LEADING THE CHARGE:

THE WEST OF ENGLAND'S ELECTRIC VEHICLE CHARGING ACTION PLAN

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CONTENTS

INTRODUCTION

The West of England has an ambitious target of 'net zero' carbon emissions by 2030.

With transport being responsible for the biggest contribution of greenhouse gas emissions in the region, a shift away from polluting vehicles is critical in helping us to bring our carbon emissions down.

Investment in our walking, cycling and public transport networks will be vital in making travel by these modes the preferred and natural choice for many everyday journeys. However, electric vehicles will form a key part of the solution to help the West of England get its carbon emissions down for people who cannot readily switch to walking, cycling and public transport.

This means that there is an urgent need to speed up the delivery of new charge points that people will need to make the switch to electric vehicles.

At the same time, if we are serious about delivering the new chargers people need at pace, then the Combined Authority will need to seek the additional powers it requires to make sure it can play a leading role in the shift to electric vehicles and deliver new chargers in an efficient and effective way.

Our Electric Vehicle Charging Action Plan supports our Joint Local Transport Plan and the West of England's Climate and Ecological Strategy and Action Plan. Both of these documents set out the urgent need to reduce transport emissions and mitigate the effects of poor air quality on public health and the environment.

Our Action Plan represents a vital step in reducing carbon emissions of journeys across the West of England.

WHY DO WE NEED AN ELECTRIC VEHICLE CHARGING ACTION PLAN?

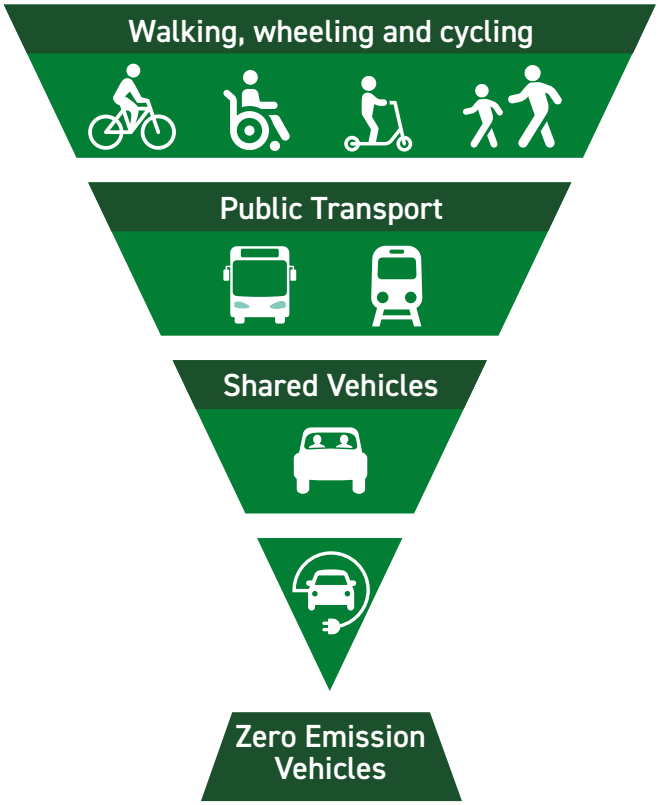
Transport is the largest contributor to UK domestic greenhouse gas emissions, with 91% of these emissions coming from road vehicles. Even as other sectors of the economy have made carbon reductions, emissions from road transport have remained broadly flat over the past 30 years. In the West of England, 44% of total local carbon emissions are from transport (approximately 1.9 tonnes of carbon per person).

In 2021, the Department for Transport outlined the government's approach to addressing this problem, with the sale of all new petrol and diesel cars to end by 2030 and all new cars and vans to be zero-emission at the tailpipe by 2035.

"Taking Charge", the government's strategy for electric vehicles, sets out the need for an additional 300,000 electric vehicle charge points by 2030. It places a duty on local authorities to produce a plan to show how the changing needs of the region will be met and to develop ambitious proposals to ensure that the infrastructure rolled out will meet the forecasted demand.

It also means we need to consider how these proposals will support wider transport priorities, such as the need to improve air quality and encourage more people to walk, cycle and use public transport.

In September 2023, the government changed its ban on the sale of new petrol and diesel cars and vans from 2030 to 2035. However, its Zero Emission Vehicle (ZEV) mandate still means that 80% of new cars and 70% new vans sold by 2030 are expected to be zero emission at tailpipe.



Taking Charge and its implications for the West of England:

- Requirement to have an Electric Vehicle Infrastructure Plan or Strategy in place, which is aligned with other local transport policies.
- Charge points delivered with public funding must be inclusively designed and aligned with with accessibility guidelines, such as BSI PAS 1899:2022.
- Local authorities have a key role to play in planning and delivering on-street charging infrastructure.
- Payment Types: the requirement for contactless payment.

NATIONAL, REGIONAL, AND LOCAL TRANSPORT POLICIES AT A GLANCE

The transition to electric vehicles is closely aligned with national and sub-regional ambitions to decarbonise the UK economy and improve air quality, and is strongly supported by government policy and investment.

Relevant policies include:

National Policy	West of England Policy	Local Authority
• Taking Charge: The Electric Vehicle Infrastructure Strategy, Department for Transport (March 2022) • Net Zero Strategy: Build Back Greener, Department for Transport (October 2021) • Decarbonising Transport, Department for Transport (July 2021) • Clean Air Strategy, Department for Environment, Food and Rural Affairs (January 2019)	• West of England Climate and Ecological Strategy and Action Plan (April 2022) • Joint Local Transport Plan 4 (JLTP4) (March 2020) • West of England Local Industrial Strategy (July 2019)	• Climate Emergency Action Plan, Bath and North East Somerset Council (2020) • Mayor's Climate Emergency Action Plan, Bristol City Council (2022) • One City Climate Strategy, Bristol City Council (2020) • Climate Emergency Strategy, South Gloucestershire Council (2020)

A summary of these documents is set out in Appendix A.

THE WEST OF ENGLAND'S TRANSPORT CHALLENGES

Climate and Ecological Strategy and Action Plan

In 2022, we published our first Climate and Ecological Strategy and Action Plan. The Strategy and Action Plan is set in the context of the West of England's net zero carbon by 2030 ambition and provides a route map between now and 2030.

Emissions from transport are highlighted as one of the largest contributors to greenhouse gas and carbon dioxide emissions in the West of England.

THE TRANSPORT SECTOR IS RESPONSIBLE FOR 44% OF THE REGION'S GREENHOUSE GAS EMISSIONS.

The Strategy and Action Plan is clear that, even with planned and committed transport projects being delivered, significant intervention is needed to bring down the region's transport emissions. A shift to electric vehicles has a key role to play in decarbonising transport in the region, although this will not be enough by itself.

A 40% reduction in car mileage, reducing the number of car trips and their length, will also be needed to meet this ambition.

THIS MEANS THAT STEPS TO GET PEOPLE WALKING, WHEELING AND USING PUBLIC TRANSPORT AS MUCH AS POSSIBLE WILL BE NEEDED, WITH ELECTRIC VEHICLES PLAYING A ROLE FOR THOSE PEOPLE WHO STILL NEED TO DRIVE.

Joint Local Transport Plan 4

The West of England faces a number of significant transport challenges, summarised in the region's Joint Local Transport Plan 4, including:

Unless we intervene now, these challenges will only become harder to overcome with housing and economic growth in the West of England.

Transport challenges identified in the Joint Local Transport Plan

1 in 11 commutes by public transport

£300m annual cost of congestion

25% increase in trips by 2036

£6bn shortfall in transport funding

Population growth
2016: 1.1m people
2036: 1.3m people

Over 300 premature deaths a year linked to NO_2

2 of 3 commutes by car

Transport is the largest contributor to greenhouse gas and CO_2 emissions

Ageing population: 1 in 5 over 65 years old

2 in 5 commutes are less than 2km

Source: West of England Joint Local Transport Plan 4

VISION, PRINCIPLES AND OBJECTIVES

Our transport vision:

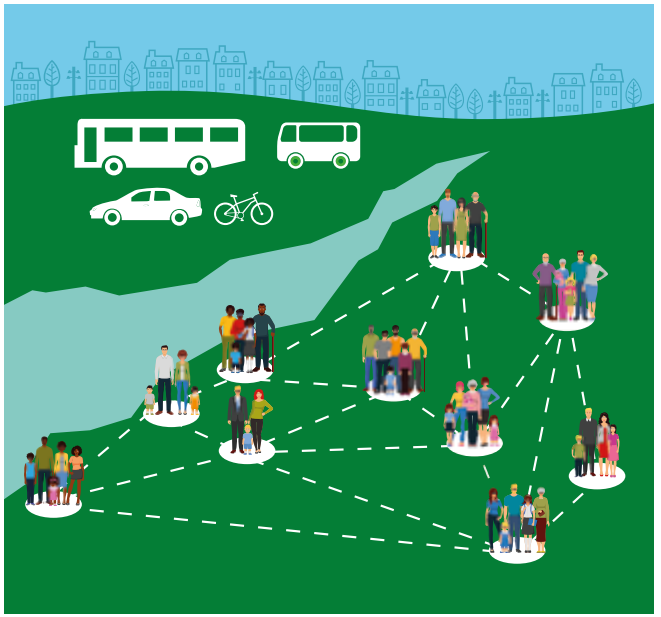
Our overarching transport vision for the West of England Joint Local Transport Plan 4 is:

"CONNECTING PEOPLE AND PLACES FOR A VIBRANT, INCLUSIVE AND CARBON NEUTRAL WEST OF ENGLAND"

As such, we are committed to reducing car use overall across the West of England in favour of active travel and public transport and shared mobility. However, when trips need to be made by private vehicle, we want them to be made by an electric vehicle.

Our transport vision commits us to promoting a shift away from petrol and diesel vehicles to electric vehicles for journeys which cannot be readily switched to walking, cycling or public transport by making sure people in the West of England have the access they need to high quality and inclusively designed public charging infrastructure.

Public investment in electric vehicle charging infrastructure will need to be matched by investment in measures to get people walking, cycling and public transport, to make those journeys the natural choice for people in our region. The shift to electric vehicles also provides an opportunity to encourage greater use of shared vehicles such as e-car club vehicles and e-bikes.



DELIVERING CHARGERS WITH PUBLIC FUNDING

Our strategic principles

1. A regional Action Plan will align with the wider transport strategy and the local priorities of our constituent councils.

2. Public investment will fill 'gaps' to provide good charge point coverage.

3. Priority will be given to areas where people cannot charge at home.

4. Charge point rollout will be inclusive, accessible, and not negatively impact other road users, including people walking or wheeling.

5. Alternatives to private car ownership will be encouraged.

6. There will be a compatible public charging network across the West of England (where viable).

7. Private sector investment will be actively sought to identify where public money can best be targeted.

OUR OBJECTIVES

By working with our local authorities and reviewing relevant policies and evidence, we have defined a series of objectives for electric vehicle rollout in the West of England. These will help us to tackle the West of England's transport challenges and make sure that people in the West of England can access a charge point when they need to.

1. ENCOURAGE PEOPLE TO SWITCH TO LOW CARBON TRANSPORT WITHIN THE REGION

The transition to electric vehicles must be accompanied by measures to reduce the number of trips made by private car and be delivered alongside investment in other sustainable modes.

Why are we proposing this objective?

The West of England authorities made climate emergency declarations in 2019. With road transport representing 44% of carbon emissions in the West of England (JLTP4), there is an urgent need to electrify any remaining vehicle journeys which cannot be shifted to other modes.

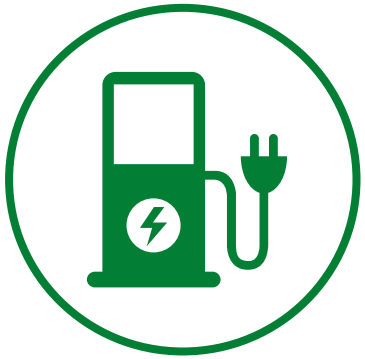
The West of England has several Air Quality Management Areas and two operational Clean Air Zones. The transition to electric vehicles provides an opportunity to reduce nitrogen dioxide emissions from transport to safe, legal levels.

2. PROMOTE ALTERNATIVES TO PRIVATE CAR OWNERSHIP

Electric vehicle Car Clubs and other e-mobility services will be expanded across the West of England's residential locations so that these services offer a genuine alternative to private vehicle ownership.

Why are we proposing this objective?

The shift to electric vehicles provides an opportunity to promote alternatives to car ownership such as e-car clubs. We will need to reduce car mileage by around 40% by 2030 to get carbon emissions down. This will also help to tackle; poor air quality, congestion and reducing parking demand and vehicle dominance of residential streets.



3. SUPPORT A CONSISTENT, HIGH QUALITY USER EXPERIENCE ACROSS THE WEST OF ENGLAND

The Combined Authority, working with the local authorities, will create a quality, reliable service with longevity to help the regional shift required. The West of England's local authorities will work together to explore opportunities for a consistent approach and minimum standards for publicly-funded chargers in the region.

Why are we proposing this objective?

A consistent approach will give users confidence that they will be able to use charge points across the whole region.

4. SUPPORT AN INCLUSIVE, ACCESSIBLE CHARGE POINT NETWORK TO MEET THE NEEDS OF DISABLED ELECTRIC VEHICLE CAR USERS

Charging bays delivered with public funding will be designed and laid out, as far as reasonably practical, in such a way that allows disabled drivers to access the charge points. We will also encourage charge point suppliers to consider best practice guidance in the delivery of new charging bays and will incorporate accessibility in our future procurement work for new charge points.

New charge points will not adversely impact other road users, including people walking or wheeling.

Why are we proposing this objective?

Local charge points will need to be inclusively designed and meet current design standards to meet the diverse needs of people in our region.

At the same time, we must not provide infrastructure that could discourage people from walking, wheeling or cycling.

5. IMPROVE ACCESS TO THE CHARGE POINT NETWORK NO MATTER WHERE RESIDENTS LIVE

By 2030, all residents in rural areas should be able to access a publicly funded or privately funded charge point within 1km of where they live.

In urban areas, low-income residential areas will have the affordable charging solutions they need to shift to electric vehicles and people who cannot charge at home will have access they need to on-street chargers or chargers in residential charging hubs.

Why are we proposing this objective?

If left to the market, electric vehicle charging infrastructure is unlikely to be evenly distributed and we could end up with areas of the region which are under-served.

We expect the majority of electric vehicle drivers with off-street parking will continue to charge off-street at home, but public charging will need to be available for people who cannot charge at home, so they can charge without facing disproportionate charging costs.

6. SECURE PRIVATE SECTOR INVESTMENT

We will work with private sector charge point providers and operators to unlock additional investment in charging infrastructure.

Why are we proposing this objective?

Public investment in chargers will need to be matched by investment by the private sector to help us provide the number of public chargers we think we will need by 2030.

We expect public sector investment to be scaled back over time, as the commercial market matures and public charge point networks become self-sustaining without public subsidy.

WHERE ARE WE NOW?

How many electric vehicles do we have now?

In 2022 in the UK, there were 40,366,293 registered vehicles, of which 833,111 were Battery Electric or Plug-in Hybrid Electric Vehicles. This equates to 2.1% of the overall fleet. At the same point, 453,937 cars and vans were registered in the West of England and of this amount, around 1.4% were electric vehicles.

Across the West of England region, there were 8,884 registered electric vehicles. This places the West of England below the national average for the uptake of electric vehicles. Within our region, Bath and North East Somerset has the greatest proportion of EVs (2.1%), with Bristol having the lowest (1.2%)

Table 1. EV uptake in the West of England

Local Authority	Total cars/vans registered (ICE & EV)	Number of Electric Vehicles	Total percentage of electric cars/vans (2022)
Bath and North East Somerset	95,442	2,044	2.1%
Bristol City	190,580	2,364	1.2%
South Gloucestershire	167,915	2,317	1.3%
West of England Combined Authority (Total)	**453,937**	**6,725**	**1.4%**

How many public chargers do we have now?

As of 2022, there were a total of 585 publicly accessible charging points across the West of England area. This includes chargers provided by a range of private operators on private land, such as supermarket car parks. There are a range of different types of charging points across the region, ranging from slow overnight charging to fast charging. This total excludes other charging points that exist through private ownership for business use or individual homes.

Table 2. Current electric charging points West of England, including Revive Chargers

Local Authority	Standard (7kw)	Fast (22kw)	Rapid (50kw)	Ultra-Rapid (150kw)	Other types	Total
Bath and North East Somerset	76	14	10	0	6	106
Bristol City	112	26	61	4	19	222
South Gloucestershire	80	68	81	26	2	257
West of England Combined Authority (Total)	**268**	**108**	**152**	**30**	**27**	**585**

For more information about the West of England's Revive charge point network and the characteristics of different charge point types, see pages 15 and 16.

The Revive public charging network

To date, the authorities within the West of England have made a commendable investment in electric vehicle charging infrastructure. The Go Ultra Low West programme has been instrumental in establishing a local authority-owned and managed network of 280 charging bays, named "Revive," by the end of 2023. Revive is a local authority-owned network of public EV charge points, jointly owned by Bath and North East Somerset Council, Bristol City Council, South Gloucestershire Council and North Somerset Council, with revenue generated by the chargers reinvested in the network.

There are also plans for additional Revive charge points to be introduced through the Combined Authority's Green Recovery Fund.

The success of the Revive network has been evident in its ability to encourage early adopters of electric vehicles. Now, as mass adoption gains momentum and a regional customer base is established, our primary objective is to expedite the rollout of public chargers. This acceleration is essential to address the region's challenges and ensure that every individual in the West of England can readily locate and access a charging point that suits their needs.

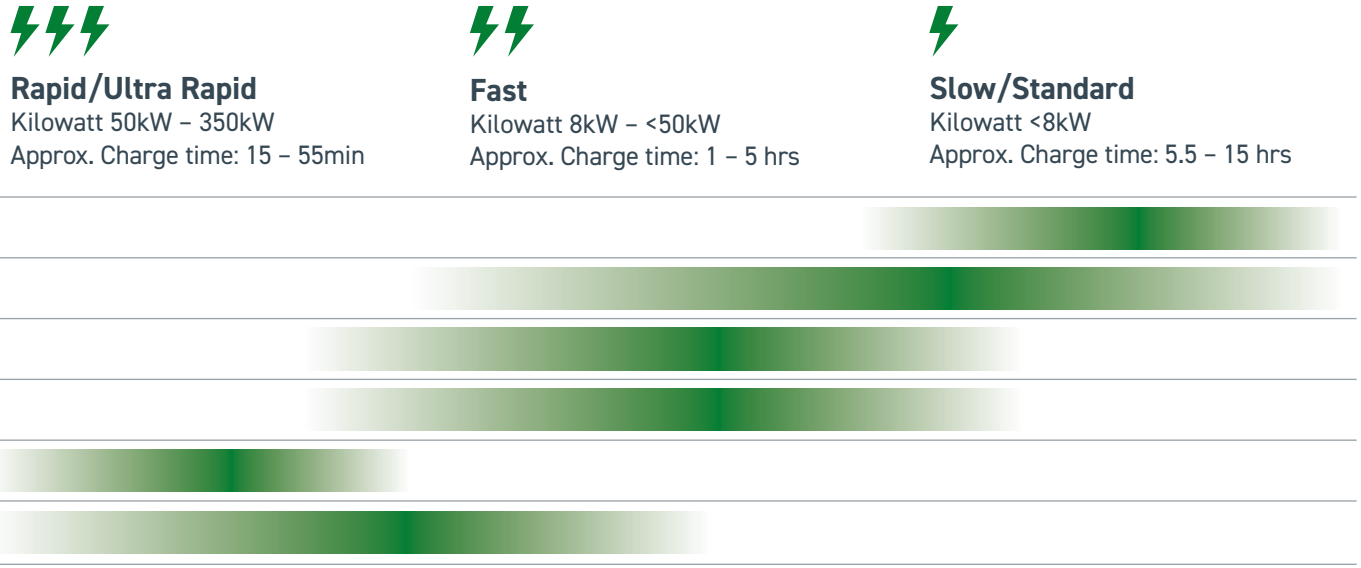
DIFFERENT CHARGER TYPES EXPLAINED:

Most current electric vehicle users charge at home off-street via private charge points, connected to their home energy supply. This is the most affordable and convenient option for people with access to off-street parking and we expect many electric vehicle drivers with access to off-street parking to continue to charge at home in future.

However, not all future electric vehicle owners will have access to private charge points. People without access to off-street parking at home will rely on publicly accessible charge points to meet their needs, including a mixture of on-street and off-street residential chargers, en-route charging and workplace or destination charging (for example, in car parks at supermarkets or leisure centres).

There are a range of different public charge point types, which are appropriate for different people and in different situations. The suitability of a type of charger is dependent on a range of factors, including the length of time vehicles will generally be parked, the type of location and the available power supply. Different charging infrastructure types are generally better suited to specific locations, as shown below:

Table 3: Overview of charger types



Home charging	Workplace	On-street	Destination	On-route	Residential charging hubs
Charging at home tends to be the affordable and most convenient form of charging. This is usually slow charging (<7.4kW) overnight **User:** People who have access to off-street charging. **Funding:** For people with access to off street parking, the onus is on them to arrange installation of a charger.	Workplace charging is generally provided by an employer or commercial landlord in a private car park. The type of charger offered tends to depend on a business's requirements and provision for electric vehicle for employees and business fleet. **User:** Workplace employees and business fleet vehicles. **Funding:** The funding of electric vehicle infrastructure will be funded through either the employer or the commercial landlord/ owner. Can be supported by grant funding through the Workplace Charging Grant.	This infrastructure can be in the form of bollards, lamppost chargers or pavement gullies. These tend to provide 'slow or 'fast' charging. These kerbside charging points have been developed to avoid cables trailing across footways as far as possible. **User:** Charging for users who don't have access to off-street parking. Potential to support drivers of fleet vehicles who store their vehicles at home overnight. **Funding:** We expect public funding to be focussed on giving people who cannot charge at home the access to chargers that they need.	Destinations such as supermarkets, hotels, leisure facilities or healthcare providers may provide slow to fast charging options for customers/patrons. **User:** Visitors to the destination. **Funding:** The funding of electric vehicle infrastructure will be funded through either the organisation or the landlord/owner.	On-route charging is for users to be able to have the option charge or top up during a journey such as motorway services. On route charging tends to offer rapid to ultra-rapid charging and be often found alongside petrol and diesel stations. **User:** Business travel/ fleet, private vehicle users. There is potential for the logistics and freight to utilise this infrastructure. **Funding:** We expect the private sector to principally fund this infrastructure	Residential charging hubs can range in size and scale from standalone chargers in local council or parish council car parks to facilities which also have charging bays for e-car club vehicles and shared mobility services (such as e-bikes). These hubs have the potential to support the roll out of E-car club vehicles as well as chargers for people to charge their cars off-street in a car park near their homes. **User:** Charging for users who don't have access to off-street parking. Potential for users of shared e-bikes and car clubs to use these hubs. Potential to support drivers of fleet vehicles who store their vehicles at home overnight. **Funding:** We expect public funding to be focussed on giving people who cannot charge at home the access to chargers that they need.

WHERE COULD WE END UP?

How many EVs will there be in future?

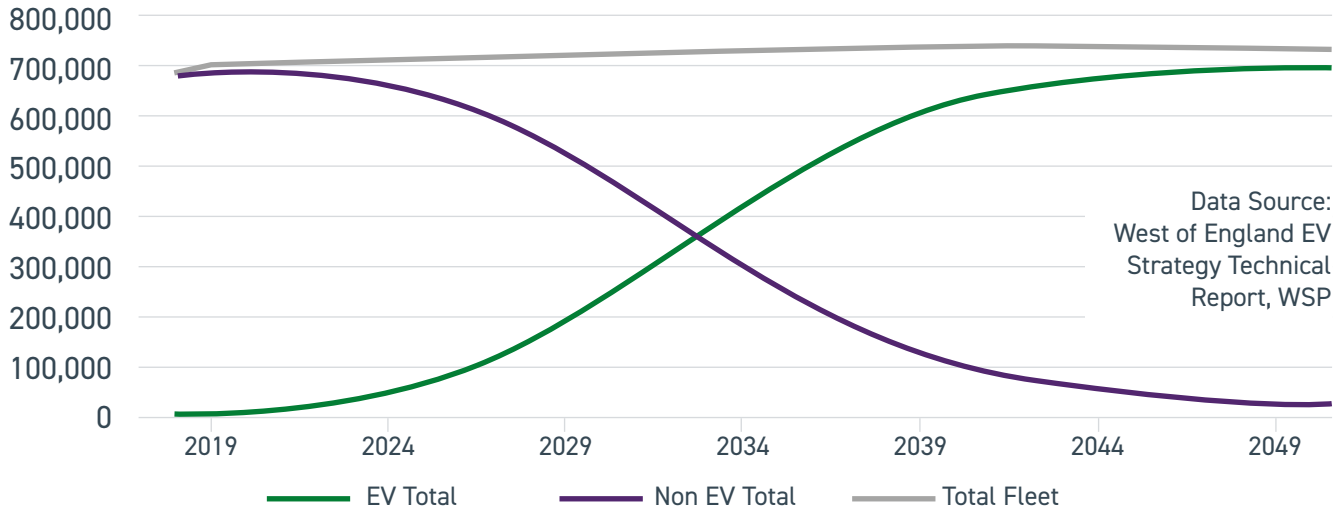
By the end of 2025, our forecasts show that there could be nearly 40,000 electric vehicles registered to people and businesses in the West of England region, with that number increasing to more than 150,000 in the Combined Authority area by 2030.

Table 4. Forecast electric vehicle car and van uptake to 2030

Area	2022	2025	2030
Bath and North East Somerset	2,044	11,554	45,576
Bristol City	2,364	18,891	76,363
South Gloucestershire	2,317	9,185	35,599
West of England (Total)	**6,725**	**39,630**	**157,538**

Data Sources: 2022 data from Department for Transport Q3 2022 vehicle data. 2025 and 2030 data from National Electric Vehicle Insight and Strategy Tool (NEVIS), Cenex.

Figure 1. Forecast electric vehicle car and van uptake to 2050



HOW MANY PUBLICLY FUNDED CHARGERS WILL WE NEED BY 2030?

Predicting the number of chargers which will be required by 2030 is complex and is highly sensitive to a range of factors (such as technical innovation, traveller behaviour and the potential 'utilisation' of a typical charge point (the number of people who can use a charger in any one day)).

Under a future scenario which assumes a moderate level of shared charge use becomes the norm, we have forecast that **the West of England could need 4,416 public fast chargers and 690 public rapid chargers by 2030** to meet future demand (funded by both the public and private sectors).

By 2030, we expect around 50% of fast chargers and 10% of rapid chargers will require at least some public funding, with the remainder fully funded by the private sector. This means that **public investment will be needed for 1,863 chargers in the West of England Combined Authority area**, to support the installation of 1,764 'fast' and 99 'rapid' chargers.

Private charge point operators do and will play a vital role in enabling residents and businesses in our region to shift to electric vehicles. However, some public funding, particularly for lower-speed chargers, will also be needed in the short- to medium-term to ensure the region has the number of chargers it needs and to fill any gaps in provision.

We propose to review our Action Plan at 12-month intervals or earlier, as appropriate, to make sure we are able to respond if the pace of deployment by the private sector exceeds our expectations.

Publicly funded charge points needed

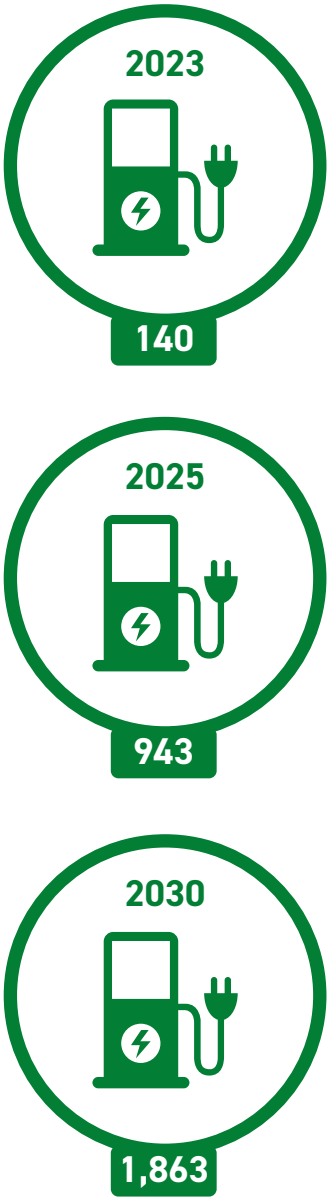


Table 5. Forecast publicly funded chargers needed by 2030

Local Authority	'Fast' chargers	'Rapid' charges	Total
Bath and North East Somerset	510	29	539
Bristol City	855	48	903
South Gloucestershire	399	22	421
West of England Combined Authority Total	**1,764**	**99**	**1,863**

Data Source: West of England Electric Vehicle Strategy Technical Report, WSP

OUR ROLE IN PROVIDING ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

The private sector has shown a significant appetite to invest in electric vehicle charging infrastructure, which is expected to grow as the number of electric vehicles on the road increases. However, there are areas in the West of England that could be left behind without public sector intervention

Rapid chargers tend to be more attractive to private charge point operators, as they can notionally serve four to five times the number of electric vehicles in a day than low-speed chargers could, though low utilisation can hold back the rollout of these chargers in rural areas.

Low-power residential charging can be particularly commercially challenging for private charge point operators without public intervention due to the slower speed of charging and smaller margins on the sale of energy, meaning that a greater level of public intervention is required to roll out these charger types. We, therefore, expect our public investment to be predominantly focussed on delivering lower-powered chargers in the West of England.

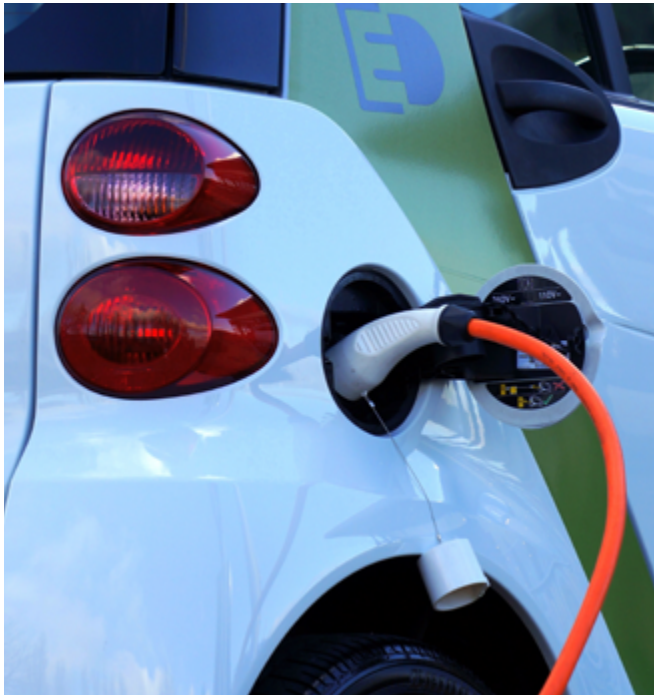
Consequently, **this means public sector funding is required to ensure a more equitable network**.

Public sector funding can accelerate the tipping point from early adopters to an early majority in the uptake of electric vehicles through government financing of public charge points.

Where left to the private sector alone, investment is likely to be heavily focused on high-speed chargers in the most profitable locations, where high utilisation can be guaranteed and where the highest return on investment can be achieved. As a result, gaps in provision are created where the potential to generate revenue is low, or where expensive infrastructure enhancements are required to improve grid capacity.

There is a clear role for the West of England's authorities to intervene to plug these gaps in the evolving electric vehicle charging network in the short to medium term until the market matures, to help make sure that people across the West of England have access to chargers that they need to switch to electric vehicles, especially in areas which would otherwise remain underserved.

Proposals are already in development to fully fund new charge points in locations which are currently underserved using the West of England's Green Recovery Fund. The Local Electric Vehicle Infrastructure (LEVI) Fund also provides an opportunity for us to help accelerate the transition to electric vehicles in residential areas, while also exploring opportunities to unlock private sector investment in chargers in these areas.



WHERE SHOULD PUBLIC INVESTMENT BE FOCUSSED?

We expect the private sector to take the lead in the installation of rapid and ultra-rapid chargers. However, the Combined Authority is committed to ensuring equitable access to electric vehicle charging, especially for those without off-street parking or residing in rural areas through prioritising public funding in these areas to ensure equitable access to charge points.

We will need to consider how to serve these areas where demand is not met by the private sector, focussing our investment on locations where it can have the biggest impact.

Figure 2. Transition between public sector and private-led funding for charge points.

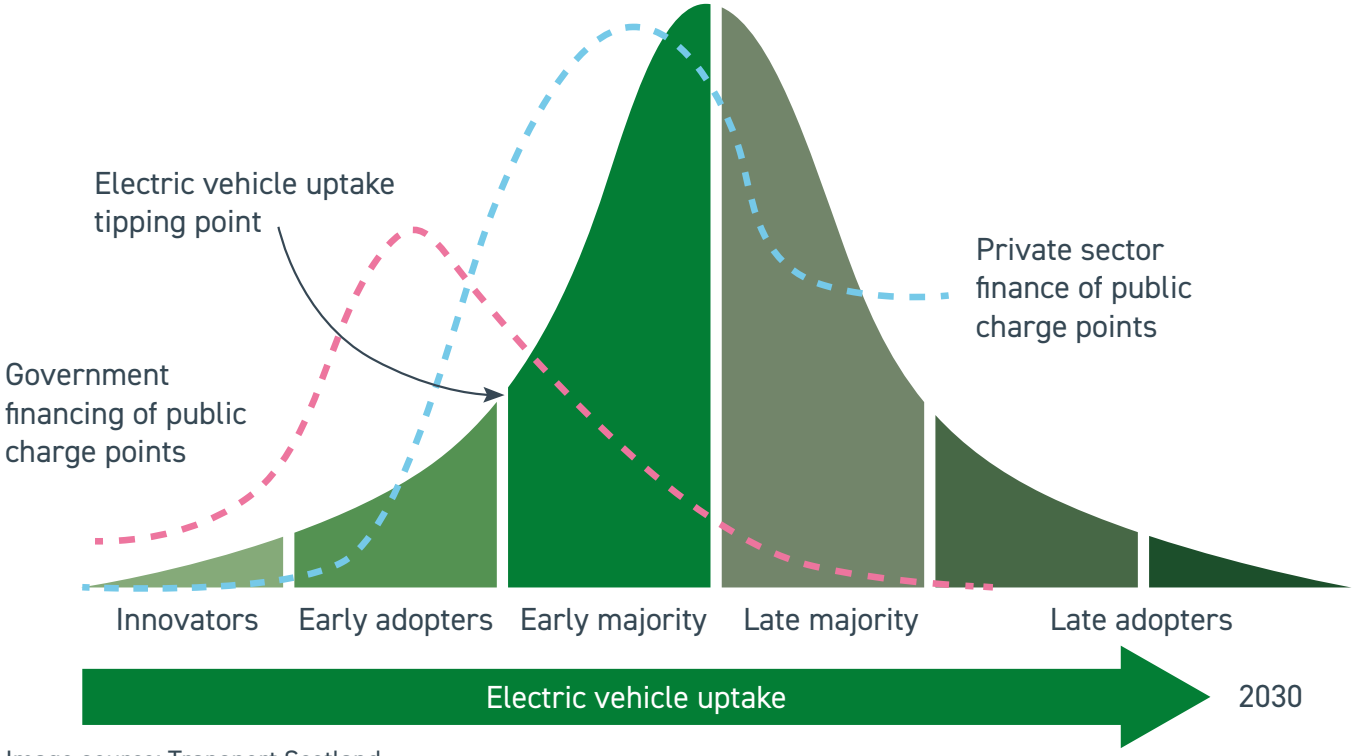
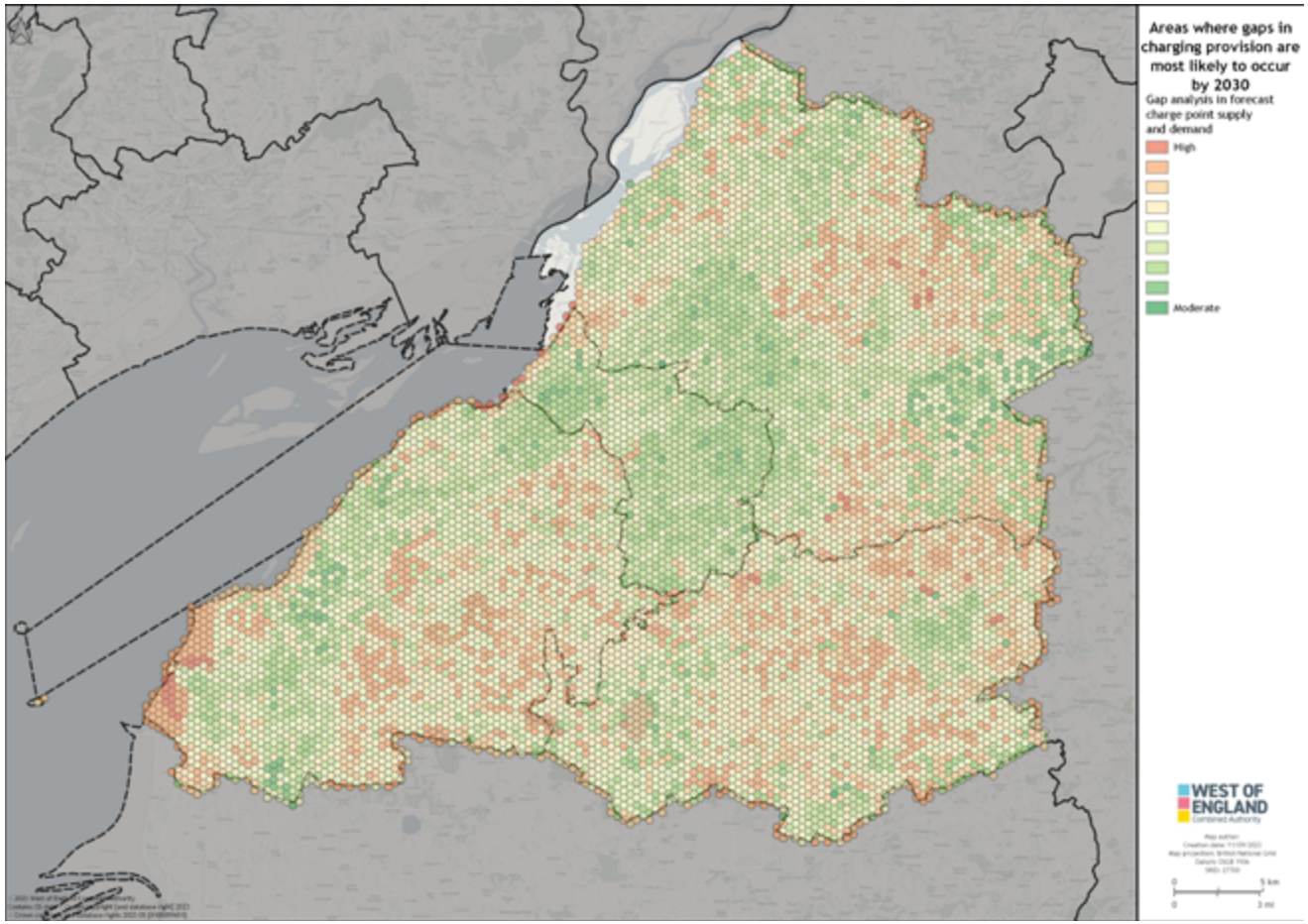


Image source: Transport Scotland

This map shows in red the areas in the West of England where we expect most of the gaps in provision to be by 2030. This shows where the demand is not expected to be met by forecast supply without public intervention. While gaps in provision are expected in many rural areas, there are also likely to be gaps in our towns and cities which we will need to address. We will need to consider how to serve these areas where demand is not met by the private sector, focussing our investment on locations where it can have the biggest impact.

Map 2. Areas where gaps in charging provision are most likely to occur by 2030



Data Source: West of England Electric Vehicle Strategy Technical Report, WSP

HOW WILL WE PRIORITISE SITES FOR NEW CHARGE POINTS?

Most charging will continue to happen at home, but publicly accessible charge points will take on greater importance in the future, as the number of potential electric vehicle owners without off-street parking and the simple means of charging at home increases. At the moment, electric vehicle ownership is heavily skewed toward those on higher incomes, with access to company car leasing schemes and those who have access to off-street parking.

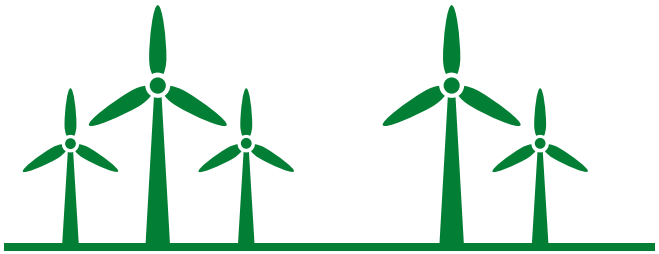
In the longer term, as electric vehicle prices continue to fall, the makeup of electric vehicle owners will begin to reflect more closely the wider population, which includes those without access to off-street parking.

We will continue to accept electric vehicle charge point site suggestions by residents for suggested charging points for destination and on-street charging. We will then assess these requests in terms of the above criteria, alongside the overall viability of delivering chargers in these locations.

To help make sure that public investment is focussed on areas where it is most needed, we will develop a data-led approach to identifying priority locations for new publicly funded infrastructure. This may consider factors such as:

- Gaps in charger provision where demand isn't expected to be met by the private sector (see above map).
- Deprivation data.
- Air quality data.
- Proximity to existing publicly available charging point sites.
- Land ownership, and the potential to provide an electrical connection.
- Available footway widths.
- Likely availability of access to off-street parking in residential areas.

WHAT OTHER DELIVERY CHALLENGES COULD WE FACE?



Energy supply

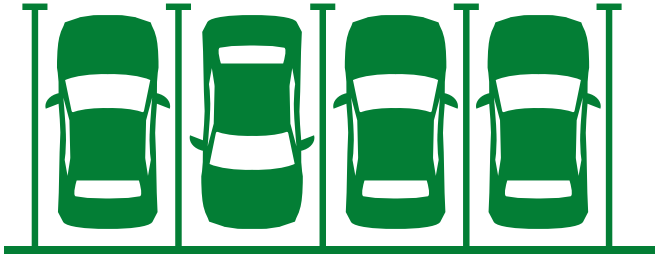
Connection costs to the energy grid can be a costly barrier to the installation of new charging infrastructure, particularly for high-powered / rapid chargers, where costs can run into several hundreds of thousands if grid upgrades are required. When developing proposals for new charging infrastructure, we will need to work closely with the energy sector to make sure that there is sufficient capacity to deliver the charge points the West of England needs, although in some locations, grid updates may be needed to ensure an equal allocation of charge points.

In the longer term, new technologies at various stages of design and development, such as smart charging, vehicle to grid technology and energy (battery) storage, may provide opportunities to overcome grid constraints and avoid costly capacity upgrades. We will therefore continue to monitor the opportunities provided by new technologies.

Funding of public infrastructure

Funding and delivering new charging infrastructure in the right locations and at the scale required to achieve the region's decarbonisation ambitions represents a significant challenge for the West of England.

Our Action Plan will need to be very ambitious, reflecting the scale of funding which will be needed and the action we need to take to tackle climate change. This will require the Combined Authority to secure government funding, and we will continue to seek further funding opportunities that align with our Action Plan objectives and needs of the region.



Land ownership

We expect most new chargers supported by public funding to be sited on land owned by our local authorities, including their car parks, or on the public highway. In some locations, third party land, such as parish council car parks, may be needed to make sure that our residents have access to the chargers they need. Where this is necessary, the legal agreements and permissions required could add delays to installation of new chargers, and our experience indicates that time for this process will need to be allowed when planning new charge point delivery.

HOW WILL WE DELIVER OUR ACTION PLAN?

We have developed a set of actions which will help us to drive forward electric vehicle uptake in the West of England, meet our objectives for electric vehicle charge point rollout and support the West of England's ambition to scale up the delivery of new charging infrastructure. These actions are intended to be ambitious, reflecting the scale of action needed to address the climate emergency and will be kept under review to make sure we are able to respond when new opportunities arise.

Given the wide range of roles and responsibilities in delivering electric vehicle charging infrastructure, we will need to work collaboratively with other organisations to achieve the objectives of our first Action Plan.

These include:

- Working closely with our local authorities for proposals to deliver new charge points on public land and ensure that our objectives are incorporated into their local policies and plans. Our authorities have a key role to play in supporting our objectives for electric vehicle charge point delivery.
- Western Gateway Sub-National Transport Body, who will play a key role in bringing together stakeholders from the wider region and providing evidence to support future updates to our forecasts.
- The energy sector, to help electricity network operators plan their networks to meet future expected demand.

We propose an ambitious set of actions to help to help meet the region's objectives for electric vehicle charge point rollout. These are contained in Table 6 alongside information on the leading organisation, timescales, funding streams and how these actions align with our objectives.

Table 6. Actions proposed in our first Action Plan

Action	Description	Organisations leading	Timescale	Objectives supported	Linked funding stream
1	Adopt a regional Action Plan, supported by local authority delivery plans, to ensure delivery of chargers with public sector funding supports regional and local transport priorities.	Combined Authority, Local Authorities	Short term	1, 2, 3, 4, 5, 6	Combined Authority Funding & Green Recovery Fund (GRF)
2	Take a regional approach to future bids for public sector funding, using the Combined Authority's scale to seek the maximum potential public investment for the region.	Combined Authority	Short – medium term	5	Local Electric Vehicle Infrastructure Fund (LEVI)
3	Focus public sector investment on providing chargers for people who cannot charge off-street at home to ensure people can access the chargers they need. In some areas, this will mean providing chargers on-street or in residential or community charging hubs.	Combined Authority, Local Authorities	Ongoing	6	LEVI
4	Identify private sector delivery partners to help unlock private funding to support with charging infrastructure delivery. Seek agreement which helps to achieve good coverage and ensure gaps in network provision are filled.	Combined Authority, Local Authorities	Short – medium term	1, 5, 6	LEVI
5	Align private and public investment so that public funding is used to address 'gaps' in provision and achieve good and equitable coverage.	Combined Authority, Local Authorities	Ongoing	1, 4	LEVI

Action	Description	Organisations leading	Timescale	Objectives supported	Linked funding stream
6	Develop regional engagement and communication strategy for electric vehicle charging. Include strategic engagement with industry, local authorities, and business to understand their requirements for fleet charging. Develop the TravelWest website as the regional electric vehicle charge point webpage.	Combined Authority	Short – medium term	3, 5	Combined Authority Funding
7	Support policy changes to drive electric vehicle uptake and alternatives to private car ownership (including planning policy requirements and changes to local parking standards)	Combined Authority, Local Authorities	Short term	1, 2, 3, 4, 5	
8	Promote regional and local alternatives to private car ownership, including rollout alongside forms of shared mobility (such as e-cycles, e-car club vehicles).	Combined Authority, Local Authorities	Short – medium term	2, 5	
9	Create a regional electric vehicle forum, with representatives from local authorities, the energy sector, business, and the sub-national transport body, to help identify and overcome barriers to electric vehicle charger rollout. This could include energy grid capacity, which can limit where charge points are deployed.	Combined Authority, Western Gateway STB	Short term	3, 5	LEVI
10	Ongoing monitoring of charge point utilisation, forecast charge point requirements and changes in technology and trends. As technical innovation takes place and traveller behaviour changes, the West of England's approach to electric vehicle charge point delivery will need to be annually reviewed to make sure it is fit for purpose.	Combined Authority, Western Gateway STB	Short, medium, and long term	5	LEVI

HOW WILL WE MEASURE OUR SUCCESS IN CHARGE POINT DELIVERY?

Technical work done by WSP has been used to forecast a range of scenarios to determine the number of future charge points required (see Appendix B). The medium range forecast scenario is the most likely scenario and is therefore presented within the Action Plan itself.

Although it is difficult to predict how many chargers could be installed by third party operators using private land, as a region we will periodically monitor the delivery of both publicly and privately funded charge points in each area and will produce annual progress statements to outline our progress towards meeting the ambitious targets set out in the Action Plan and identify any barriers that have arisen.

Our annual monitoring work will also take into account latest developments, such as changes in electric vehicle registrations across the region, to make sure we can respond and review our targets, if the pace of the transition to electric vehicles exceeds the modelled assumptions outlined within this Action Plan. This work will also consider any emerging technological changes which may impact the number of forecast chargers that the West of England needs to provide.

NEXT STEPS

What will our future delivery model look like?

As more people switch to electric vehicles, increasing the number of electric vehicle owners, this will in turn increase the commercial viability for private charge point operators. The Combined Authority wants to work with the private sector to increase the level of investment in public chargers in our region. However, we also want to make sure that the rollout of chargers gives people access to chargers that they need and doesn't leave behind people who live in areas that are not attractive to private sector investment.

The West of England's "Revive" network is fully owned, operated, and maintained by the region's local authorities. This means that the West of England's local authorities keep any revenue generated by the network to reinvest in running the network and new charging infrastructure. However, it also means that the West of England's local authorities take on all of the risks from running the network and that expanding the network is dependent on being able to secure new government grants.

We will work together with the West of England's local authorities to explore opportunities for concession model for future charge point delivery. This will allow us to transfer some of the operational risks and costs to the private sector, while also helping us to seek a share of the revenue and leverage private funding for new chargers. This will make us less reliant on government grants to fund infrastructure going into the future.

By grouping packages of sites and inviting third parties to operate chargers to agreed terms, we will seek to balance the delivery of less commercially viable sites with others that are more attractive to operators, to help provide chargers in places where people need them.

Approaches to residential charging for those without off-street parking

As the uptake in electric vehicles increases, the need to identify suitable solutions for people without access to off-street parking will increase.

We will work as a region to identify suitable measures for people without access off-street charging which local priorities and requirements.

The most suitable types of charging solution will depend on the local characteristics of each area. These characteristics include:

- The available capacity of the energy grid
- The availability of highway space (including the width of carriageways and footways)
- Local planning requirements
- Proximity to local authority car parks.

We will work with our local authorities to develop minimum design standards / guidelines for new electric vehicle charging infrastructure in each local authority area following the adoption of the West of England's Charging Action Plan, ensuring that the needs of other road users, including people walking, wheeling and cycling, are taken into account. These guidelines will also set out our local authorities' approach to ensuring that suitable provision is made for disabled drivers.

What opportunities for buses, taxis and freight?

While the focus of our first Action Plan is on the electrification of cars and vans, we also need to consider other types of vehicles.

For buses, action has already been undertaken locally, with the provision of bio-gas buses within the Bristol urban area on some services. However, we will continue the work with the bus industry to increase the conversion to alternative fuelled vehicles when central government funding opportunities become available, such as the Zero Emission Bus Regional Areas (ZEBRA) scheme.

For Taxi and private hire vehicles, we will review opportunities to apply to central government funding to help with the conversion with the supply of electric charging infrastructure, and support for the uptake of electric taxis and private hire vehicles across the region.

For lorries, and other Heavy Goods Vehicles, the technology for electrifying these vehicles is less developed nationally when compared to other types of electric vehicles. This is due to the constrains such the weight of these vehicles, need to travel long distances nationally and internationally, and limited availability of supporting infrastructure. We will consider options for the use of alternative fuels and infrastructure based on the work undertaken by the Western Gateway Freight Strategy, as well as any national policy.

Measures to promote alternatives to car use (role of e-car clubs and e-mobility)

Car clubs and other forms of shared mobility, such as e-bikes and e-scooters, can offer alternative travel options without our residents having to own their own vehicle. The Combined Authority will continue to explore opportunities to take advantage of the transition away from petrol and diesel vehicles by promoting greater use of shared vehicles which are zero emission at point of use (including e-car club vehicles and e-cycles).

The role of innovation

The world of electric vehicles and charging infrastructure is extremely dynamic and has already seen technology and digital innovations which have led to longer range vehicles, faster charging speeds, improved user experience and greater integration across energy networks. As our Action Plan is delivered, we will remain responsive to emerging innovations opportunities in the sector. This may include collaborating to pilot new technologies and transitional models for delivery and enable us to support our broader regional ambitions to decarbonise the region's transport network, create new jobs and support business opportunities.

APPENDIX A: SUMMARY OF SUPPORTING POLICY DOCUMENTS

Policy area	Summary
National	**Taking Charge: The electric Vehicle Infrastructure Strategy, Department for Transport (March 2022):** The Strategy sets out the governments ambition to increase electric vehicle uptake. This includes the aim to have an additional 300,000 electric charging points installed across the UK by 2030.
	Net Zero Strategy: Build Back Better (October 2021): This sets out the UKs decarbonisation pathway to 2050. It reiterates the ambition to phase out Internal Combustion Engines for new vehicles in favour of electric vehicles.
	Decarbonising Transport, Department for Transport (July 2021): This document sets out the government action for Decarbonising the transport sector across the UK by 2050. This considered each transport mode in turn, including accelerating modal shift to walking, cycling and public transport, and decarbonising road transport through Electric Vehicles.
	Clean Air Strategy (Department for Environment, Food and Rural Affairs), (January 2019): The strategy indicates how government will address sources of air pollution, including those coming form transport. This includes promoting travel that does not generate air pollution at point of use.
	Changes to building regulations – Infrastructure for the charging of electric vehicles (in force form 2022): This sets out new requirements on housebuilders and developers to provide electric charging points in all new residential and non-residential buildings.
	Ten Point Plan for a Green industrial Revolution (November 2020): This set out a vision to support green jobs, and decarbonisation of the UK economy.
West of England	**West of England Climate and Ecological Strategy and Action Plan (April 2022):** The action plan sets out the local measures needed to reach Net Zero, including promoting electric vehicles.
	Joint Local Transport Plan 4 (JLTP4) (March 2020): The transport plan covering the West of England sets the overall transport policies and proposals across the region. The plan outlines the need to promote electric vehicles.
	West of England Local Industrial Strategy (July 2019): The plan sets out the priorities to increase productivity across the region for the benefit of residents in the region.

Policy area	Summary
Local Authority	**Climate Emergency Action Plan, Bath and North East Somerset Council (2020):** Aims to achieve carbon neutrality by 2030, and recognises transport as a priority. Suggested target to shift to 76% Zero and Low Emission vehicles.
	Mayor's Climate Emergency Action Plan, Bristol City Council (2022): Sets out actions that the Council will take, including investment in electric vehicle charging points
	One City Climate Strategy, Bristol City Council (2020): Ambition to achieve carbon neutrality by 2030. Aiming for 100% of Bristol's cars and 90% of remaining vehicles to be ultra-low emission.
	Climate Emergency Strategy, South Gloucestershire Council (2020): Recognises that a very high uptake of electric vehicles and reduction of mileage will be needed to meet 2030 goals.

APPENDIX B: REVIEW OF FUTURE CHARGE POINT REQUIREMENTS

In order to assess the future demand for electric charging points across the West of England, a study was commissioned to look at local demand for charging infrastructure. Alongside this, we also have utilised a national data tool, produced by Cenex to assess demand at a national level.

Electric Vehicle Strategy Technical Report (WSP) forecasts

The technical report produced by WSP provided three different scenario forecasts regarding the need for publicly funded charging points to 2030. These forecasts were generated representing different ratios of electric vehicles to charge points. The low ratio assumes a scenario where charger utilisation is low and there is a focus on low-speed residential and overnight charging. The high scenario assumes that rapid charging will be preferred in future – less units will be required as charge times will be shorter and multiple vehicles per day will be able to use the same charge point. The medium range scenario would be a mix between the low and high scenarios.

Scenario: Forecast of publicly funded charge points required by 2030

Area	Scenario	Fast	Rapid	Total
Bath and North East Somerset	High	891	66	957
	Med	510	29	539
	Low	259	15	274
Bristol	High	1494	110	1604
	Med	855	48	903
	Low	434	26	459
South Gloucestershire	High	696	51	748
	Med	399	22	421
	Low	202	12	214
North Somerset	High	1161	85	1247
	Med	665	37	702
	Low	337	20	357
West of England	High	4243	312	4555
	Med	2430	136	2566
	Low	1232	73	1305

The medium scenario represents the most likely outcome, with the high and low scenarios indicating the range of uncertainty in the forecasting up to 2030.

The National Electric Vehicle Insight and Strategy tool (Cenex)

The National Electric Vehicle Insight and Strategy tool (NEVIS), produced by CENEX, to predict the future potential demands for electric charging points across the region, using the Department for Transport's "Road to Zero" ambitions for electric vehicle uptake.

The supply of a network of electric charging points across the region will be through a mix of public and private investment in infrastructure.

Over time, as demand increases, costs fall, and commercial viability improves, the ratio of publicly funded to privately funded chargers will shift. By 2030, it is anticipated that approximately 50% of fast chargers and 10% of rapid chargers may still require some degree of public funding, with the remainder fully funded by the private sector. However, initially the investment by the public sector will be far greater.

Scenario: Road to Zero (high): 2030

Local Authority	Standard (7kw)	Fast (22kw)	Rapid (50kw)	Ultra-Rapid (150kw)
Bath and North East Somerset	786	60	29	17
Bristol City	1,682	127	62	36
South Gloucestershire	4,268	322	156	90
West of England Total	**6,736**	**509**	**247**	**143**

Data source: NEVIS data tool for Local Authorities, Cenex

Forecasts in the Electric Vehicle Strategy

We have used the WSP forecast to inform our Electric Vehicle Charging Action Plan. While these figures are different to the Cenex national scenario forecasts, the levels of additional electric charge points reflect differences in the types of electric charging points. The mix between standard, fast and rapid charging points, as well as levels of use of each location are likely to be different from these figures as a result of deployment by the private sector of charging points. We will continue to keep under review the levels of charging points in the region over time and respond to any increase in demand for additional charging points based on data regarding usage.