they would run out of charge during a journey and not be able to recharge their vehicle and 22% of respondents told us that they have not bought an EV due to range anxiety<sup>17</sup>.

“Although the journeys I personally make are short, our family car needs would not be met by an electric car.”<sup>18</sup>

A survey carried out by Aviva found that greater accessibility of charge points could reduce range anxiety with 49% of participants stating that limited charging points are holding them back from choosing a hybrid or electric vehicle for their next motor purchase<sup>19</sup>.

Range anxiety is also a concern amongst businesses with approximately 80% of the businesses engaged in the Fleet Revolution programme considering range anxiety to be one of the key barriers to implementing electric vehicles within their fleet. The promotion of charge facilities at Park and Ride or interchange sites could help to address this concern.

It is anticipated that, as technology develops, the distance vehicles can travel without charging will increase. This should mean there will be less need for continual growth in the number of charge points and range anxiety should diminish, however these messages will need to be clearly communicated to consumers.

### Environmental concerns

The environment is a key theme when asking drivers why they are considering owning a zero-emission vehicle with 69% of them telling us that reducing their emissions was by far their highest motivation for making this decision<sup>20</sup>. Environmental concerns also rank highly with ZEV owners with 50% of respondents stating that this was their main reason for purchasing a ZEV with the second most popular reason associated with the cost savings<sup>21</sup>.

Some respondents to our big transport consultation considered electric cars as having a role in reducing air pollution and climate change and some also told us that they wanted to see hydrogen infrastructure installed in the region.

‘I am 11 years old and when I am older, I would like to see more electric cars on the road because it stops air pollution and also helps stop climate change.’

The Big Transport Conversation quote, male under 13 years (2020)

‘Need to consider hydrogen and futureproofing, not just focus on EVs.’

Transport Plan Consultation Quote (2020)

Environmental concerns also rank highly amongst existing and potential public transport users with 60% of people who took part in our Big Bus Conversation stating that they would be encouraged to use the bus more, if there were more electric buses and buses with the latest low emission engines<sup>22</sup>.

‘Buses especially in and around the city and residential areas should have been fully electric some time ago.’

Big Transport Conversation, 2020

### Cost of vehicles and charging

People have told us that they expect to pay to charge a vehicle with 100% of respondents to the North East LEP's EV charging behaviour study (comprising both current and non-EV drivers) stated that it was right that some payment be introduced and 25% saying that they would much rather pay for a service that they knew was well maintained, reliable and working when they needed to use it<sup>23</sup>.

The same study states that the cost of hiring or buying a ZEV is regularly referenced as a barrier to uptake, with 52% of those who considered buying a ZEV telling us that they hadn't done so yet due to cost.

"The cost of having an electric vehicle that is able to make long distance journeys is far too expensive and for out of town remote travel there are too few charging points."<sup>24</sup>

"Make them more affordable - cost is the only factor stopping me buying one."<sup>25</sup>

"I'd be really interested in buying an electric car but the price really puts me off, closely followed by worrying about running out of charge on a long journey."<sup>26</sup>

Businesses have also told us that a lack of awareness of available grants and business-focused tax incentives discourages them from purchasing ZEVs. There is low awareness of financial support to assist businesses with purchasing a ZEV with 95% of businesses surveyed as part of the Fleet Revolution programme stating that they were unaware of the existing tax incentives available to businesses to purchase electric vehicles, through salary sacrifice/company car schemes.<sup>27</sup>

It should be noted however that, whilst ZEV adoption is on the rise, it is still a relatively new market and in the developing stages. There are many advances in manufacturing methods and battery chemistries which in turn is driving down the overall cost of such vehicles.

The Bloomberg New Energy Finance (BNEF) EV outlook, 2021, found that, in the past decade (2010-2020), the cost of Lithium-ion batteries production has fallen by 89%, with it falling 13% between 2019-2020 alone.<sup>28</sup>

Several car manufacturers have identified the next two to three years as the beginning of price parity between Internal Combustion Engine (ICE) vehicles and ZEVs.

Major car retailers such as Volkswagen have said ZEVs could reach price parity with standard ICE vehicles by 2025.<sup>29</sup>

Nissan has also announced an \$18 Billion EV strategy which includes a focus on achieving price parity. They aim to do this through innovations in battery technology making them more affordable.<sup>30</sup>

### Summary

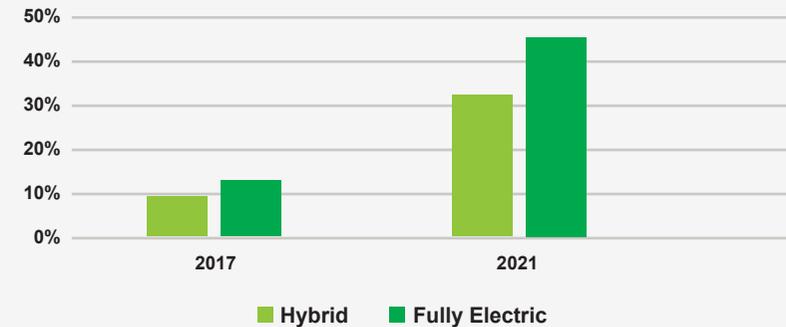
The feedback received from our residents and businesses strengthens our understanding of the concerns and barriers to ZEV uptake in the region and provides assurance that our policy will help to address these challenges. There appears to be room to increase people's awareness and knowledge of ZEVs, with 51% of respondents rating their knowledge level at 5 or under out of 10<sup>31</sup>. However, the number of people seriously considering making the transition to an EV is growing at a significant rate.

An Aviva survey in 2021 found a significant rise in the number of people considering a full electric or hybrid vehicle for their next purchase, as depicted in the graph below.<sup>32</sup>

However, there are still drivers who do not feel ready to make the change to ZEVs with the same survey finding 49% of drivers holding back from purchasing such a vehicle<sup>33</sup>.

These findings show that if we are to increase use of ZEVs then a combination of behaviour change measures and additional infrastructure will be required.

Figure 4: Type of EV Planned for Next Purchase



## Vehicles

In order to meet transport decarbonisation targets in the North East it will be important that all users are able to access public infrastructure that matches all types of ZEV in use.

To date there are still limited ZEV options available to users of larger vans, freight heavy goods and specialist vehicles although the market is making considerable progress in delivering options for all vehicle types.

As outlined below, each sector is currently at different stages in their transition to zero emission vehicles.

## Private Transport

**Definition:** Private Transport – any vehicle where the registered keeper, responsible for registering and taxing the vehicle, is an individual.

Private plug-in vehicle ownership in the North East is rising as the graph opposite illustrates.

As of March 2021, there are approximately 4,000 plug-in - including both Battery Electric (BEV) and Plug-In Hybrid (PHEV) - cars and vans licensed to private keepers in the North East<sup>34</sup>.

Figure 5: Breakdown of types of EV licensed in the North East in 2021

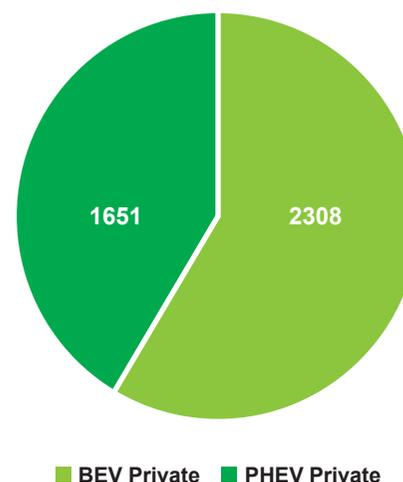
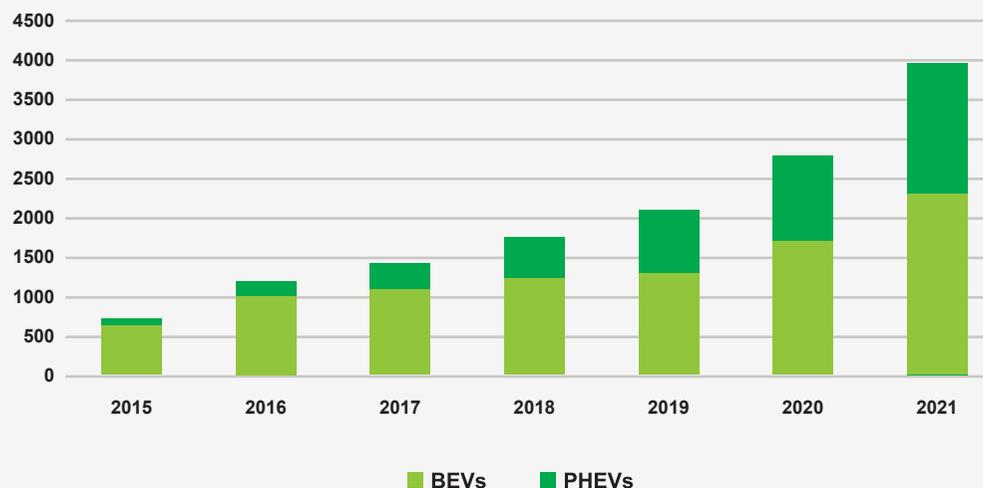


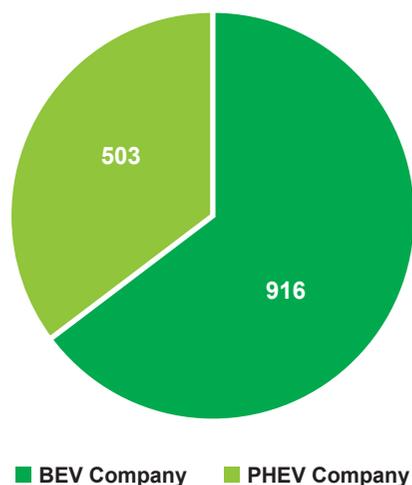
Figure 6: Increase in Private EV and PHEV Ownership in the North East



## Fleets

**Definition:** Commercial Transport – any vehicle where the registered keeper, responsible for registering and taxing the vehicle, is a commercial organisation or company.

As of March 2021, there are approximately 1,500 plug-in cars and vans (including Battery-Electric (BEV) and Plug-In Hybrid (PHEV)) licensed to company keepers in the North East, representing a 62% increase on the previous year<sup>35</sup>.



**Figure 7:** Number of commercial ZEVs in the North East in 2021

## Taxi and Private Hire

There are currently approximately 9000 registered taxi and private hire vehicles in the North East, the majority of which are petrol and diesel. However, given the significantly reduced running costs to operate electric vehicles, increasing range capabilities, and new taxi charging infrastructure supported through the Go Ultra Low Taxi Scheme, several of the region’s major taxi firms are considering phasing in electric vehicles into their fleet.

Local Authorities are currently responsible for taxi and private hire licensing. These licences set out stipulations for maximum vehicle age and the emission standards that need adhering to. At present, there is no single regional target on taxi emission standards or taxi age restrictions.

### Case Study:

#### Phoenix Taxis

Phoenix Taxis, based in Northumberland, first introduced zero emission vehicles into their fleet in 2013. Since then, the firm have rapidly expanded their zero-emission vehicle fleet and are close to operating a fleet of 50 electric vehicles.

The firm are championing the transition to an electric fleet by purchasing the electric vehicles and leasing them to a driver, who is responsible for charging their vehicle.

The firm have further invested in four rapid charge points at their depot and a number of home charging units to allow drivers to charge their vehicles at home. Phoenix Taxis further support the local community by offering electric vehicle charging for students via strategic partnerships with Newcastle University and Northumberland College.



### Buses

The regional Bus Service Improvement Plan (BSIP)<sup>36</sup> published in October 2021 outlined a commitment for all buses in the region to be either zero-emission or the highest emission standard for conventional buses by March 2025. In 2021, over 40% of the fleet meets the Euro 6 standard, while 38% are Euro 5 and 17% are Euro 4 or lower.

The region's three major bus operators are working towards lowering emissions from their fleets with considerable investment in new, modern low emission vehicles over the last decade.

In 2020, Go North East invested £3.7 million in new fully electric zero emission buses, which were partly funded by the Ultra-Low Emission Bus Scheme (ULEBS). Branded Voltra, the buses are powered by electricity that is sourced from zero-emission supplies such as solar, wind and hydro. They operate services 53 and 54 between Newcastle, Gateshead, Bensham and Saltwell Park. The fleet of nine vehicles are capable of an all-day service from the power of one overnight charge. Go North East has also built a new electric bus depot in Gateshead, capable of accommodating 30 electric buses.



The region is working with Go North East, Durham and Northumberland Councils to bid for funding from the Zero Emission Bus Regional Areas (ZEBRA) scheme to provide a further 73 electric buses for the region.

There is also a desire amongst operators to trial hydrogen fuelled buses, as this is an emerging technology that offers a greater mileage range than electric buses. The region will be bidding for 44 vehicles per year and the cost of supplying the hydrogen refuelling infrastructure as part of this trial. The buses procured will go towards replacing any routes which are currently euro 5 compliant or lower<sup>37</sup>.

### Shared Mobility

**Definition:** Shared Mobility is defined as a form of road transport that allows individuals and commercial organisations to access a personal vehicle without bearing the cost of ownership, such as car clubs.

The region has seen the introduction of several shared electric car club vehicles for both public use and as corporate pool vehicles.

New shared mobility solutions are being introduced providing users with the option of using either a bus or a car club vehicle to best suit their needs.

In more remote rural areas such as large parts of Northumberland and Durham, where walking, cycling and public transport are not always practical transport options, car clubs can provide a practical and cost-effective alternative to car ownership, especially for residents on low-incomes, reducing overall car use whilst offering access to a car for longer journeys. Provision of a ZEV further enhances the environmental advantages of such schemes.

#### Case Study:

#### Derwent Valley Car Club and Weardale Electric Vehicle Accelerator (WEVA)

The Derwent Valley Car Club, based in Blackhall Mill, is an independent community car club which provides access to three electric Nissan Leaf vehicles. Currently located in Blackhall Mill, with new locations coming to Rowlands Gill and Shotley Bridge in early 2022, the scheme has been running for over 8 years and has developed a sustainable model for rural community car clubs. The base at Blackhall Mill Community Centre hosts an electric charge point for the car and a public charge point. An array of PV (solar) panels offsets the electrical charging needed to run the vehicle.

DVCC offer a Voluntary Driver Scheme for members of the community who cannot drive to access services. They actively work to promote the take up of EV's with information sessions to communities locally and nationally, and to support the development of Community EV Car Clubs across the country including in Weardale.



### Light Goods Vehicles (vans)

Currently, there are over 90,000 light goods vehicles registered in the NE region.<sup>38</sup>

The light vans and fleets sector is responsible for a quarter of all urban emissions. All seven local authorities in the North East have begun the transition of their own fleets to ZEVs by introducing electric vehicles.

Some of the local authorities have incorporated an electric default policy surrounding procurement within their fleets, meaning the evaluation of ZEVs must be carried out before standard fossil fuel vehicles are considered.

Experience suggests that there are lower running costs associated with electric vans. LA's procured such vehicles through the UK Government initiative at the time, the Low Carbon Vehicle Procurement Programme (LCVPP).

As part of the fleet transition, the first full-electric refuse collection vehicles are being trialled in the region.

The private sector is transitioning their fleets to electric as well. Amazon has made a pledge to become carbon neutral by 2040 and has introduced 1800 electric delivery trucks to the UK along with UPS introducing 10,000.

Royal Mail has also announced they will be trialling two different ebuggy delivery carts as well as introducing a further 3,000 electric vans.

### Heavy Goods Vehicles (HGVs)

At the end of 2020, there were 386 battery electric technology licensed heavy goods vehicles (HGVs) and 45 vehicles using other types of non-fossil fuel in Great Britain. However, the industry is still dominated by diesel propulsion systems with 483,000 such vehicles in use. The nature of HGV operations means the exact number located in the North East is difficult to determine.

The use of electric vehicle solutions for heavy haulage operations is challenging as the weight of the battery packs required to power the vehicles makes it difficult to produce them on an economical basis. Although hydrogen power has been suggested as a possible solution, there are currently no known hydrogen vehicles in the North East, with a significant barrier being the lack of supporting infrastructure.

However, a number of authorities have stated their intention to trial vehicles when the technology and refuelling infrastructure meets a level of maturity that is appropriate for the region and Tees Valley have received government funding for a number of trials.

The emerging consensus is that small vehicles (cars and vans) will need to become electric, whereas larger vehicles may be either electric or hydrogen<sup>39</sup>.

The government has announced that new, non-zero tailpipe emission HGVs over 26 tonnes will be phased out in 2040, with those under 26 tonnes to be phased out in 2035. In response, the trade body Logistics UK has called for a nationwide network of recharging and refuelling infrastructure to be put in place, if the transition is to be achieved.

### The Second-Hand Market

As the EV market is still growing, so too is the second-hand availability of vehicles. The higher the adoption of EVs over the coming years, the better and more diverse the second-hand market will become.

However, there are some well established companies in the field that work to provide easy and affordable access to the second-hand EV market. EVs can be sourced to match a wide range of budgets and needs.

The demand for plug-in vehicles continued to grow to the end of June 2021, as buyers were keen to get access to the newest EV technology and latest model choice. In the same quarter, plug-in vehicles increased to 1.3% of the used car market in the UK.

However, the used plug-in vehicle market is not currently seeing the same development as the new plug-in vehicle market, with used sales of Q2 2021, comparable to the number of new plug-in vehicles bought in Q3 2015. This highlights the significant development of the second-hand plug-in vehicle market that is required to support second-hand vehicle purchases.

### Summary

It is clear that the transition to zero emission vehicles will impact all vehicle types and whilst significant progress has been made in the region, the numbers of such vehicles in use are still relatively low.

#### Case Study:

### The Orkney Second-hand EV market

Reflex Orkney is a £28.5 million project which aims to create an integrated energy system (IES) for Orkney. The project will provide Orkney with renewable energy generation from different sources to ensure flexibility within the network.

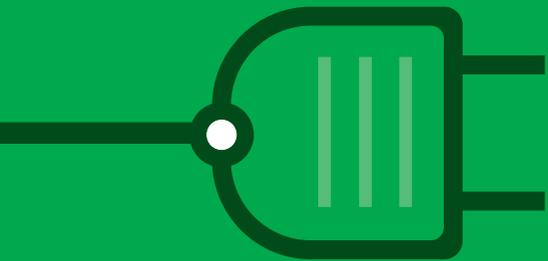
The network will connect local electricity, heating, and transport networks. The IES will maximise the potential of Orkney's significant renewable generation capabilities by storing more electricity, ensuring higher and more affordable energy services, and decreasing the reliance on imported carbon-intensive energy from the UK mainland.

In April 2021, Reflex Orkney partnered up with Eco-cars to provide the population of Orkney with an affordable option in the transition to electric vehicles.

Eco-cars have been providing the public with second-hand electric vehicles for over 20 years. Eco-cars source second-hand EVs, for a wide range of budgets, from a variety of locations across the UK and deliver directly to the users in Orkney.

As of November 2021, Orkney residents have bought over 100 second-hand EVs. Buyers can outline their requirements, pay a deposit and Eco-cars will source and deliver a car. If the car is not what the customer had hoped for, or not as described, the deposit is refundable.





## 4. Future Demand

### Level of Infrastructure required

To meet the UK’s ambitions to be Net Zero by 2050 and to phase out the sale of new petrol or diesel vehicles by 2030, it is vital that the ZEV infrastructure in the North East continues to grow at pace and this will need to be matched by appropriate capacity in the available power supply.

According to the AA<sup>40</sup>, lack of infrastructure is still considered as one of the most significant barriers to the uptake of ZEVs and so a delivery programme that not only meets current demand but encourages the transition is required.

This policy therefore forecasts the projected growth in private Zero Emission Vehicles<sup>41</sup> up to 2035 and identifies the number of public chargers required to meet future demand using recognised ratios from the International Council on Clean Transportation (ICCT).<sup>42</sup>

### EVs – Vehicles and infrastructure

The demand for electric vehicles is predicted to accelerate rapidly to 2035 according to the government’s Decarbonisation of Transport projections. An estimated 64% - 74% of cars and vans will require some form of charging infrastructure by 2035, equating to approximately 800,000 vehicles in the North East with the remaining vehicles still using petrol and diesel.

LA Area	Cars & LGVs & Motorbikes (2020) 000s	Cars & LGVs as % of UK	2025 Cars & LGVs Forecast (000s)	2030 Cars & LGVs Forecast (000s)
County Durham	282	0.78%	310	322
Northumberland	191	0.53%	210	218
Gateshead	90	0.25%	99	103
Newcastle upon Tyne	108	0.30%	119	123
North Tyneside	105	0.29%	115	120
South Tyneside	69	0.19%	75	78
Sunderland	129	0.36%	142	147
North-East total	<b>973</b>	<b>2.69%</b>	<b>1070</b>	<b>1110</b>
UK	<b>36160</b>		<b>39787</b>	<b>41286</b>

Figure 8: Projected regional breakdown of Cars and LGVs, based on the UK’s reference scenario of a Balanced Net Zero Pathway

LA Area	ZEV Register Q1 2021	% of NECA Total	% of UK Total	ZEV Forecast 2025 (Current)	ZEV Forecast 2025 (Balanced Net Zero)	ZEV Forecast 2030 (Current)	ZEV Forecast 2030 (Balanced Net Zero)
County Durham	1,177	24.70%	0.29%	17,656	40,912	51,006	118,188
Northumberland	1,178	24.72%	0.29%	17,671	40,946	51,049	118,288
Gateshead	426	8.94%	0.10%	6,390	14,807	18,461	42,777
Newcastle upon Tyne	692	14.52%	0.17%	10,381	24,053	29,988	69,487
North Tyneside	460	9.65%	0.11%	6,900	15,989	19,934	46,191
South Tyneside	350	7.34%	0.09%	5,250	12,166	15,167	35,145
Sunderland	483	10.13%	0.12%	7,246	16,789	20,931	48,500
North-east total	<b>4,766</b>	<b>100.00%</b>	<b>1.16%</b>	<b>71,495</b>	<b>165,663</b>	<b>206,538</b>	<b>478, 576</b>
UK	<b>410,573</b>						

Figure 9: Projected regional breakdown of ZEVs, based on the UK’s reference scenario of a Balanced Net Zero Pathway

## Projecting electric vehicles in our region

Figure 10 below demonstrates the current rate of electric vehicle growth in the North East and the scale of electric vehicle uptake required if the North East is to meet a “Balanced Net Zero Pathway”, the UK Transport Decarbonisation Plan’s central scenario in achieving a net zero transport system by 2050.

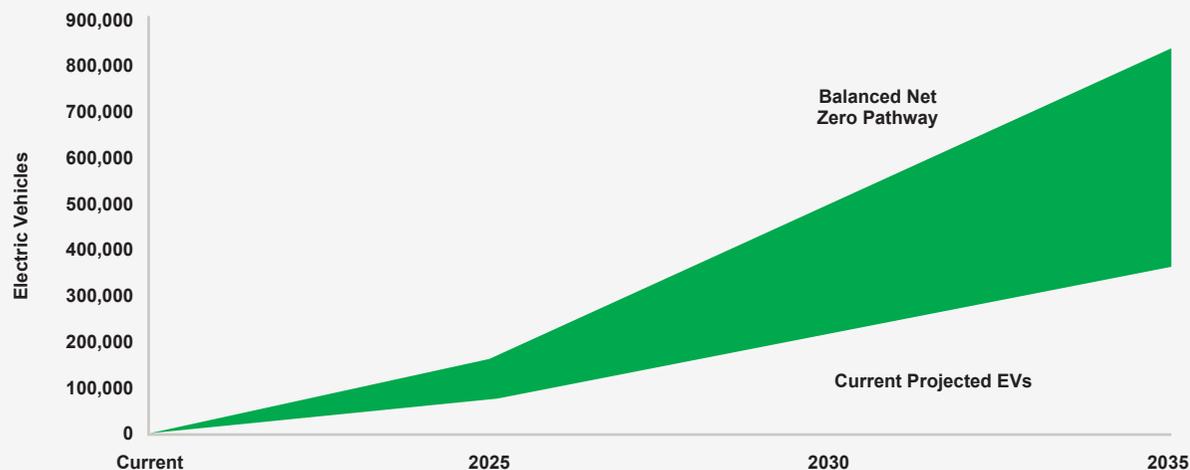
The uptake of EVs is likely to fall in the green shaded area, between the current projection figures (bottom line) and the government targets (top line).

This may be higher or lower in the range depending on a number of contributing factors:

- Improved access to shared and public transport in the region reducing private car ownership overall
- The cost of electric vehicles reaching price parity with petrol or diesel alternatives
- The provision of access to public charging infrastructure.



**Projected Electric Vehicles**

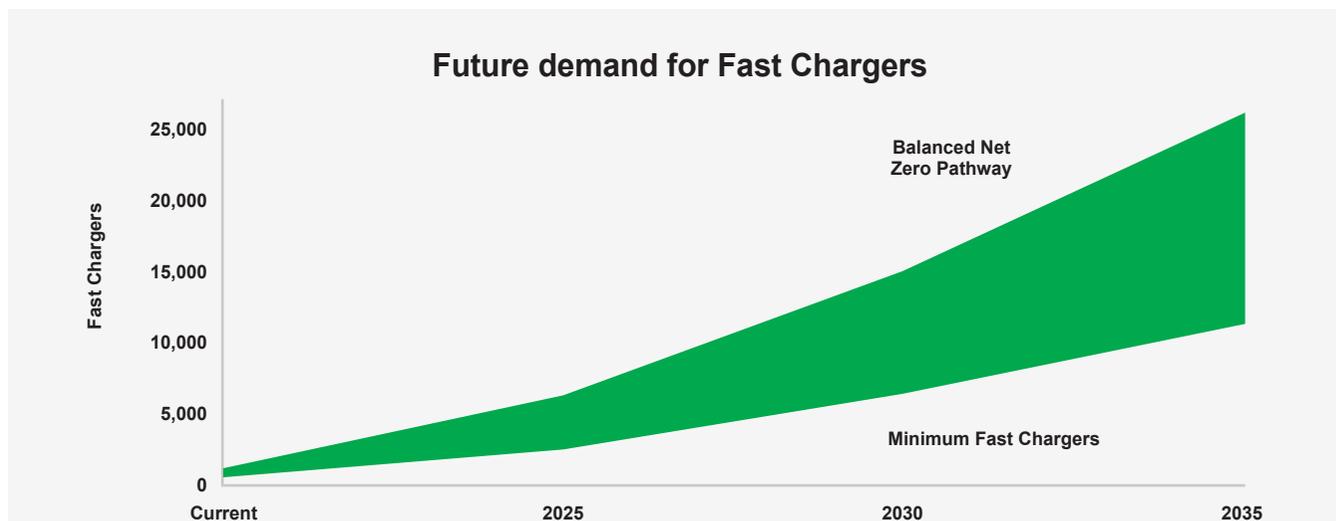


**Figure 10:** Projected electric vehicles in the North East. Current vehicle projections versus UK government’s Balanced Net Zero Pathway Scenario.

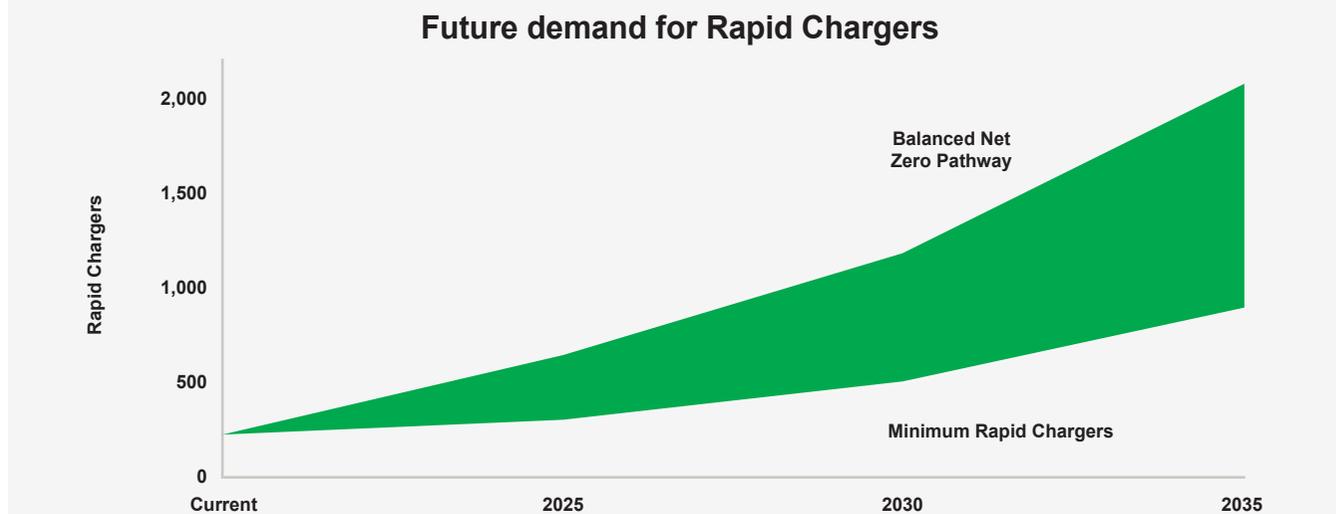
### Projecting the public infrastructure required in our region

Compared with the projected electric vehicle growth scenarios in Figure 10, and ratios determined by the ICCT, Figure 11 shows that between 11,000-26,000 fast (7kW – 22kW) public charge points are required across the region by 2035. The region therefore currently has approximately between 2-5% of the fast infrastructure required to support 2035 projected levels of demand.

Applying the same assumptions, Figure 12 shows that between 800-2,000 (50kW+) rapid public chargers are required across the region by 2035. The North East therefore currently has approximately between 12-29% of the rapid infrastructure required to support 2035 projected levels of demand.



**Figure 11:** Projected number of fast chargers required in the region. This is based on current vehicle projections versus UK government’s Balanced Net Zero Pathway Scenario.



**Figure 12:** Projected number of rapid chargers required in the region. This is based on current vehicle projections versus UK government’s Balanced Net Zero Pathway Scenario.

### Hydrogen – Vehicles and infrastructure

A planned hydrogen plant in the Tees Valley is set to commence operations in 2027 and will provide a significant boost to the ability to deploy hydrogen vehicles in the region which is extremely limited at present.

A number of vehicle manufacturers and converters have already launched hydrogen vehicles with some local authorities in the region (Gateshead and Newcastle) investigating vehicle trials.

In addition, Newcastle University is working in partnership with Northern Gas Networks and Northern Powergrid to develop the Integrated Transport Electricity Gas Research Laboratory (InTEGReL) as a test bed for future energy solutions. The laboratory will investigate the transformative benefits of coupled gas, electricity, water and transportation systems, through the integration of renewable energy, electric vehicle charging and hydrogen powered vehicle charging.

The outcomes of research projects such as InTEGReL are therefore also likely to inform the future potential of hydrogen in the region.

### Future travel scenarios

One of the challenges to achieving the decarbonisation targets across the region is the need to understand how travel patterns are likely to change depending on trends in the economy, population and society.

Transport for the North, working in partnership with Local Authorities, national delivery organisations and academic experts, have developed a set of Future Travel Scenarios for the North of England, informed by local strategies and priorities.

These Scenarios provide an understanding of what and how external factors may impact on the future of transport in the North East.

The scenarios reflect uncertainty across the following five external factors identified by the partnership:

1. Growth in the population and economy.
2. Spatial planning policy and economic distribution.
3. National policy on environment and sustainability.
4. Technological change and advancement.
5. Social and behavioural change.

This approach enables us to embed a wider range of factors into planning and analysis and to undertake more detailed assessments of what this means for our ZEV policies and targets. For example, each Future Travel Scenario will see different impacts in terms of EV uptake and use, as well as charging requirements and behaviours. Transport for the North are developing a regional Electric Vehicle Charging Infrastructure (EVCI) evidence base, which can further validate our understanding of levels of demand for future EV charging infrastructure in the North East. This will apply the different levels of likely EV uptake, and other plausible future trends in the Future Travel Scenarios, to navigate the future uncertainty of inter-dependent social, spatial and sustainability considerations impacting on car use and EV demand. This can provide a resilience and agility when forecasting the future amount, type, and location of EV charging infrastructure required to support decarbonisation and inclusivity ambitions.

The resultant four Future Travel Scenarios are summarised below:

1. **Just About Managing** – Society keeps developing broadly following existing trends, a gradual shift in lifestyles and travel, public and political behaviours do not alter, leaving major developments and change to be shaped by market forces.
2. **Prioritised Places** – Society becomes focused on quality of life, place-making, and community, rather than primarily economic growth. This scenario is led by a change in priorities, with its biggest driver being the push for a fairer redistribution of economic prosperity.
3. **Digitally Distributed** – Technology solutions are used to create connections and agglomeration across towns and cities. Led by technology and some policy influence, as we fully embrace technological change, more people will work remotely and use an accessible service-based transport system with connected and autonomous shared mobility options.

4. **Urban Zero Carbon** – Society uses policy interventions to maximise energy efficient city growth and urban densification. This scenario is led by public and political attitudes to climate action and urban place-making, with the biggest drivers being strong Government policy, resulting in rapid action on zero emission transport systems and places, with integrated planning across energy, spatial and other sectors.

Depending on whatever future scenario transpires, there will be an impact on how goods and people are transported across the region. Ultimately this will affect the number of vehicles on the roads and thus the level of infrastructure required to support them. Another key factor will be the level of success in encouraging people to switch to public transport or other sustainable modes. If this does not occur, then congestion will continue to be a challenge even if more car journeys are being made using electric vehicles.



## **5. Setting out our ZEV Policy – Key Policy Areas**

### **Zero Emission Vehicles have a key role to play in enabling us to achieve our objectives of:**

- Carbon neutral North East
- Overcome inequality and grow our economy
- Healthier North East
- Appealing sustainable transport choices
- Safe, secure network.

Having detailed our broad approach to encouraging the use of ZEVs rather than petrol or diesel cars/vans, this section of the policy outlines a set of visionary policy statements which outline where we want to be by 2035, showing how we will address the four key themes raised by members of the public and businesses when considering ZEVs:

- Accessibility of infrastructure
- Range anxiety
- Environmental concerns
- Cost of vehicles and charging.

### **Infrastructure**

As the research outlined in chapter 3 has shown, people have concerns over the accessibility of ZEV charging infrastructure and to encourage and accelerate the transition away from petrol and diesel vehicles to zero emission vehicles it is vital that we work to overcome these challenges and improve the accessibility and availability of infrastructure.

Chapter 4 (Future Demand) estimates that, to meet the projected demand for the region, as many as 28,000 public electric vehicle charge points may be required up to 2035 and these must be installed in locations which best support the uptake of zero emission vehicles.

### **Identifying the levels of public charging infrastructure required**

We will monitor forecast growth in ZEV uptake and identify the levels of infrastructure required and the most appropriate locations for it, in order to support this growth.

We will ensure that charge points are planned and placed in locations which enables everyone in the North East to access them, including those who live in remote rural areas, those who do not have off street parking, areas where there is high demand for car clubs and taxis, and residents of deprived urban areas where car ownership is low, and costs may prevent homeowners installing a home charging facility.

Detailed interventions and targets will be set out in our upcoming Roads, Infrastructure and ZEV Strategy due to be published in 2022/23.

This approach may therefore mean that sites are prioritised according to social need rather than commercial viability. We will adopt a similar stance for other alternative fuels when they come to the market.

Usage will be monitored at regular intervals by Transport North East and relevant local authorities to enable us to identify areas where charge points are underutilised and areas

where demand creates a need to install further infrastructure. This will enable us to take the necessary strategic action to ensure the network continues to meet the needs of all users.

We have identified forecasts for the number of charge points in the region to reflect and also to encourage rising ZEV uptake. These figures are informed by guidance from the International Council on Clean Transportation (ICCT) who produced a working paper in 2020 that aimed to quantify the EV charging infrastructure gap, specifically in the United Kingdom. The report indicated the following ratios of chargers to vehicles.

It should be noted that, as the average range of electric vehicles increases over the coming years (decreasing range anxiety), together

with charging speed improvements and higher utilisation of chargers, the ratios for calculating required infrastructure identified by the ICCT decrease.

The maximum distances identified are high-level estimates on the level of infrastructure that may be required in the future, based on the current average distance and maximum distance between chargers in the North East region.

These distances will be challenging to achieve across the whole region, with remote rural sparsely populated locations such as Northumberland and Durham presenting particular issues. These estimates have been established to support the region in achieving widespread uptake of ZEVs.



Region and LA	2025	2030
Fast Charge points to ULEVs	1:12	1:16
Rapid Charge points to BEVs	1:167	1:300

### Ensuring the transport network is integrated

Whilst we recognise that it will not always be possible for people to make their entire journey by public transport, walking or cycling, we want to encourage car users to travel sustainably for at least part of their trip where possible. To achieve this, we will need to ensure that, where feasible, ZEV infrastructure is available at transport interchanges, park and ride car parks, railway stations and bus and Metro stations. The provision of ZEV infrastructure in these locations will enable ZEV use to be better integrated with other forms of transport so that people can travel by car/van for part of their journey and then continue by public transport.



#### Case Study:

### Multi Modal Hub, Dundee

Queen Street Multi Modal Hub in Broughty Ferry, Dundee brings together a selection of ZEV technologies in one place, providing users with a range of sustainable options:

- A charging hub comprising 6 rapid chargers and 4 fast chargers
- Charge point with advertising or information screen
- A solar array, delivering local power generation.
- A shared electric bike docking station, with easy access to a cycle path to city centre
- A shared electric car club vehicle
- It is next to Broughty Ferry train station with direct trains to Dundee City Centre
- It is on main bus routes to Dundee City Centre running hybrid buses.
- Parking for users to allow switch from personal vehicles.

Funded through the UK government's Go Ultra Low Cities Scheme and Go Ultra Low Taxi Scheme, the hub cost £850,000 to design, build and install the infrastructure.

By delivering a number of sustainable transport options and ZEVs in a single location it is hoped to provide people with the confidence to make the right choice at affordable prices. The hub has also been 'future proofed' meaning that the city can quickly deploy more charging infrastructure when and if additional demand requires.

Between July 2020-July 2021, the hub experienced 11,000 charging sessions, the equivalent to approximately 30 charging sessions per day, placing the hub amongst one of the UK's most popular EV charging locations.

It is also estimated that over 65% of usage at the Queen Street hub is from commercial organisations. Taxi companies in particular report that this infrastructure was crucial to their willingness to switch to electric vehicles.

### Infrastructure policy statements

As described earlier in the document (pg. 40), the number of required chargers have been derived using recognised ratios from the International Council on Clean Transportation (ICCT). These ratios have been determined based on projected growth of electric vehicles, and factor in developments and an increase in vehicle battery sizes, therefore reducing the overall need for a charger. These forecasts represent the scale of infrastructure needed to support a growing uptake of electric vehicles. They are purposely set to be ambitious and are based on recognised ratios that have considered the extent of public charging infrastructure to meet the needs of the ZEVs on our roads in the future. However, these ambitions will have to be closely reviewed and assessed on a regular basis to fit with the changing technology landscape.

### In some scenarios up to 28,000 charge points may be required by 2035 to meet demand from users.

- We will prioritise the remaining 18 priority sites from our regional enabling study and continue to seek existing and new funding opportunities to take these forward.
  - We will prioritise the deployment of charging in remote and rural areas to tackle challenges with social isolation, and transport poverty.
  - We will prioritise the remaining priority sites from our regional enabling study (Enabling Electric Vehicle Charging in North East England 2021 to 2025) and continue to seek funding opportunities to take these and future sites forward.
  - We will refresh our regional enabling study on an annual basis ensuring that the priority sites continue to be the most appropriate locations.
  - We will seek opportunities to work with the private sector, with the aim of coordinating the installation of ZEV infrastructure in the region, ensuring that future demand is able to be met.
- We will take a flexible approach to filling the infrastructure gaps and monitor the deployment of public charge points across the region, reporting on progress.
  - We will seek to enter into a strategic partnership with Northern Powergrid to make sure that the power network can support the installation of new EV charging infrastructure, both in terms of substation capacity and overall demand on the network.
  - We will work with partners to review and coordinate the deployment of charging in remote rural areas and areas of high social deprivation to ensure challenges with social isolation and transport poverty are tackled equitably.
  - We will work with partners where possible on charging specifications to ensure minimum requirements and robust maintenance agreements are standard across the region, ensuring a more consistent and positive user experience.
  - We will ensure that the government's accessibility standards are implemented regionally in future procurement exercises and infrastructure projects.

- We will continue to grow partnerships across the region, working with key regional site owners to understand new opportunities for public infrastructure.
- We will continue to take advantage of our region's expertise and explore opportunities to test bed innovative clean energy solutions.
- We will continue to seek and apply for funding to install and maintain ZEV chargers across the region, especially in commercially-unviable locations, for use by the public and the taxi and private hire industry.
- We will work closely with the R&D sector to exploit hydrogen technology for vehicle propulsion and to deploy at scale if required, particularly as a means of decarbonising Heavy Goods Vehicle fleets.

### Case Study:

#### Milton Keynes Electric Vehicle Experience Centre

Opened in 2017, the Milton Keynes EV Experience Centre is the UK's first brand neutral centre for electric and plug-in vehicles. Not only does the centre sell cars, but they offer experiences and free advice to visitors looking to switch and needing help to choose the right car for them. The three main aims of the experience centre are:

- **Education** – offer expert knowledge and end-to-end advice; from questions about cost to technical information on batteries and charging.
- **Experience** – to give visitors a real experience of the vehicles by offering short-term and long-term test drives.
- **Efficiency** – to guide visitors with easy to understand information.

So far, over 100,000 visitors have taken advantage of the centre to find out more about electric cars.

### People

Provision of accessible and reliable charging infrastructure needs to be supported by appropriate information for drivers, to encourage behavioural change and reassure people who may have doubts about making the transition.

### Increasing knowledge of ZEVs

It is important that the lifetime cost and environmental benefits of using ZEVs are clearly and consistently delivered across the region to address the user concerns set out in chapter 3, providing people with practical information about where they can find charge points, how to use a charger, and how long each type of charger takes to charge a vehicle. The aim is that everyone who uses, or is planning to buy, a ZEV should be confident that it meets their needs and that the necessary charging infrastructure is available, in the right places, at the right times.

### User Engagement

To ensure that the needs of the end user are placed at the heart of the future transition to ZEVs, we need to continue to undertake engagement activities across the region and to understand the key strategic sites for installation of infrastructure.

### Creating a User-focused Network

Chargers across the region are hosted by a range of different suppliers, offering different mechanisms for payment, and operating with different standards and contractual agreements. This variable level of provision is reflected in the North East LEP area EV charging behaviour study, which produced an average satisfaction score of 3 out of 10 for the existing public charging network<sup>44</sup>.

If a critical mass of users are to make the switch to ZEVs, it is important that we work together with our local authorities and other partners to offer a consistent, fair and positive charging experience. Developing an agreed approach and set of minimum standards for the charge points, together with a requirement for public infrastructure tariffs to be within the market rate, will provide users with a greater level of confidence in the network which they are using.

We will procure a supplier to manage any charge points that we own and they will be required to meet a set of minimum standards, ensuring that customers receive a consistent and positive experience.

### People policy statements

- We will embrace current work being undertaken on accessible and inclusivity standards for infrastructure and support our partners to ensure people with mobility/ accessibility impairments are able to access and use charging infrastructure.
- We will engage with the people who live, work and visit the North East to understand their current and future infrastructure requirements to enable their transition to ZEVs.
- We will continue to make use of the Go Ultra Low North East brand, as a way to market and promote activities to support the uptake of electric vehicles.
- We will continue to seek funding to install charge points for shared car club projects, particularly in rural areas and areas of high social deprivation, to help tackle challenges with social isolation and transport poverty.
- We will support a region-wide discussion on the approach to setting tariffs in order to deliver the best possible customer experience.
- We will procure a supplier to manage any charge points that are within our ownership and they will be required to meet a set of minimum standards including maintenance and quality.

### Vehicles

An increase in the number of zero emission vehicles licenced in the North East is the key aim of this policy and will help us to achieve our Transport Plan objectives. However, the increase in ZEV uptake must be directed at journeys that cannot be made by walking, cycling and public transport.

### Monitoring Uptake

We will monitor the uptake of ZEVs in the region, in order to understand whether the installation of charging infrastructure and behaviour change campaigns set out in this policy are having an impact on the migration to ZEVs.

However, due to the pace of technological developments and the range of possible future travel scenarios, as defined by TfN, we anticipate that there will be changes to our projected charging infrastructure requirements. Potential improvements to battery life, charging speeds and the rate of uptake of ZEVs would alter the number of charge points needed at each milestone outlined in our policy. Therefore, we will monitor developments in ZEV technology and uptake on a regular basis and review the impacted change on projections. In turn we will review and

update our policy and accompanying policy statements annually to ensure they remain current and align with the latest forecasts.

Therefore, we will monitor developments in ZEV technology and uptake on a regular basis and review the impacted change on projections. In turn we will review and update our policy statements as appropriate to ensure they remain current and align with the latest forecasts.

### North East as a leader in ZEV infrastructure

As outlined in chapter 2, the North East has an established reputation as a UK and European leader for zero emission vehicles and associated infrastructure. We want to continue to build on the North East's record as a leader in this sector and seek opportunities to strengthen our knowledge and share our expertise to generate a shift to ZEVs.

### Monitoring development of other clean fuel alternatives

We need to continue to explore new technologies to decarbonise transport and benefit the environment and not focus solely on electricity. Therefore, whilst battery electric vehicles and hydrogen are emerging as the

key technologies in the decarbonisation of transport, other zero emission fuel alternative vehicles may be developed in the coming years, so we must be well-positioned to support any emerging breakthroughs.

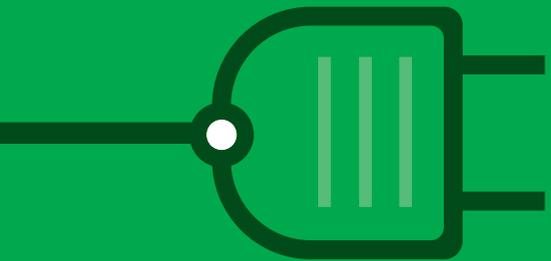
### Vehicle policy statements

- We will monitor the uptake in zero emission vehicles across the region and report on progress against projected growth.
- We must strengthen use of cleaner, greener cars and vans.
- We will continue to seek funding opportunities to deliver zero emission buses.

### Summary

Our visionary policy statements show where we want ZEV public infrastructure in the North East to be by 2035.

The table in Appendix 1 shows the relationship between our policy statements, research themes and our Transport Plan objectives.



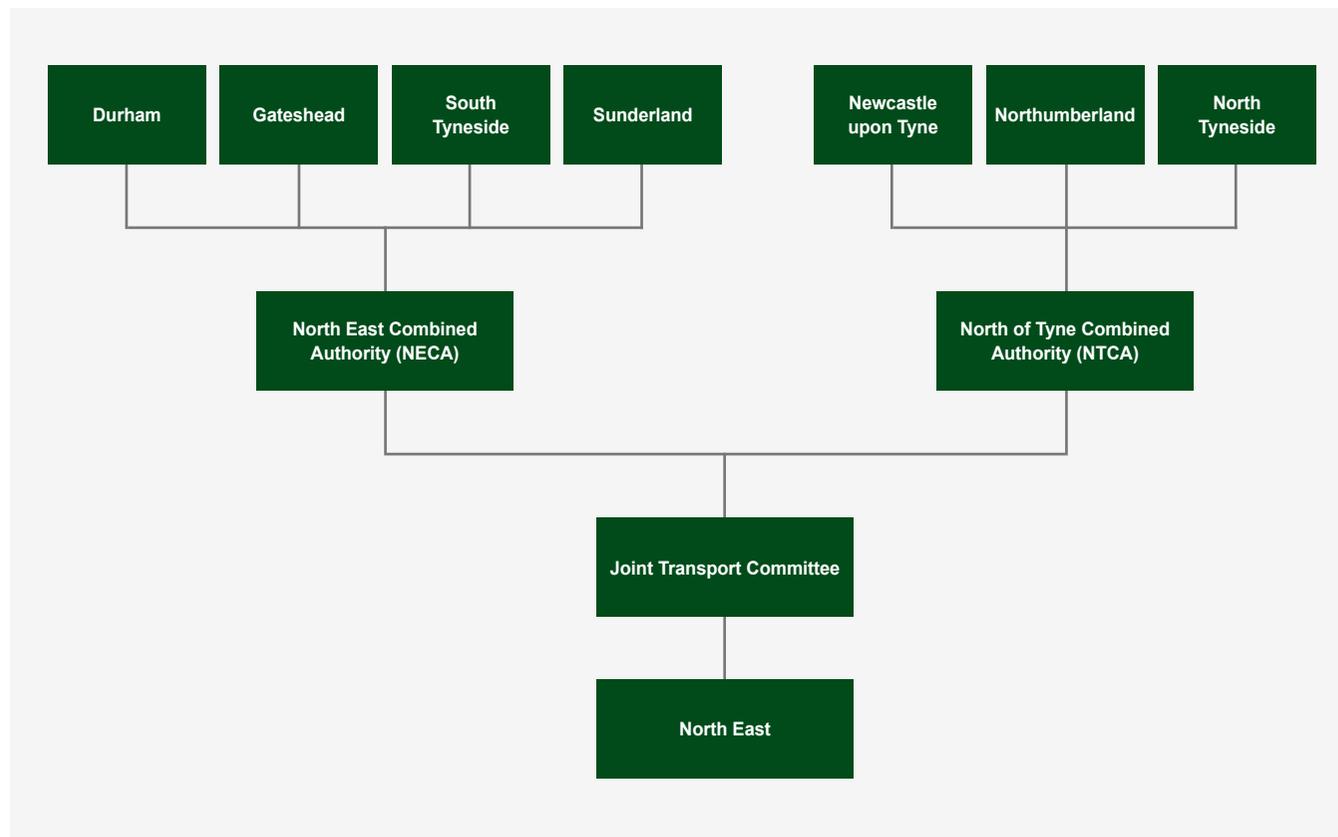
## **6. Delivering the North East Zero Emission Vehicle Policy**

## Our Zero Emission Vehicle Policy will deliver environmental and economic benefits to the North East, by:

- seeking to expand the region's Electric Vehicle charging network, ensuring it is accessible to all users and meets the needs of the whole region
- providing information and reassurance to address concerns that deter people from switching to ZEVs
- investigating all future ZEV technologies
- providing strategic guidance to enable an increased uptake of all ZEVs
- helping to make the case to government for additional funding in ZEV infrastructure.

Our policy statements set out how we will achieve these goals and the successful projects detailed earlier in this policy demonstrate our track record of effective partnership working with local authorities, energy supply providers and charge point providers. Strong partnerships will be fundamental as we implement our policy statements, helping to deliver the Transport Plan vision and objectives and tackling the climate emergencies declared across the region.

The figure below provides an understanding of how the partner organisations come together to deliver a regional approach to transport.



**The policy will be reviewed annually in quarter four of each financial year.**

### Including ZEVs in all policy areas

If we are to meet the public infrastructure forecasts identified within this policy and the exacting decarbonisation targets set by the UK government, we must also include ZEVs and the enabling infrastructure in a range of policy areas where appropriate.

#### These key policy areas include:

- **Planning** – Following public consultation, the government announced in November 2021 that all new buildings in England will be required to install electric vehicle charge points from 2022.

The draft “Technical Guidance for Building Regulations Requirements for EV Charging” stipulates that, for buildings other than dwellings with 11 or more parking spaces, 1 space in every 11 should have active charging infrastructure. In respect of new build residential properties, charging infrastructure must be part of the development.

The new regulations are expected to result in the installation of 145,000 extra charge points across England.

- **Energy** – The switch to ZEVs offers the North East significant economic, social and environmental opportunities through the delivery of clean, secure and accessible

energy. This can include onsite solar generation and storage at charge points or the wider integration with large scale green energy production. By using locally produced renewable energy to power future battery electric and hydrogen vehicles, we can bring added value to both transport and energy projects, reflecting the policy statement that “we will continue to take advantage of our region’s expertise and explore opportunities to test bed innovative clean energy solutions.”

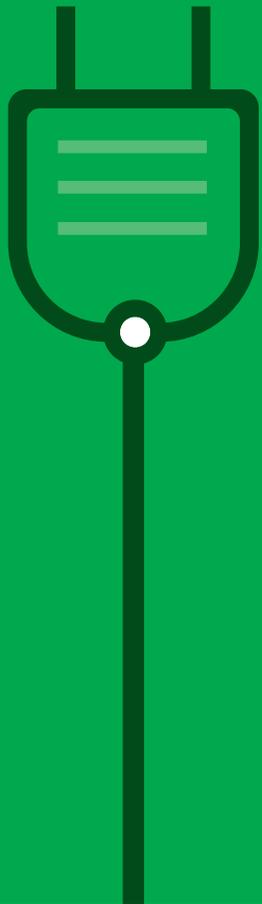
- **Fleets** – Commercial vehicles account for approximately 13% of cars and light good vehicles on the roads in Great Britain. It is important to understand that these fleets do not recognise local or regional boundaries and that infrastructure projects should service both urban and rural communities. By co-ordinating a regional approach to infrastructure provision, as set out in chapter 5, we will ensure that fleets have access to a comprehensive and well-planned network that makes the best use of funding available.
- **Procurement** – To enable the uptake of ZEVs required to meet the regions’ decarbonisation targets, it is important that the infrastructure is of a consistently high standard and that as far as possible the user has a seamless experience across different charge points. This will be achieved

by working collaboratively with our local authorities, to co-ordinate where possible the specification of future charge points with the user experience in mind.

Several of our local authorities, Nexus and TNE are working with the North East Procurement Organisation (NEPO) to bring forward a concession agreement to enable long-term investment in the regional electric vehicle charging infrastructure (EVCI). This investment is needed to upgrade, operate and maintain the current public authority owned network and to resource its expansion in order to secure a sustainable long-term future which aligns to our future commitments. This concession agreement can also be drawn upon by other public sector bodies.

This platform for delivery will ensure that through a clear arrangement with a concession operator, the network will be of a good standard with opportunities for operator led investment. This will be topped up by public sector grants when they become available to plug the gaps in the network when they may not be commercially viable.

By working in partnership with NEPO and local authorities, TNE will provide a key facilitation and coordination role to ensure that the network continues to meet future demand and that regional standards are incorporated.



## 7. Next Steps (5 Year Focus)

### Blueprint to deliver infrastructure

In 2020, Transport North East commissioned a blueprint to deliver EV infrastructure. The study identified a substantial list of priority sites that can be taken forward as demand requires and funding opportunities arise. Delivery of these sites for ZEV charging will form a key step in ensuring the network in the region meets the future needs of those that live work and visit the region. Where funding allows, the study will be refreshed on an annual basis to ensure that the sites identified continue to be the most appropriate.

We will seek available funding opportunities and will then work with partners to deliver the key sites and expand the network to ensure that both urban and rural communities are covered. This work will complement the wider infrastructure projects being delivered by local authorities and agencies such as National Highways in delivering a network in the North East that supports the next stage of transition to electric vehicles.

The identification of regional funding opportunities and possible trials of alternative fuelled vehicles will also be a key focus, to maintain momentum and create a critical mass of projects that will deliver significant regional benefits.

### Roads, Infrastructure and ZEV Strategy

The forthcoming Roads, Infrastructure and ZEV Strategy set to be launched in 2022/23 will support the ZEV Policy by setting out in more detail how sustainable, low carbon travel will be supported around and through the region, including rural areas, making alternative fuels a realistic and attractive option.

The Strategy will include a full methodology that indicates the amount of charging infrastructure the region may need to support demand.

The Strategy will include plans that place ZEVs at the heart of future roads and infrastructure projects by identifying key projects and programmes required to deliver our vision and objectives.

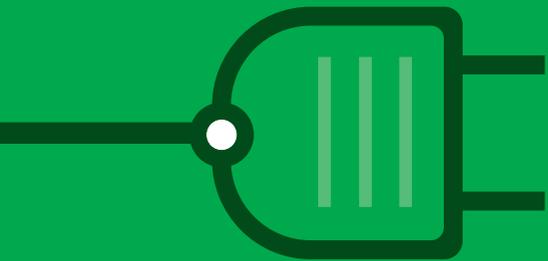
### Making the most of our region as a leading innovation cluster

As the market for ZEVs is still in its early stages there is significant scope for innovation and development which require proactive cities and regions to test and gather key data and learnings to share.

Our region has a wide range of innovation assets including universities, catapults and national centres of excellence, covering digital, energy, and advanced manufacturing.

These regional assets ensure that we are in the best possible position to test and monitor a wide range of ZEV related projects, which can then be utilised to assist in future roll out and decision making in the region and across the country as a whole.





## 8. Conclusion

In this policy, we have benchmarked the region's current position in terms of ZEV take-up, outlined the growth that will be required to meet our decarbonisation targets and listed a set of clear policy statements that set out how we aim to deliver that growth.

As the base for Europe's most successful EV (the Nissan Leaf) and the continent's first giga battery manufacturing facility, we have a track record of achievement, buttressed by our successful Go Ultra Low programme and the recent rollout of new electric buses.

We are a global centre in the clean energy agenda and by meeting public demand for a comprehensive and accessible charging network, we can take the next step forward, helping people to make the right travel choice and realising the objectives of the North East Transport Plan.

We do not want to replace trips that are currently being made using sustainable forms of transport and want to encourage drivers to switch to public transport as much as possible; however, many journeys will continue to be made by car and our aim is to encourage existing petrol and diesel car/van users in the transition to ZEVs.

The timescales are demanding but our authorities and businesses have already shown through the GULNE project and other initiatives that they can rise to the challenge and, with 30 million petrol and diesel cars in the UK, a successful transition not only means cleaner air and a better environment but also offers massive business opportunities for our automotive sector. Zero emissions need not mean zero ambitions, instead they can help deliver the green recovery we all wish to see.



## **Appendix 1 – how our policy statements, research themes and Transport Plan objectives link together**

Policy Statement	Feedback it addresses	Objectives it will achieve
<b>Infrastructure</b>		
<ul style="list-style-type: none"> <li>We will prioritise the remaining priority sites from our regional enabling study (Enabling Electric Vehicle Charging in North East England 2021 to 2025) and continue to seek existing and new funding opportunities to take these forwards.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will refresh our regional enabling study on an annual basis ensuring that the priority sites continue to be the most appropriate locations.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will seek opportunities to work with the private sector, with the aim of coordinating the installation of ZEV infrastructure in the region, ensuring that future demand is able to be met.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Appealing sustainable transport choices</li> </ul>
<ul style="list-style-type: none"> <li>We will take a flexible approach to filling the infrastructure gaps and monitor the deployment of public charge points across the region, reporting on progress.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> <li>Environmental concerns</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will seek to enter into a strategic partnership with Northern Powergrid to make sure that the power network can support the installation of new EV charging infrastructure, both in terms of substation capacity and overall demand on the network.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> <li>Environmental concerns</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will work with partners to review and coordinate the deployment of charging in remote rural areas and areas of high social deprivation to ensure challenges with social isolation and transport poverty are tackled equitably.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> <li>Environmental concerns</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Appealing sustainable transport choices</li> </ul>

Policy Statement	Feedback it addresses	Objectives it will achieve
<b>Infrastructure continued</b>		
<ul style="list-style-type: none"> <li>We will work with partners where possible on charging specifications to ensure minimum requirements and robust maintenance agreements are standard across the region, ensuring a more consistent and positive user experience.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Appealing sustainable transport choices</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will ensure that the government’s accessibility standards are implemented regionally in future procurement exercises and infrastructure projects.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Appealing sustainable transport choices</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will continue to grow partnerships across the region, working with key regional site owners and local authorities to understand new opportunities for public infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range Anxiety</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Appealing sustainable transport choices</li> <li>Safe, secure Network</li> </ul>
<ul style="list-style-type: none"> <li>We will continue to take advantage of our region’s expertise and explore opportunities to test bed innovative clean energy solutions</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> <li>Environmental concerns</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Appealing sustainable transport choices</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will continue to seek and apply for funding to install and maintain ZEV chargers across the region, especially in commercially-unviable locations, for use by the public and the taxi and private hire industry.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> <li>Environmental concerns</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Appealing sustainable transport choices</li> </ul>
<ul style="list-style-type: none"> <li>We will work closely with the R&amp;D sector to exploit hydrogen technology for vehicle propulsion and to deploy at scale if required, particularly as a means of decarbonising Heavy Goods Vehicle fleets.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Environmental concerns</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Overcome inequality and grow our economy</li> <li>Healthier North East</li> <li>Safe, secure network</li> </ul>

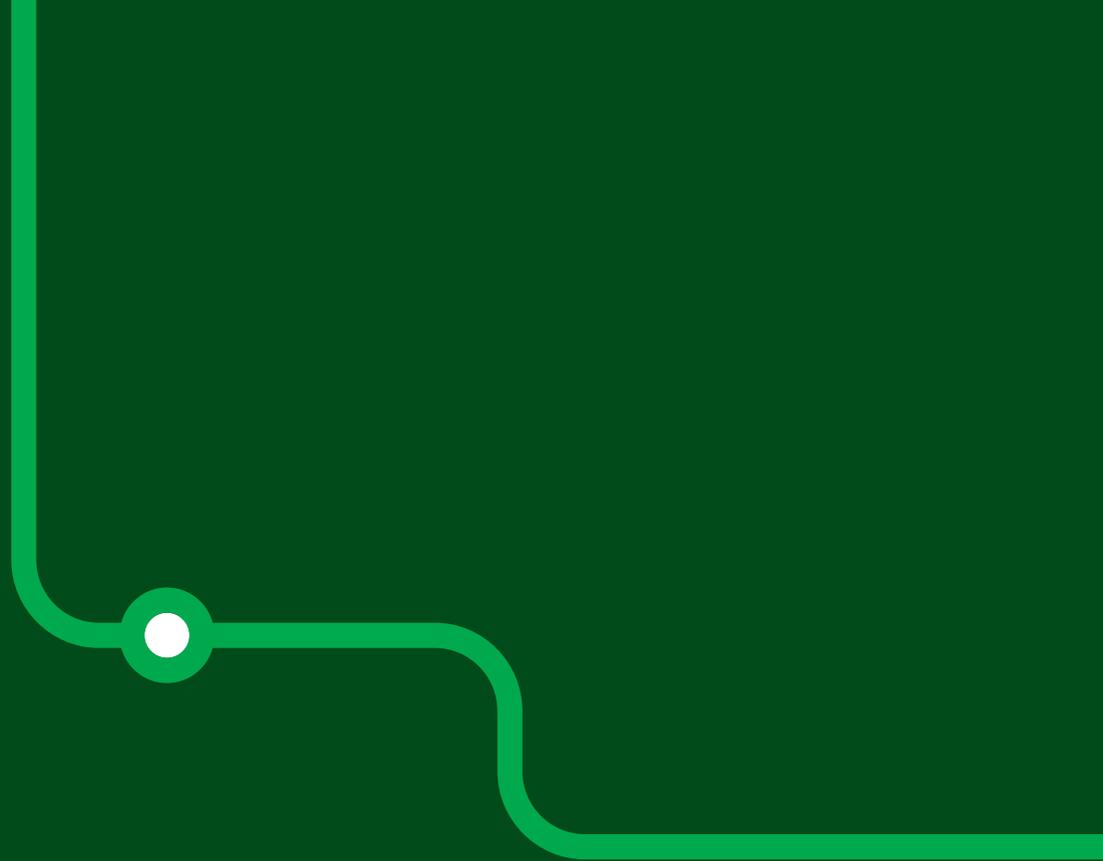
Policy Statement	Feedback it addresses	Objectives it will achieve
<b>People</b>		
<ul style="list-style-type: none"> <li>We will embrace current work being undertaken on accessible and inclusivity standards for infrastructure and support our partners to ensure people with mobility/accessibility impairments are able to access and use charging infrastructure.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Overcome inequality and grow our economy</li> <li>Healthier North East</li> <li>Appealing sustainable transport choices</li> </ul>
<ul style="list-style-type: none"> <li>We will engage with the people who live, work and visit the North East to understand their current and future infrastructure requirements to enable their transition to ZEVs.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will continue to make use of the Go Ultra Low North East brand, as a way to market and promote activities to support the uptake of electric vehicles.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> <li>Environmental concerns</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Appealing sustainable transport choices</li> <li>Healthier North East</li> </ul>
<ul style="list-style-type: none"> <li>We will continue to seek funding to install charge points for shared car club projects, particularly in rural areas and areas of high social deprivation, to help tackle challenges with social isolation and transport poverty.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Range anxiety</li> <li>Environmental concerns</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Overcome inequality and grow our economy</li> <li>Healthier North East</li> <li>Appealing sustainable transport choices</li> <li>Safe, secure network</li> </ul>
<ul style="list-style-type: none"> <li>We will support a region-wide discussion on the approach to setting tariffs to deliver the best possible customer experience.</li> </ul>	<ul style="list-style-type: none"> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Overcome inequality and grow our economy</li> <li>Appealing sustainable transport choices.</li> </ul>
<ul style="list-style-type: none"> <li>We will procure a supplier to manage any charge points that are within our ownership and they will be required to meet a set of minimum standards including maintenance and quality.</li> </ul>	<ul style="list-style-type: none"> <li>Accessibility of infrastructure</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Overcome equality and grow our economy</li> <li>Appealing sustainable transport choices</li> </ul>

Policy Statement	Feedback it addresses	Objectives it will achieve
<b>Vehicles</b>		
<ul style="list-style-type: none"> <li>We will monitor the uptake in zero emission vehicles across the region and report on progress against projected growth.</li> </ul>	<ul style="list-style-type: none"> <li>Environmental concerns</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Overcome inequality and grow our economy</li> <li>Healthier North East</li> <li>Appealing sustainable transport choices</li> </ul>
<ul style="list-style-type: none"> <li>We must strengthen use of cleaner, greener cars and vans.</li> </ul>	<ul style="list-style-type: none"> <li>Environmental concerns</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Healthier North East</li> <li>Appealing sustainable transport choices</li> </ul>
<ul style="list-style-type: none"> <li>We will continue to seek funding opportunities to deliver zero emission buses.</li> </ul>	<ul style="list-style-type: none"> <li>Range anxiety</li> <li>Environmental concerns</li> <li>Cost of vehicles and charging</li> </ul>	<ul style="list-style-type: none"> <li>Carbon neutral North East</li> <li>Healthier North East</li> <li>Appealing sustainable transport choices</li> </ul>

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15. Fleet Revolution was a business-focused programme delivered as part of the regional Go Ultra Low project
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30. Source: Ibid
31. Source: North East LEP area EV Charging Behaviour (September 2020)
32. Ibid
33. Ibid
34. Note: Vehicles are allocated to a local authority according to the postcode of the registered keeper. This is the keeper's address for privately owned vehicles or the company's registered address for company owned vehicles. The address does not necessarily reflect where the vehicle is located. This is especially true for large fleets kept by companies involved with vehicle management, leasing or rentals. Significant changes in the number of vehicles from year to year can often occur when these companies change their registered address.

35. Note: Vehicles are allocated to a local authority according to the postcode of the registered keeper. This is the keeper's address for privately owned vehicles or the company's registered address for company owned vehicles. The address does not necessarily reflect where the vehicle is located. This is especially true for large fleets kept by companies involved with vehicle management, leasing or rentals. Significant changes in the number of vehicles from year to year can often occur when these companies change their registered address.
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