



**CAMBRIDGESHIRE
& PETERBOROUGH**
COMBINED AUTHORITY

Cambridgeshire & Peterborough Electric Vehicle Infrastructure Strategy

02/01/2024

Version History

Revision Number	Revision Date	Nature of Revision	Checked by	Reviewed by	Approved by
1	01/03/2023	Draft	EB/JB	EW	
2	20/09/2023	Draft	EW		
3	05/12/2023	Draft			
4	02/01/2024	Draft	EW		

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Glossary

BEV – Battery Electric Vehicle

CPCA – Cambridgeshire and Peterborough Combined Authority

CCC – Cambridgeshire County Council

EST – Energy Savings Trust

EV – Electric Vehicle

EVI – Electric Vehicle Infrastructure

LEVI - Local Electric Vehicle Infrastructure (Fund)

ORCS – On Street Residential Charging Scheme

PCC – Peterborough City Council

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Summary

Key points

- The UK government's Net Zero and air quality ambitions are underpinned by the take up of electric vehicles. The Electric Vehicle Mandate comes into force in 2024 and sees a ramping up of electric vehicle production with all new sales of cars and vans to be electric only in 2035.
- The Local Transport and Connectivity Plan (LTCP) sets out the strategic ambition for transport improvements across the CPCA area. For electrification and chargepoint role out, it identifies key considerations for the area, including:
 - o A unified vision and approach to chargepoint deployment;
 - o Prioritisation of areas with low off-street parking access; and
 - o Ensuring deployment is supported in more challenging/uncommercial areas to deliver an equitable distribution across the region
- Electric vehicle charging infrastructure is key to support the adoption of electric vehicles.
- The CPCA region currently has 443 chargepoints with government estimates of 13,412 required by 2030.
- CPCA has a role to play in ensuring the equitable, safe and sustainable deployment of electric vehicle charging infrastructure, particularly to support those in rural areas and other locations where charging may be challenging.
- CPCA's vision for EV charging infrastructure is for everyone in the region to have the necessary EV charging infrastructure available in the right place, at the time they need. This charging infrastructure will be high quality, safe, affordable, environmentally sustainable and accessible.
- CPCA will apply for central government funding to support EV charging roll out, such as the LEVI and ORCS funding, and will work with local authority partners to ensure realisation of the strategy.

Actions

To take the strategy forward, CPCA will take the following actions:

Action	Target Date	Responsible organisation
Publish EV Infrastructure Strategy (draft is scoped out, write, get approval)	March 2024	CPCA
Establish EV Infrastructure Governance within each LA the feeds through to the existing CPCA's Climate Action Plan governance	March 2024	CCC / PCC
Develop and submit a LEVI capital fund proposal(s)	TBC once understand deadlines	CCC / PCC

Engage with constituent Councils to take forward as a collective	Through timescale of project	CCC
Soft market testing	Dec 2023	CPCA / CCC / PCC
Produce data to inform site selection and mapping of chargepoints	Feb / March 2023	CCC / PCC
Establish appropriate route to market for each LA, prepare and launch EV infrastructure procurement(s)	Summer 2024	CCC / PCC
Develop a 5-year delivery plan for EV infrastructure	June 2024	CCC / PCC
Deliver installed and commissioned charging infrastructure	2025 onwards	CCC / PCC
External engagement and promote collaboration on schemes (e.g. with tier 2 and adjacent local authorities, or constituent authorities if in a Combined Authority)	Dec 2023 onwards	CCC

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Introduction & Scope

In July 2018, the Government published its Road to Net Zero strategy, an ambitious roadmap towards delivering zero emissions transport across the UK.

The Road to Net Zero Strategy is built around a core mission: to put the UK at the forefront of the design and manufacturing of zero emission vehicles and for all new cars and vans to be effectively zero emission by 2040. The plan set out the policy to end the sale of new conventional petrol and diesel cars and vans by 2040. By then, the strategy expects the majority of new cars and vans sold to be 100% zero emission and all new cars and vans to have significant zero emission capability. By 2050 the strategy wants almost every car and van to be zero emission.

Across Cambridgeshire and Peterborough, transport is the largest contributor to our carbon footprint (Figure 1). Of these transport emissions, 96% come from our road traffic.

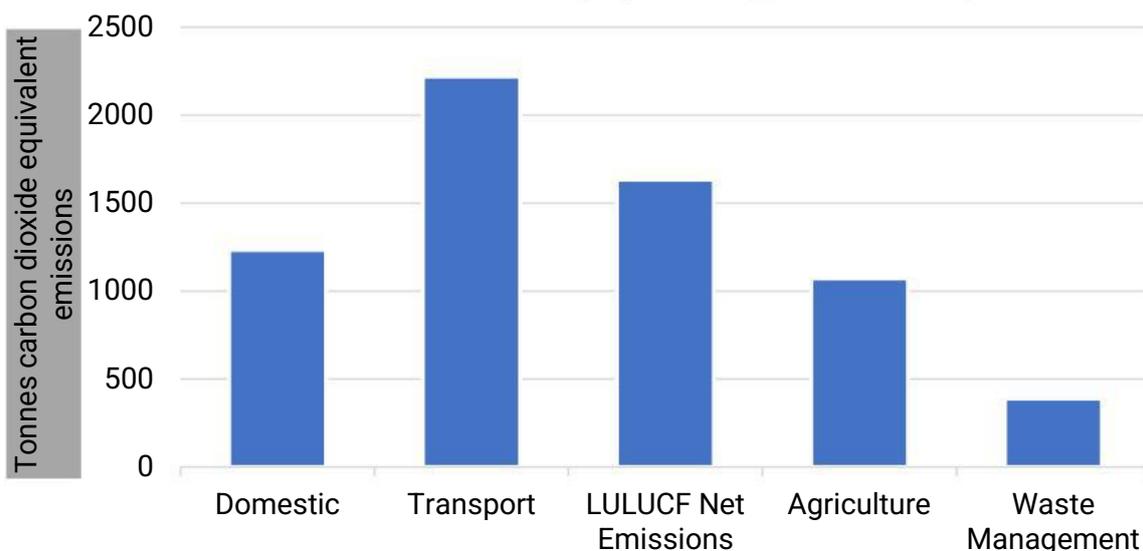


Figure 1 Carbon dioxide equivalent emissions for 2021 in Cambridgeshire and Peterborough

Whilst it is known that the best route to avoiding a significant proportion of these emissions is to encourage modal shift away from low occupancy vehicles in favour of active travel, public transport and travel avoidance. Some low occupancy methods of powered travel are likely to remain in high demand for the foreseeable future, and something must be done now to avoid the associated emissions. In addition, those with mobility issues are likely to need continued access to private vehicles and these will need to be electrified and the infrastructure put in place.

A long-term approach and continued commitment from the Combined Authority and constituent local councils is required to support the development of the local EV market and to ensure that access to charging infrastructure is not a barrier to entry. The transition away from combustion engines is happening quickly and at an increasing rate. The scope of this strategy is therefore to address the transition of roadgoing transport within Cambridgeshire and Peterborough away from fossil fuels in the short term and through the next decade.

The strategy focuses on 5 key areas for delivery:

1. Charging Infrastructure – to ensure our approach is appropriately targeted to different settings
2. Chargepoint Accessibility – to ensure all our communities have equitable access to public chargers
3. Communication, Advocacy and Outreach – to share our knowledge and empower our communities
4. Public and Shared Transport – to support the deployment of electric buses through collaboration with bus operators and deployment of central government funds

VISION / OBJECTIVES

VISION

CPCA's vision for EV charging infrastructure is:

“For everyone in the region to have the necessary EV charging infrastructure available in the right place, at the time they need. This charging infrastructure will be high quality, safe, affordable, environmentally sustainable and accessible”.

CPCA's Objectives

- Install EV chargepoints in public locations, including on-street and destinations to support those who rely on public charging
- Support the growth of a range of chargepoint locations by overseeing the activities of chargepoint operators, communities and the Distribution Network Operator to ensure coverage and choice
- Fleet/Public Transport objective – improving through new infrastructure and supporting operators in the transition to LEMs/EVs
- To monitor and co-ordinate the provision of EV charging infrastructure so that the combined authority can respond to changes in uptake, market development and technology improvement.

Background & Policy Context

National Policy

Government set out the UK 2050 Net Zero Strategy¹ in October 2021, and has subsequently published its Electric Vehicle Infrastructure (EVI) Strategy². It identified five key challenges in providing the necessary EVI to support the ban on internal combustion engine (ICE) vehicles which will come into force by 2035:

- The pace of roll-out is too slow
- Too often, public charging lets people down
- The business case for commercial deployment can be challenging
- Connecting new chargepoints to the electricity system can be slow and expensive
- More local engagement, leadership and planning is needed

The Government's vision for 2030 is that:

- Everyone can find and access reliable public chargepoints wherever they live
- Effortless on and off-street charging for private and commercial drivers
- A reliable network of high powered chargepoints along major roads
- Fairly priced and inclusively designed public charging, trusted by consumers
- Market-led roll-out for the majority of chargepoints, backed by competition
- Infrastructure seamlessly integrated into a smart energy system
- Continued innovation to meet drivers' needs

To deliver this vision, Local Transport and Highways Authorities must work together with our partners to leverage the market and ensure equitable, high quality public charger provision is available to communities across the CPCA area.

In July 2022, the UK Government published 'Taking Charge: the Electric Vehicle Infrastructure Strategy³', which articulates the strategy to achieve a 2030 vision where Electric Vehicle Infrastructure (EVI) is removed as a perceived, and real, barrier to the adoption of Electric Vehicles (EVs). This provides the National EV Policy context in which the rationale for action on EVI must be considered.

Within this context, there is a need for action coordinated by a local EVI Strategy to address six significant challenges:

- Political;
- Environmental;
- Societal and Public Health;
- Technological;

¹ [Net Zero Strategy: Build Back Greener - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/net-zero-strategy-build-back-greener)

² [UK electric vehicle infrastructure strategy - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/consultations/electric-vehicle-infrastructure-strategy)

³ [Taking charge: the electric vehicle infrastructure strategy \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/consultations/taking-charge-the-electric-vehicle-infrastructure-strategy)

- Legislative; and
- Economic

Political

Multiple public commitments have been made to reduce carbon emissions. The UK has a legally-binding net-zero target for 2050. Since 2018, over 400 councils across the UK have made climate emergency declarations, which has led to a range of local climate change commitments and initiatives.

Cambridgeshire has committed to a target of achieving net zero by 2045. And in July 2019, Peterborough City Council declared a climate emergency committing to make the council's activities net-zero carbon by 2030, and to also help Peterborough become a net-zero carbon city by 2030.

Furthermore, most Local Transport Plans include references to EVI deployment as a means for delivering high-quality, sustainable infrastructure for travel.

Action is needed to fulfil on these political declarations and targets.

Environmental

The UK's ten warmest years all occurred since 2002, reflecting a global heating which is considered "unequivocal" to have been caused by the increasing levels of carbon dioxide (CO₂) being emitted into the atmosphere by humanity (IPCC, 2021). Although UK GHG emissions have dropped 43% in total since 1990 – driven particularly by the decarbonisation of power generation – the latest Committee on Climate Change report shows that transportation is still the worst-performing sector in the country, despite the impact of covid-19 on 2019 and 2020 emissions. Road transport accounts for around 15% of the UK's carbon emissions in 2019 and so transitioning from petrol and diesel to EVs is essential to achieving net zero.

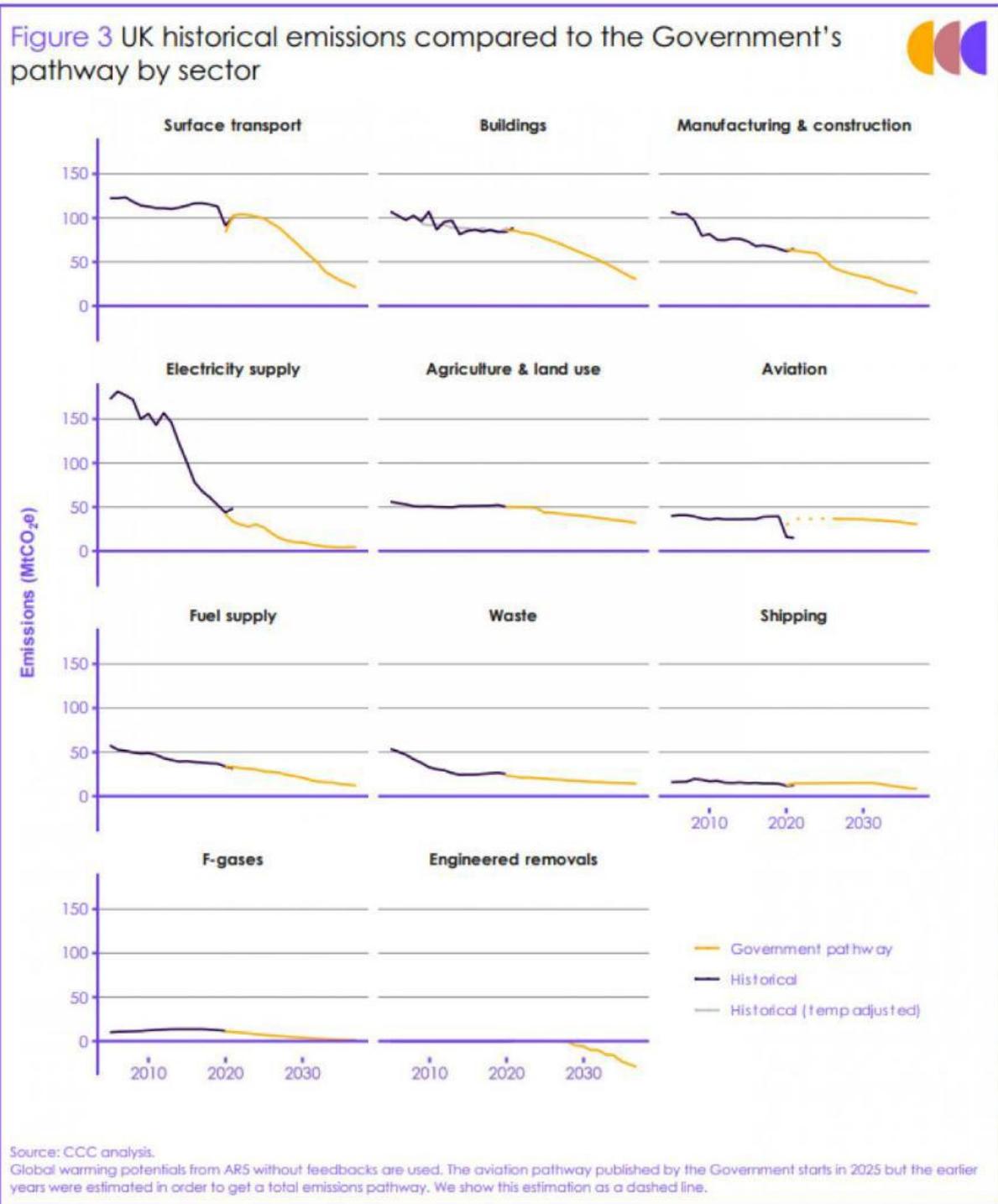


Figure 2: UK historical emissions and Government future pathway per sector

Action is needed to address this significant source of emissions.

Societal and Public Health

Everyday life is impacted for good and ill by the widespread use of conventionally-fuelled engines in life, commuting, business and leisure. Yet because of the economic and social benefits of transport, poor air quality is now the largest environmental risk to UK public

health. The enquiry into the death of Ella Kissi Debrah listed air pollution as an official cause of death for the first time in the UK.

A recent study highlighted that a child living within 50m of a major road could have their lung growth stunted by up to 10% due to air pollution.

In 2019 and 2020, the covid-19 crisis and ensuing lockdowns highlighted wider, more worrying links between urban air quality and public health resilience as evidence emerges that populations exposed to poorer air quality have lower resilience to the disease. Furthermore, updates to the World Health Organisation (WHO) global air quality guidelines in September 2021 mean that the UK legal limits on some particulate matter are now four times higher than the WHO’s maximum levels. However, some councils are adopting these new guidelines such as Cambridge City Council in conjunction with South Cambridgeshire.

The graph below shows the scale of emissions across the region from ICE vehicles which are the major contributors to air quality in the region:

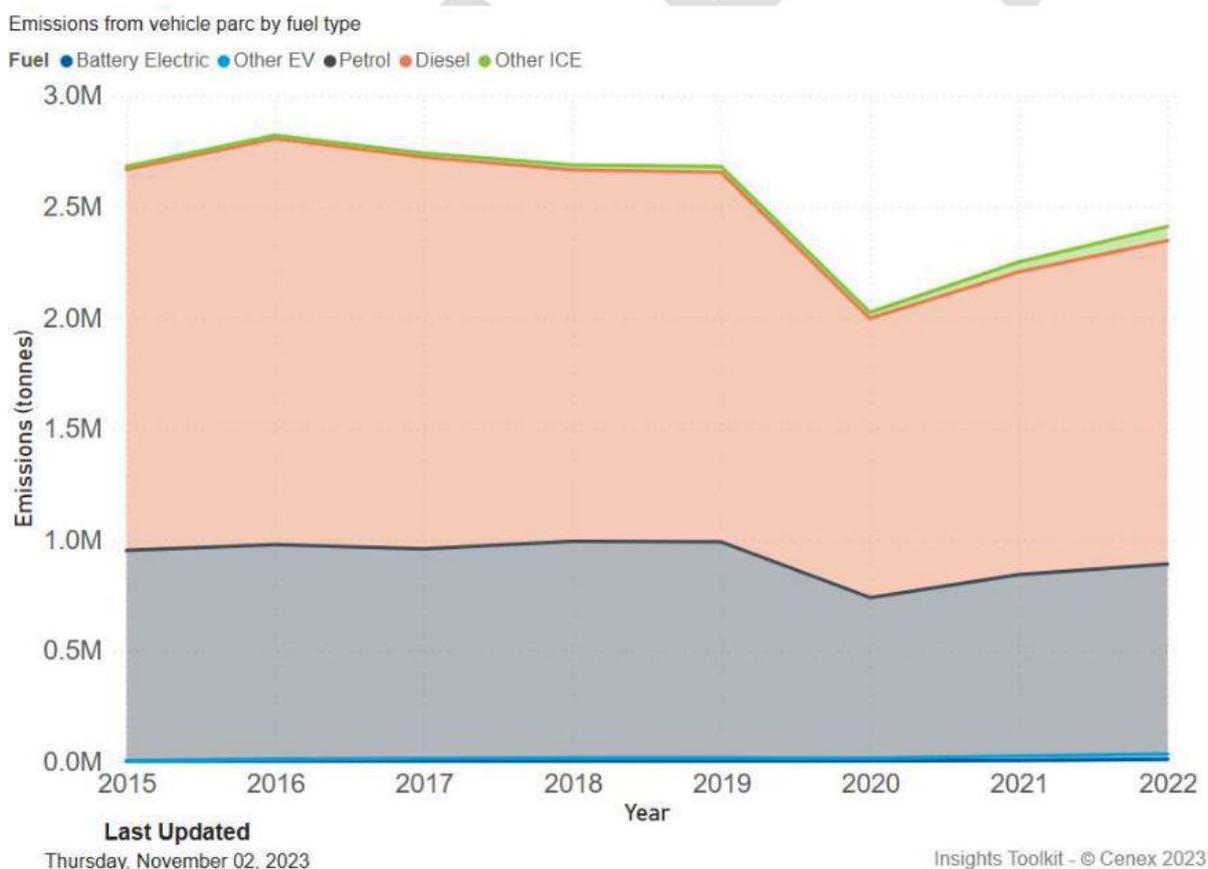


Figure 3: Emissions by vehicle fuel type, East region⁴

⁴ Emission from vehicle parc by fuel type 2015-2022, East regions, Cenex, Nov 2023

A number of air quality management areas were set up within the region where local authority partners found that specific sites were not going to meet the national air quality objectives. An overview of these AQMAs is set out below:

Cambridge: The centre of Cambridge has been within a statutory Air Quality Management Area since 2004 due to exceedances of nitrogen dioxide (NO₂). The main source of nitrogen dioxide in Cambridge is from vehicle emissions. Air quality has been slowly improving in most parts of Cambridge in recent years, but there are parts of the city, including the busy central streets, where levels of NO₂ continued to be high prior to the COVID-19 pandemic⁵.

East Cambridgeshire: East Cambridgeshire is predominantly rural in character and air quality is relatively good. Statutory objectives are being met at all monitoring locations and the council has not designated any areas as Air Quality Management Areas (AQMA).

Huntingdonshire: Huntingdonshire currently has four Air Quality Management Areas (AQMA's). 1. Huntingdon, 2. St Neots, 3. Brampton, and 4. A14 Hemingford to Fenstanton. The main air quality issues within Huntingdonshire continue to be NO₂ from vehicle emissions, mostly originating from the A14 and to a lesser extent the A1, both of which run through the district. However, local traffic within the market towns also contributes to some elevated levels, compared to the rest of the district⁶. Data collected demonstrates that there were no breaches of any of the national objectives in 2022 at any of the measurement locations within Huntingdonshire.

South Cambridgeshire: No exceedances of any of the national air quality objectives were reported at any of the monitoring locations. Whilst there has been a slight increase or equivalent levels in concentrations to the previous year seen at some monitoring locations, these are still below pre pandemic levels. •There continues to be no exceedances of any objectives at any of the sites in the AQMA which is now revoked in 2022.

Peterborough: There is currently one Air Quality Management Area (AQMA) in the council, for emissions of SO₂ from a brickworks (not transport related) in the area administered by Fenland District Council (see below).

Fenland: In 2022 Fenland monitoring demonstrated that air quality remains compliant with national air quality objectives. Fenland currently have four Air Quality Management Areas (AQMA's); three in Wisbech (SO₂, PM₁₀ and NO₂) and one in Whittlesey for SO₂ (relating to a brickworks). It was proposed in the 2017 Annual Screening Assessment, to revoke the latter AQMA, subject to the agreement of DEFRA. The AQMA is still in force.

Technological

Vehicle Original Equipment Manufacturers (OEMs) are preparing for an order of magnitude increase in the sale of electric vehicles EVs in the coming decade. Whereas ten years ago,

⁵ [Air Quality Annual Status Report 2022 - Cambridge City Council](#)

⁶ [2023 Air Quality Annual Status Report \(ASR\) for the year 2022 \(huntingdonshire.gov.uk\)](#)

there were around ten models available, as of 2022 customers can choose between over 100 models of electric car and vans, with Heavier Goods Vehicle (HGV) announcements on the horizon.

Throughout 2022, EVs have consistently accounted for over 20% of new sales, with Battery Electric Vehicles (BEVs) contributing around 15%, bucking the trend of an overall drop in the total vehicle sales. This has been accompanied by an increase in requests by local residents for electric vehicle infrastructure (EVI).

The technology for the majority of charging situations, using various plug-in chargers, appears to be clear. However, new technology will likely emerge as well as innovative ways in which plug-in chargers can be installed into the public realm. CPCA will monitor these technologies and make recommendations for their introduction in the region, including the possibility of running trials.

Legislative

Whilst there are many good 'soft' reasons for an EV programme, it is important to recognise that there are also official 'hard' targets to be met. The UK Government committed the country in June 2019 to a legally binding goal of reducing Greenhouse Gas (GHG) emissions to a net-zero position by the middle of this century. CPCA's local authority partners have adopted targets to support this goal as set out in the section below on Local & Regional Policy.

The large contribution of road transport to the UK's overall UK carbon emissions, as presented previously, is addressed by the UK governments commitment to phase out sales of new petrol and diesel vehicles by 2035 and ensure that all new vehicles are zero emission from this date. This will be achieved through new regulations known as the Zero Emission Vehicle (ZEV) Mandate, due to come into effect from 2024. The commitments made by UK Government effectively guarantee that EVs will become the new normal over the next decade, and therefore it is essential that we expand the UK's EV charging infrastructure network. Local authorities have a significant part to play in this, particularly in providing infrastructure close to where people live.

Action to support the 2035 ZEV Mandate for cars and vans will be key to achieve these goals.

Economic

In the first half of this decade, economic growth has been under pressure with the cost-of-living crisis, post-pandemic challenges and Brexit. Even before the latest economic challenge, growth was a critical piece of the EV puzzle. The uptake of EVs will benefit local economies through regeneration, business growth, upskilling local labour, trade and even inward investment. Destinations will soon need to provide EVI as a hygiene factor to attract visitors and footfall.

The mass-deployment of EVI will require new roles at Chargepoint Operators and down into the supply chain. Furthermore, the installation, maintenance and repair of EVI will provide job opportunities for qualified electricians.

Action will be needed by LAs to ensure that these benefits are secured for local businesses and economies.

Local & Regional Policy

The Local Transport and Connectivity Plan (LTCP) sets out the strategic ambition for transport improvements across the CPCA area. A key focus is to “address the adverse pollution and alleviate the harmful consequences of the transport network” on human health and climate. Decarbonisation of transport, in line with Government’s Transport Decarbonisation Plan ⁷is core, and use of alternatives for fossil fuels is explored in the CPCA’s Alternative Fuel Strategy⁸.

For electrification and chargepoint role out, it identifies key considerations for the area, including:

- A unified vision and approach to chargepoint deployment;
- Prioritisation of areas with low off-street parking access; and
- Ensuring deployment is supported in more challenging/uncommercial areas to deliver an equitable distribution across the region

The CPCA’s Climate Action Plan ⁹provides a means to deliver this ambition, bringing together the local authorities to ensure a fair and equitable network of public chargers are provided, particularly for those residents unable to charge at their homes. This EV Strategy underpins this ambition, setting out how we can act to deploy public chargers and meet the considerations highlighted by the AFS.

Across the CPCA area, the Local Authorities also have their own climate and carbon objectives, which include their ambitions to facilitate EV charging.

Cambridgeshire

Cambridgeshire County Council’s Climate Change and Environment Strategy sets a vision for the County to be net zero by 2045 while supporting residents to make the changes they can to reduce their emissions. Supporting modal shift and removing barriers to take up of low carbon transport is a key priority.

Similarly, the District Councils are working in their areas to support the transport transition. Cambridge City Council and South Cambridgeshire District Council each have their own EV

⁷ [Transport decarbonisation plan - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/612222/transport-decarbonisation-plan-2025.pdf)

⁸ [Document.ashx \(cmis.uk.com\)](https://www.cmis.uk.com/document/ashx)

⁹ [FINAL CLIMATE REPORT LOW \(002\).pdf \(hubspotusercontent40.net\)](https://www.hubspotusercontent40.net/FILES/2023/04/FINAL-CLIMATE-REPORT-LOW-002.pdf)

Strategies, while Fenland, Huntingdonshire and East Cambridgeshire District Councils have, or are enquiring into charge points / planning chargepoints provision across their car parks.

Peterborough

In July 2019, Peterborough City Council declared a climate emergency. Peterborough City Council have committed to make the council's activities net-zero carbon by 2030, and to also support Peterborough become a net-zero carbon city. Transport and Travel forms a key part of this ambition, including encouraging the use of active travel modes, public transport and electric vehicles. Increasing the number of people travelling sustainably in Peterborough will significantly reduce the city's carbon emissions, along with bringing several other vital benefits including improving physical and mental health, improving air quality, reducing travel costs and stimulating the economy and providing jobs to the local area.

Chargepoint Technology and Enabling Infrastructure

Currently chargepoints fall into four main categories in respect of the speed with which they deliver electricity to the vehicle:

- Slow (or Standard) – 3.7 to 8 kW
- Fast – 8 kW to 49 kW
- Rapid – 50 kW to 149 kW
- Ultra-Rapid – 149 kW and over

Typically, these speeds will be suitable for different situations depending on the driver's needs. Slow charging is suitable for long durations, either overnight or all day parking whilst, for instance, parked in a train station or office carpark. Fast charging is suitable for a durations of approximately 2-6 hours depending on the speed of the chargers which ranges from 8 kW to 49 kW. Rapid charging can deliver significant amount of energy in relatively short periods such as a half-hour. For instance, for a typical 60 kWh car battery 50% of its capacity could be charged in as little as 18 minutes. Ultra-Rapid charging brings the charging times down further and come close to the current customer experience of refuelling at the petrol forecourt.

Charging is usually delivered via cables from charging posts, as pictured below. Other chargers can be found contained within lighting columns, bollards and the sockets installed within the surface of the road.

Charging usually is via cable to the chargepoint itself. However, there are technologies which deliver the electricity wirelessly via an induction pad. Whilst this can remove certain obstacles to charging it relies on standardization of the vehicle and interface which has meant that this charging technology is seldom deployed.

CPCA is open to a range of technologies as long as they are in line with our vision of the infrastructure being accessible, safe and sustainable.



Enabling Infrastructure for Installation of chargepoints

The installation of chargepoints depends on the appropriate electrical capacity being delivered to the site via the local distribution network. A high number of Rapid or Ultra-Rapid chargepoints requires significant electrical capacity and this can involve upgrade to the connection to the distribution network. The costs of the upgrade vary significantly based on the distance of the EV charging site from the local distribution assets (such as a secondary sub-station) and these costs are often the largest cost component of the upgrade.

Installation of chargepoints is therefore very dependent on the cost of the distribution network and chargepoint operators can be reluctant to install chargepoints where the necessary financial returns are uncertain. There can be a role for public bodies to invest in long-term infrastructure to support the roll-out of EV charging infrastructure to make certain sites more attractive for the private sector and thus bring charging to key locations which otherwise would not have been taken forward.

The Current Situation across Cambridgeshire & Peterborough

EV take up

Across the region 9,968 battery electric and plug-in vehicles were registered under private keepership as of Q3 2023. Electric vehicle uptake across the region mirrors the national picture, with an almost exponential growth (4).

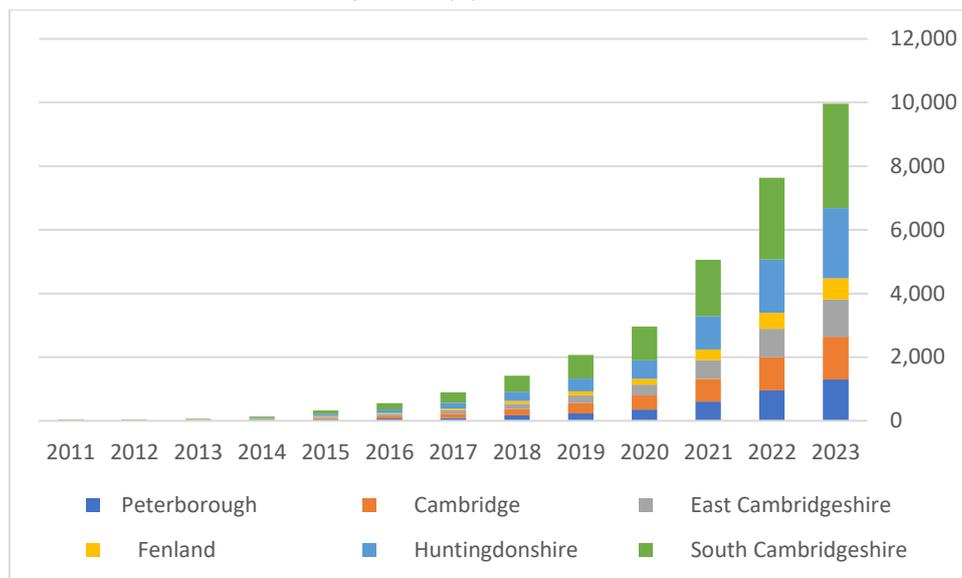


Figure 4 Registered battery electric and plug-in cars under private keepership in Cambridgeshire and Peterborough. DfT Statistics: VEH0132

To compare EV ownership with the rest of the UK and London, CPCA is currently behind the UK total as seen in figure 5 below.

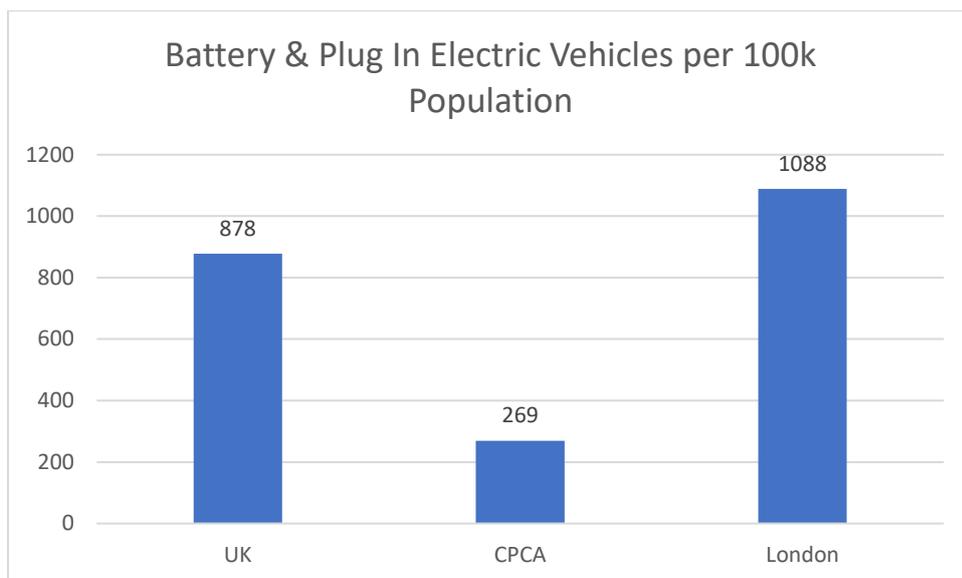


Figure 5: Battery Electric and Plug In Vehicle per 100k head of population (source DfT & ONS)

EV Chargepoints – publicly available

OZEV forecasts for the region, as produced by the NEVIS model run by Cenex, suggests that in 2030 cars and LCVs will require 13,421 sockets split across the four charging types, as per the table below:

Standard (7 kW)	11,419
Fast (8-49 kW)	875
Rapid (50 kW +)	535
Ultra-Rapid (100 kW+)	583
Total	13,412

Table 1 Number of Chargepoints needed for cars and LCVs in 2030 in CPCA, Cenex forecast

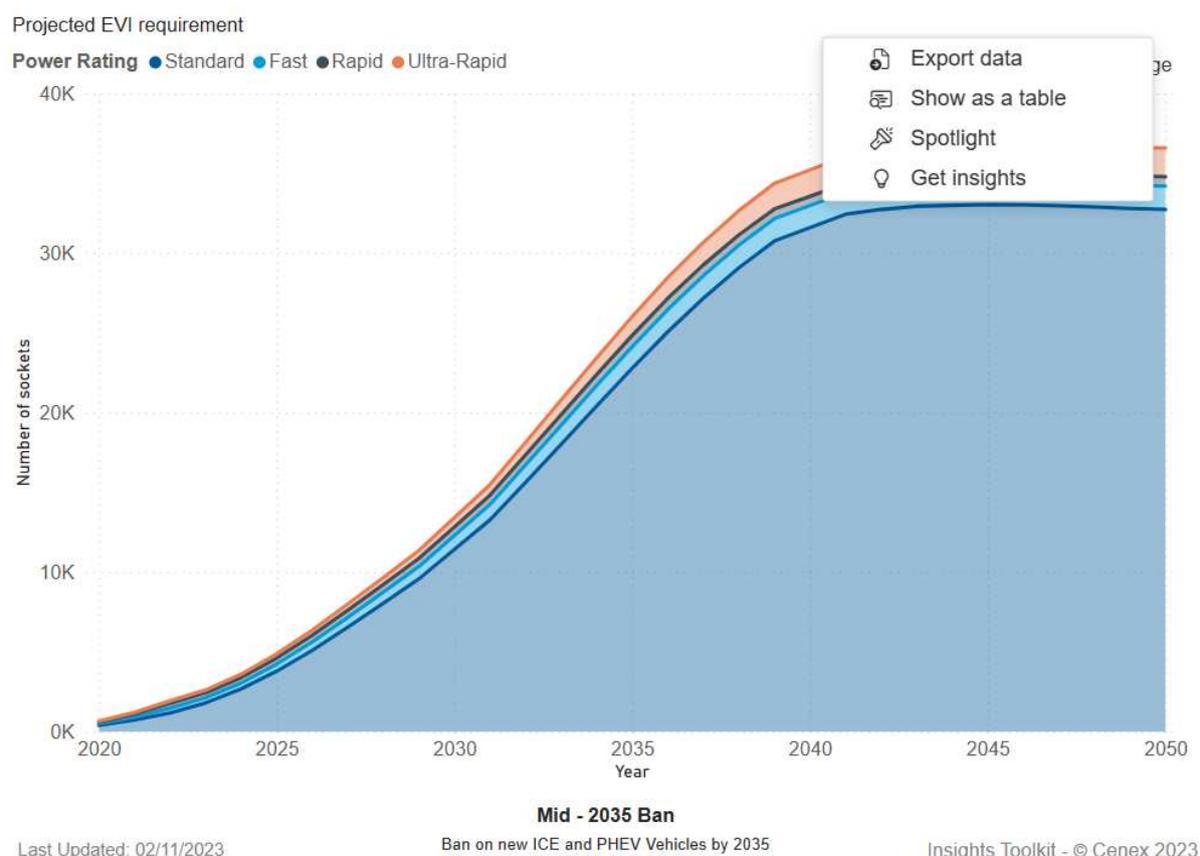


Figure 6: Projected EV Charging Requirement, Cenex

The Local Transport and Connectivity Plan (LTCP) demonstrates that the public charging network across East Anglia is at a relatively early stage of development. The majority of charge points are clustered around key settlements, or distributed along the road network, with relatively few charge points found in between. The LTCP comments that if widespread roll-out of electric vehicles is to become a reality, a concerted effort is needed to provide better charging provision across our geography and that the Electric Vehicle Infrastructure Strategy will ensure a continued focus on the development of the appropriate infrastructure. The LTCP concludes we will therefore support the development of a low carbon transport system through supporting change to new vehicle technologies and lower carbon fuels; promoting lower carbon transport choices; encouraging a transfer to lower carbon vehicles; and education on lower carbon transport issues.

The latest DfT data from October 2023 puts the total number of public chargepoints in Cambridgeshire and Peterborough at 443, consisting of 339 slow/fast and 114 rapids (Figure 7). The majority of these chargepoints are in private sector settings: supermarkets, service stations etc.

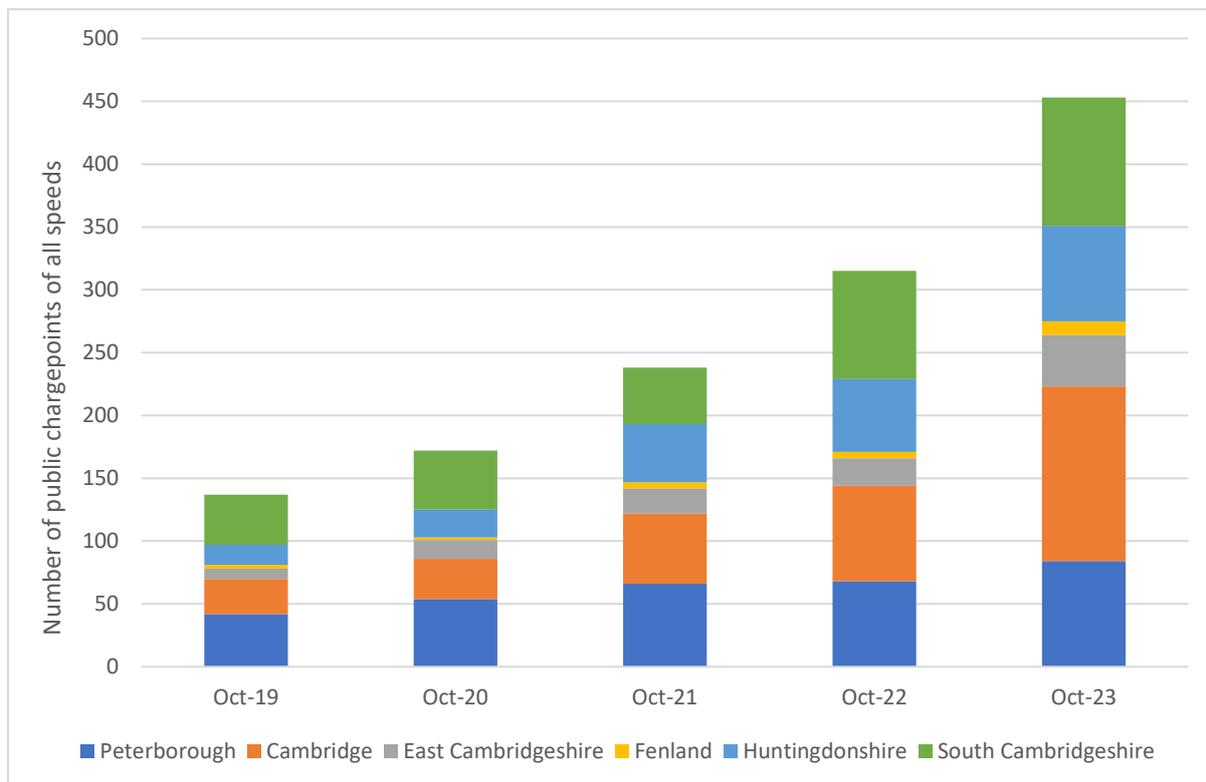


Figure 7 Number of public chargepoints across Cambridgeshire and Peterborough. ONS Data

Across the region, public chargepoint provision is unevenly distributed. Fenland has the fewest chargepoints - likely due to the low numbers of electric vehicles in the area undermining a business case for installations. We must work to develop a network that delivers a transition away from fossil fuels, enabling all our communities to switch.

Map of Current EV Infrastructure locations

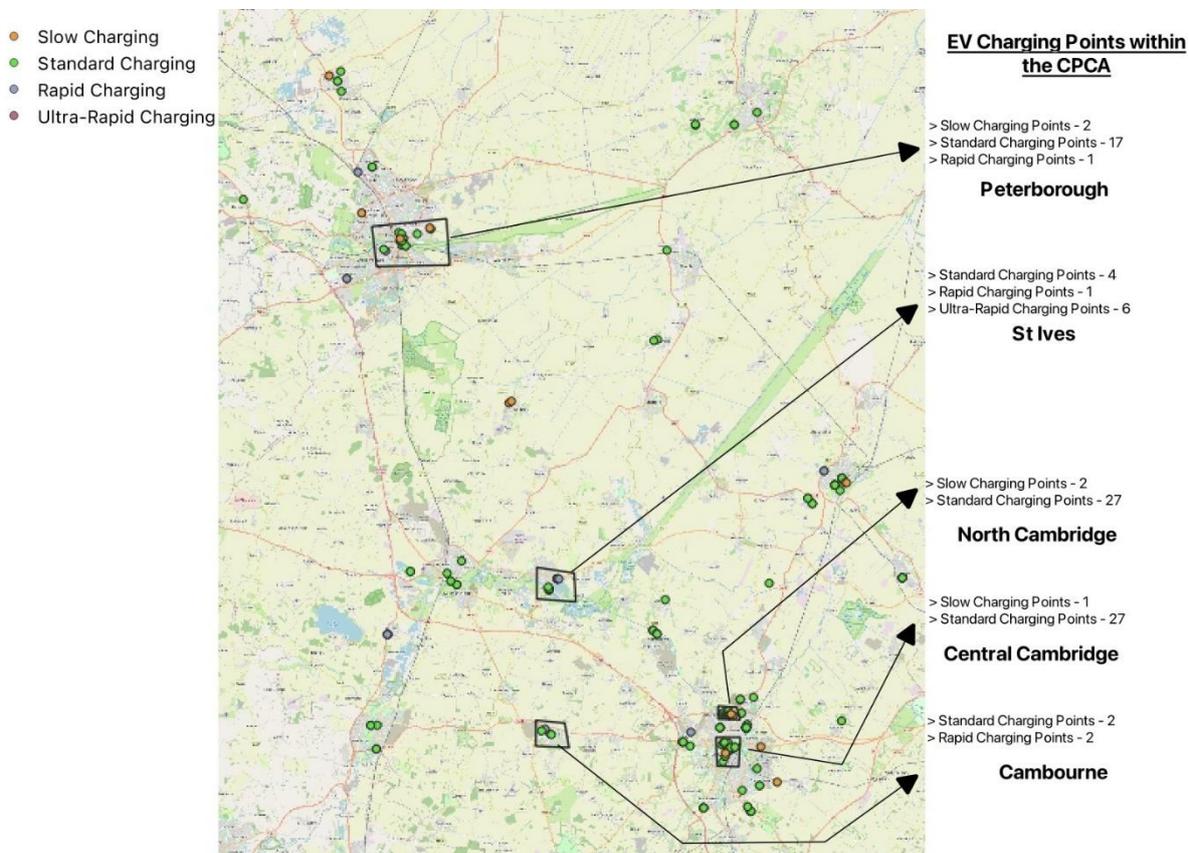


Figure 8: Map of EV chargepoints locations (ZapMap)

As can be seen in the graph below, the East of England has 39 chargepoints per 100,000 head of population, putting it below the average of 60 across the UK. Whilst comparisons with other areas of the UK may be inexact due to demographic differences, it would appear that CPCA has to install a greater number of chargepoints to enable the transition to EVs.

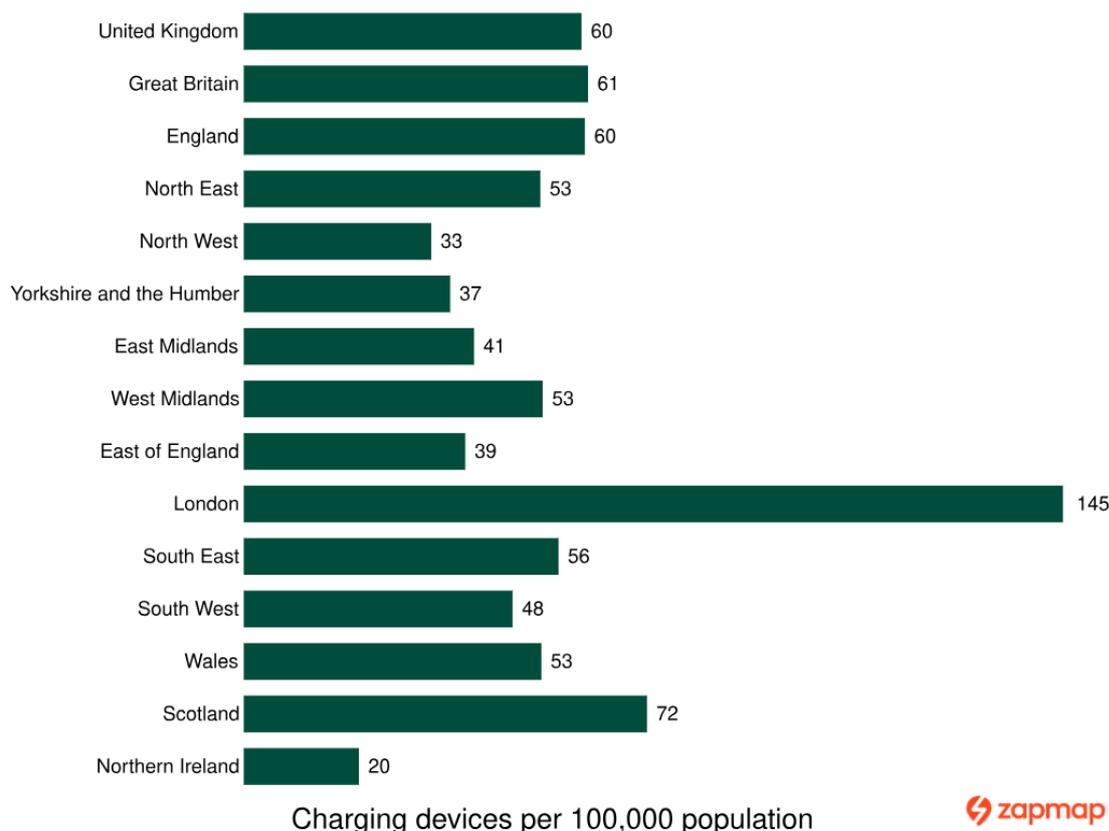


Figure 9: Charging devices per 100k population (ONS)

Barriers to EV uptake

Consumer surveys suggest there are a number of commonly identified reasons why people do not make the switch to an electric vehicle. Many of these will be addressed within the Strategy:

Identified Challenge	How we can address them
Upfront cost	Whilst the CPCA and local highways authorities cannot reduce the costs of EVs, the CPCA can work with our communities to ensure they are aware of the longer-term financial benefits of switching from an ICE vehicle. Engagement with communities to “myth bust” and enable everyone to understand the rapidly evolving technologies on offer can be undertaken.
Range anxiety	
Uncertainty over the technology	
Reliability of chargers	The CPCA and Highways Authorities can ensure through delivery and procurement approaches that there are sufficient numbers of public chargers where they are most needed and work with chosen contractors to ensure reliability and accessibility
Availability of Chargers	

Identified Challenge	How we can address them
	is prioritised. This needs to be communicated to public in realtime – smart monitoring.
Grid Capacity	Local Area Energy Planning – Planning where critical electrical infrastructure is located and scaled to ensure access to the network is available in areas where infrastructure is needed. Peterborough already has a plan, and Cambridgeshire is currently developing theirs.

Lack of solutions for residential areas : Requests

The Council, and Districts, are receiving increasing numbers of requests for on-street chargepoints: the majority are from Cambridge residents. While absolute numbers of requests are low, these have been unprompted, and we anticipate that should a “call” be put out for suggested locations the response could be significant.

Cambridge	57	Huntingdonshire	5
East Cambridgeshire	4	South Cambridgeshire	9
Fenland	3		

Similarly, there have been enquires regarding permission to trail cables and other “DIY” solutions which pose a potential safety and equity risk on the highway. The potential to charge cars parked on the street and connected to a house electrical network is discussed below.

Key Focus Areas - Charging Infrastructure

Home Charging

This is where a resident has their own private EV chargepoint installed on their property. In most cases this is only an option where residents have off-street parking. As would be expected with a mixture of urban and rural environments, there is a wide range across the region of those with and those without off-street parking and opportunity for off-street charging. The table below shows the percentage of those properties in each local authority which rely on on-street parking and therefore will need charging solutions suitable:

Peterborough	38%
Cambridge	38%
E Cambridgeshire	20%
Fenland	29%
Huntingdonshire	22%
South Cambridgeshire	16%

Table 2: Percentage of households reliant on on-street parking (WSP Analysis)

Installing your own charger

Various reports suggest that over 80% of EV charging happens at home. Residents who have access to off-street parking can install a home-charger connected to their home electricity supply. These are often the most convenient and cheapest way of charging. There are lots of options out there, and we can work to signpost our residents to authoritative guidance and information.

Some homes, particularly those in private rentals, may be eligible for government grant to support the purchase and installation of a chargepoint. We can work with landlords and tenants to ensure all are aware of the financial benefits currently available to them.

All new build homes in England will be fitted with electric vehicle charging stations as standard, under new building regulations designed to promote the uptake of low-emission vehicles.

EV Chargepoint Crossing-over

EV Crossing-over is where a resident has their own chargepoint on their property but no associated off-street parking. Instead the vehicle is parked on-street, and the charging cable “crosses-over” the footway.

There are concerns about the safety of these technologies as they may introduce hazards to pedestrians. However, CPCA will support the various highway authorities within the local

authority partners to explore technology options, some of which are being trialled in other parts of the country.

Residential EV Charging

This focuses on where residents don't have off street parking so need to be enabled to charge close to home.

On-Street Charger Installations

Public on-street charging is primarily focused on enabling those residents who cannot charge at home to do so at, or close to, where they would normally park.

These chargers will tend to be slower (c.7kW) chargers to reflect the longer durations that residents tend to park for when at home. These also tend to be compatible with the widest range of different vehicles. Where chargers are installed, we would generally seek to designate the bays as "EV only" to ensure access is maintained. Where such changes to parking is considered a requirement, formal Traffic Regulation Order processes would be followed, and the local community consulted.

There is no universal guidance on what is acceptable on the highway in terms of the physical installation design. This is left to the relevant highways authority to agree.

Finding suitable locations can be a challenge, and we set out some principles for this in section 0. Charging points should not be considered the personal charging point of any individual but will be an asset for the community to access.

Destination Charging and Charging Hubs

This focuses on where EV drivers may want to charge either at a destination or en route. This includes the Council run car parks, public buildings such as offices and leisure centres and, where appropriate, on-street parking in town centres.

Car Parks (incl. Park & Rides)

Across Cambridgeshire and Peterborough, there has been a focus on ensuring local authority car parks have EV chargers.

In Peterborough, there are currently 22 public charging spaces (as opposed to points) as well as the 4 e-Taxi rapid and 3 for our own service vehicles. 4 public charging are on street and 18 are in the car parks.

Across Cambridgeshire the District Councils are already installing across their car parks.

There are several chargepoints across the Cambridgeshire park and ride locations, with officers closely monitoring how further installations could be facilitated. We have a commercial arrangement with Tesla at Trumpington P&R. Alongside this we have a separate commercial arrangement with BP Pulse at Trumpington and Milton.

St Ives and Babraham P&Rs are having significant numbers of chargers installed as part of the wider Smart Energy Grid projects, both of which are now in construction. Consideration for the other P&Rs is underway, with officers seeking to align the chargepoint approach (at a minimum pricing) across all sites.

General Principles for chargepoint locations

When we assess where to locate charging infrastructure there are a range of elements to consider. Each site will be different, but in broad terms:

- Provide charging points in the places that people need them, especially rural areas, but not in locations that encourage additional car use.
- Focus on areas where residents cannot make the switch to EV without access to a public charging network, but we want to ensure a good geographical spread across the county.
- Ensure any charging points we enable are complementary to, and not in direct competition to others already operating in the area.
- Engage with the market to encourage them to invest in charging infrastructure within the region and to ensure any additional public charging infrastructure is complementary to privately owned charging points.
- Initial efforts will focus in areas where we predict there will be more charging points required. These are areas where there is less access to off road parking, where uptake trends are fastest and where there are more commuter journeys happening.
- Cambridgeshire and Peterborough residents will have the opportunity to suggest suitable specific sites for charging points to be installed.
- Individual sites will be subject to full feasibility investigations including an assessment of local grid capacity.

Ensuring Equitable Access to Chargepoints

Ensuring equitable access to chargepoints is a key objective of CPCA as the transition to electric vehicles currently favours those with higher incomes and home-charging with off-street parking. Estimates included above suggest that up to 40% of households do not have access to off-street parking and charging and it will be critical to address this section of the population if they EV transition is to be achieved.

Therefore it is key that CPCA supports the installation of a publicly accessible chargepoint network and one aimed particularly at those who have to rely on this as they do not have access to a domestic charger. This could mean:

- Identifying locations which have a high density of cars parking on the street which need public charging facilities and exploring the various mechanisms (use of government grants or concessions) to deliver the required chargepoints;
- Supporting the implementation of electric car clubs to assist in the transition to electric vehicles in particular locations;
- Identification of publicly owned car parks close to areas of housing without off-street parking which could be used for overnight charging. The necessary infrastructure might need to be put in place, such as improved lighting and security, to encourage users and ensure safety and security.

ChargePoint Accessibility – PAS1899 BSI/Motability

Nationally it is expected that by 2035 when the ban on new ICE vehicles come into force, we will have over 2.5 million disabled drivers on UK roads. Ensuring everyone in our community are able to easily access and use chargepoints infrastructure is vital.

To support Local Authorities, British Standards Institute produced best practice guidance – PAS 1899:2022 – which sets out how to make EV chargepoints accessible to all. As far as practicable, all public chargers installed by local authorities across the CPCA area will to comply with the best practice set out in this guidance.

The best practice guidance sets out standards¹⁰ on:

- Open data: “all drivers should be able to locate available and working chargepoints that suit their needs easily when they need to charge their vehicle, with openly available static and dynamic (i.e. data types that are subject to change on a regular basis such as whether the chargepoint is in use or available) data.” CPCA will require all chargepoint operators providing service on publicly owned land to make their data available to the combined authority as well as any databases and platforms used by central government or consumers.
- Pricing transparency: “consumers should be able to understand and compare pricing offers across the UK charging network, using a pence per kWh metric which is clearly displayed in advance of charging. “

¹⁰ PAS 1899:2022 Electric vehicles – Accessible charging – Specification

- **Reliability:** consumers should expect a 99% reliable and with a free 24/7 helpline when consumers experience issues; this will ensure that we eliminate any anxiety about chargepoints not working and any inconvenience which comes with faulty equipment.
- **Payment:** accessibility is not just about ensuring all can use the chargers – we must also ensure they are as easy straight forward to use as possible. Increasingly, current EV drivers are sharing their frustration at the proliferation of payment mechanisms required to use different types of chargers. In response, Government is bringing forward new requirements for all chargers funded by public sector grants above 7.1 kW to include non-proprietary payment methods. This could include contactless, pay as you go capabilities.

We will ensure that all chargers we install, where possible, will have this payment option. Where there are chargers already installed, we will explore the possibly to retrofit, however it is likely these will need to be transitioned as their replacements dates come up.

These standards are also contained within the Public Charge Point Regulations which came into force in 24 November 2023.

Communication, Advocacy and Outreach

We understand the concerns that have been raised and the need for more information to be shared to give drivers and business the confidence they need to go electric. Some of these points are addressed in this strategy. There is also an increasing body of Government and industry guidance available that dispels many of the misconceptions about EV's and guides drivers through the electrification journey and vehicle and charger funding available.

There are a number of community-led projects to install chargepoints for residents and/or their wider communities. For example, the resident association at Marmalade Lane in Orchard Park are installing charge points in their car parking area. Similarly, several Parish Councils are working with South Cambridgeshire District Council to install chargepoints at their parish halls. There are initiatives to help resident groups and other community bodies install their own chargepoints without waiting for government funding. For instance, the ChargeMyStreet (www.chargemstreet.co.uk) community benefit society which installs and operates community EV chargepoints, raising money through community shares.

We can take learning from these schemes and, working with our partners such as CambsACRE to share these schemes and encourage and empower our communities to act themselves.

We will ensure our communities have easy access to this information and local examples. We will host events, such as the Energy Saving Trust “Go Electric” events to bring this information to our communities, empowering them to decide what will work best for them.

Public Transport

In July 2021 the government published the Transport Decarbonisation Plan¹¹, which details the government's intended strategic direction for decarbonising the transport sector. The paper details the intention to move mobility away from motor vehicles (irrespective of fuel propulsion system) firstly to active travel (e.g. cycling, scooting and walking) and secondly to public mass transit (e.g. bus, train and tram). Below summarises the current situation:

The first two electric double-deckers (dds) were in service in late 2019 and more recently PCA delivered 30 electric buses in Cambridgeshire in the last year through the first iteration of the ZEBRA funding. There are ambitions to continue the electrification of buses in the region. A further 30 electric buses are planning to be introduced into Peterborough in the coming year and there is an ongoing study to find an appropriate depot to install with the required electric vehicle charging.

Looking longer-term, there is an ambition to introduce a significant number of electric buses over the next 10 years or so at approximately similar volumes to the projects undertaken to date. However, it should also be noted that there are ambitions to introduce hydrogen vehicles for longer journeys so battery electric vehicles are not the only technology being considered.

There are two broad trajectories for realising this electrification target within the context of bus ownership:

Within an Enhanced Partnership, the necessary investment would likely continue (or be required) by central government via such funds as ZEBRA. However, the nature of ZEBRA funding means that the necessary funding cannot be guaranteed and so CPCA is reliant on this external funding or the ambitions of the operators themselves.

- Within a franchising arrangement where CPCA gradually mandates the move to electric buses; this gives CPCA more certainty on the electrification pathway. Within this option, CPCA would be interested to understand how devolved central government spending on buses could be managed by CPCA to accelerate the deployment.

Active Travel

The Department of Transport has been promoting active travel as a means of reducing carbon emissions and improving public health. In July 2022, the DfT published a framework document for Active Travel England (ATE), which will lead the delivery of the government's strategy and vision for walking and cycling where half of all journeys in towns and cities are walked and cycled by 2030.

¹¹ [Transport decarbonisation plan - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/107222/transport-decarbonisation-plan.pdf)

Electrification of bicycles is a growing trend. In 2020, the number of electric bikes sold in the UK increased by 63% compared to the previous year, which was the sharpest growth in the 2017 to 2022 period. Electric bikes will predominantly be charged at home, however cycle hire schemes offering electric bikes, as well as Mobility Hubs (see below), may need to offer electric charging facilities. These will be different technologies than those needed for cars and can be easier, and cheaper, to install.

Mobility Hubs

Mobility hubs are a recent concept, developing upon the idea of interchange. This has, over the past decades been traditionally applied to public transport. The concept has been enhanced to apply more broadly to encouraging more sustainable travel including active travel and car-share for example. They aim to provide convenient and seamless connections between different modes of transportation, reducing the need for private car ownership and promoting sustainable transportation options.

Mobility Hubs can have a particular role to play in rural areas where those without access to private cars can be particularly impacted. In the context of EV charging, mobility hubs in rural areas can be good locations for car club locations as well as places where those without access to off-street parking and charging can bring their vehicle to charge.

Hubs generally include public transport, biking, micro-mobility, and car-sharing. They could also be sites for EV charging where drivers switch to other transport modes, such as public buses or e-bikes. EV charging infrastructure may therefore be required at some mobility hubs as part of the range of services they can offer to encourage both EV adoption as well as take up of other modes.

Shared Transport

Through the LTCP, Councils are working to ensure that transport is not only cleaner, but that congestion is reduced, and places are better linked by public transport and active travel routes.

For those who only occasionally make journeys that aren't a good match with public transport, there are already options that can negate the expense of owning and maintaining a personal car. Whilst electric bikes have seen a huge uptake, they will not suit everyone, so we will work to ensure car clubs are expanded where possible. We will ensure that charging facilities are co-located with these services to enable car club vehicles to be electric too. Even in our rural areas, where a car club might mean a resident could switch to one vehicle rather than two, we can see big benefits.

For those that don't want to drive or ride themselves, and traditional public transport isn't an option, ride hailing services and taxis may be an option. Working with such services to ensure infrastructure is available to enable them to switch to electric will be important. Already all taxis licenced by Cambridge City Council must be ultra low or zero emission, and rapid chargepoints for taxi's have been installed to facilitate this change. Other District Councils are looking at similar approaches.

Cambridgeshire

Taking these together, in Cambridgeshire have worked with our Local Planning Authorities to ensure chargepoint provision is “designed in” to any development. It incumbent upon the developer to provide suitable levels of EV charging points, as may be required to meet OZEV requirements, within each dwelling curtilage, or in designated areas (private laybys/ small communal car parks etc). These must be provided without need to install on the adoptable public highway.

Additionally, we recommend that the promoter of any site should carefully consider the siting of EV charging in relation to the overall development management strategy, as recommended in the National Design Guide, such that ‘management and maintenance responsibilities are clearly defined for all parts of a development’.

Peterborough

Peterborough’s Local Plan Policy LP13 states that all development requiring parking provision should be designed, unless there are exceptional design reasons for not being able to do so (e.g. listed building constraints or site-specific factors), to incorporate facilities for electric plug-in and other ultra-low emission vehicles, or as a minimum the ability to easily introduce such facilities in the future.’

How we will deliver

There are two main government funding schemes available to us: the On-Street Residential Chargepoint Schemes (ORCS) and the Local Electric Vehicle Infrastructure (LEVI) Scheme. These have different terms but are both designed to support local authorities to deliver charging infrastructure in the more challenging locations where the need is greatest.

Commercial Models

There are a range of commercial options available to local authorities for installing, operating and maintaining EV chargepoints. These models will depend on the level of investment available as well as the appetite towards risk and ownership of assets. There are broadly two choices:

Own and Operate Model: An approach in which a local authority appoints a supplier to install and manage chargepoints on council-owned land for the contract period and fully funds the installations, typically using grant funding and local authority capital. Operating and maintaining the chargepoints would be contracted to a third party. The main advantage of this approach is the control it gives to a local authority over the location of the chargepoints and the tariffs. However, this approach comes with financial risk and may require significant capital investment.

Concession Model: The local authority grants the chargepoint operator the right to offer a service on local authority owned land at their own commercial risk. The concession or lease could be granted in return for either payments per bay or a share of the revenue generated. The chargepoint operators is responsible for installation through to operation and maintenance for an agreed contract period for a fee. This could either involve no funding from local authorities or could be match funded by the authority which could give more control and develop the less commercially viable sites. This approach lower the risk and investment for the local authority whilst giving up more control over, for instance, tariffs.

Where financial business models are strong we will explore investing our limited capital funds, but in the majority of cases we anticipate use of either government grants and/or private sector investment. Therefore our preferred option for delivery and ongoing management, operation and maintenance is via a concession model using a third party contractor who specialise in EV charging and understand the detail of how to manage such networks.

We will develop rolling annual delivery plans to ensure we are delivering at the pace and scale we need to support our residents to transition.

Governance

Governance of the EV strategy will sit with the Combined Authority, with responsibility for execution by the respective local authority partners. Funding applications, such as LEVI and ORCS will be undertaken by CPCA, with procurement of EV chargepoints the responsibility of local authority partners as funds come available.

Recommendations for ongoing governance and monitoring:

- Create an EV taskforce with representatives from across the authority to co-ordinate activity, negotiate with chargepoint operators and liaise with the DNO;
- Monitor key metrics regarding EV uptake, chargepoint installation and usage to enable future planning;
- Co-ordinate best practice and use of standards relating to EV chargepoint design, installation and fit within Transport policies;
- Act as a central point of EV information across the authority.

Action Plan

Detail to be confirmed

Action	Target Date	Responsible organisation
Publish EV Infrastructure Strategy (draft is scoped out, write, get approval)	March 2024	CPCA

Establish EV Infrastructure Governance within each LA the feeds through to the existing CPCA's Climate Action Plan governance	March 2024	CCC / PCC
Develop and submit a LEVI capital fund proposal(s)	TBC once understand deadlines	CCC / PCC
Engage with constituent Councils to take forward as a collective	Through timescale of project	CCC
Soft market testing	Dec 2023	CPCA / CCC / PCC
Produce data to inform site selection and mapping of chargepoints	Feb / March 2023	CCC / PCC
Establish appropriate route to market for each LA, prepare and launch EV infrastructure procurement(s)	Summer 2024	CCC / PCC
Develop a 5-year delivery plan for EV infrastructure	June 2024	CCC / PCC
Deliver installed and commissioned charging infrastructure	2025 onwards	CCC / PCC
External engagement and promote collaboration on schemes (e.g. with tier 2 and adjacent local authorities, or constituent authorities if in a Combined Authority)	Dec 2023 onwards	CCC