

Phase 1 Essex Electric Vehicle Infrastructure Strategy DRAFT



February 2023

SAFER
GREENER
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Foreword

With the continuing global climate crisis, it is important that we embrace new technologies to help the Essex population transition to using Electric Vehicles (EVs) for necessary journeys that cannot be completed by sustainable transport. By 2030 there will be no new petrol or diesel cars for sale in the UK and by 2035 the sale of new plug-in hybrid vehicles will be phased out. Essex County Council are committed to becoming net zero by 2050 to limit the impacts of climate change.

Switching to EVs will contribute to the net zero goal and we need to ensure that people have access to a reliable, convenient, accessible and fairly priced network of EV charge points. The task is hugely challenging, not least because the EV market is constantly evolving. Essex County Council cannot do this on our own so we will enable partners to deliver supporting infrastructure across Essex.

We will deliver "the right charger and in the right place" by applying 6 strategic objectives. We will ensure that the charging network is equitable and accessible to all residents. We will guide and promote a resilient and safe charging network which represents good value for money throughout its lifespan. Individuals and businesses will be better connected where car travel is necessary, to support the uptake of EVs.

Working with partners and key stakeholders we will deliver and enable these outcomes:

- Residential on-street charge points
- Charge points at key destinations
- EV charging integrated with sustainable transport, shared & future mobility options
- ECC internal fleet electrification
- Joined up working with neighbouring authorities, regional transport bodies and National Highways
- Policy, Guidance and Standards to ensure others deliver the right infrastructure, safely, accessibly, fairly, and reliably throughout Essex.

We are mindful that due to the evolving EV market this strategy should be for a short period of time, therefore this is Phase 1. It will look at a shorter 2-3 year timeframe to address charging infrastructure for cars and vans to ensure that those who purchase EVs have the charging network in place.

Essex County Council are motivated by the need to be net zero by 2050. A reduction in greenhouse gas emissions will lead to an improvement in air quality, a resilient, connected County and a safer, greener and healthier Essex.

Photo of Cllr



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Executive Summary

Essex County Council have committed to delivering a target of **net zero by 2050** in response to global action to limit climate change. Domestic transport, particularly private car use, is the largest contributor of greenhouse gas emissions and to poor air quality of any sector across the UK economy.

The UK Government is phasing out the sale of new petrol and diesel cars by 2030 and plug-in hybrid electric vehicles (PHEVs) by 2035 to accelerate the uptake of zero emission vehicles. A switch to zero emission battery electric vehicles (BEVs) can contribute to the net zero goal and people will need access to a reliable, convenient, accessible and fairly-priced network of EV charge points.

Although we anticipate that most of Essex's charging infrastructure will be delivered by the private sector, government funding will be vital to fill gaps in provision, help maintain consumer confidence and accelerate the transition. We have a role to play in securing this funding and enabling the delivery of infrastructure to support residents such as those with limited access to off-street parking. This document sets out our Vision and Phase 1 of a Strategy to help decarbonise transport by encouraging and providing for the uptake of EVs where car journeys are necessary.

The EV market is rapidly evolving, and the Phase 1 Strategy deliberately looks at a shorter 2-3 year timeframe to specifically address charging infrastructure for EV cars and vans. Separate strategies will be developed to provide for alternative clean and zero emission fuels. The Phase 1 Strategy

will need to be reviewed and refreshed regularly to ensure it meets wider policy commitments, such as the emerging fourth Essex Local Transport Plan (LTP4), and responds to emerging guidance, technologies and innovation. **A supporting Technical Evidence Base has been prepared as an appendix to this strategy for further information and more detailed analysis (INSERT LINK).**

We are at the start of this journey and our Vision is to deliver **“the right charger and in the right place”** by applying the following strategic objectives:

- ➔ To deliver an **equitable** electric vehicle charging network that promotes social justice through inclusive design, fair pricing and is accessible to all residents.
- ➔ To deliver a **healthy environment** for all by helping decarbonise the transport system, reducing emissions from transport and improving air quality.
- ➔ To guide and promote a **resilient** and **safe charging** network with infrastructure that is reliable, accessible, safe, compatible, easy to use and represents good value for money at installation and during its life.
- ➔ To **integrate** EVs with sustainable transport and future mobility solutions to support a reduction in overall car use.
- ➔ Better **connecting** residents, organisations and visitors throughout Essex, **where car travel is necessary**, to support the uptake of electric vehicles.
- ➔ To **create better places** using inclusively

designed infrastructure that is sensitively placed in the right locations, complements our public spaces and minimises the impact on all members of society.

The strategy focuses on how we can deliver EV charging infrastructure in the county and what we can enable others to deliver up to 2025. These measures will help pave the way for our longer-term ambitions for charging in the county. We will look to deliver and help enable the following through engagement with residents and organisations:

- ➔ On-street charge points for residential users where car travel is necessary.
- ➔ Charge points at key destinations that do not encourage increased car use.
- ➔ Integration of EV charging with sustainable transport, shared and future mobility options.
- ➔ Electrification of our own council fleet to lead by example.
- ➔ A joined-up approach to wider network and cross boundary integration with neighbouring authorities, [Transport East](#) and National Highways.
- ➔ Policy, guidance and standards to make sure others are delivering the right infrastructure safely, accessibly, fairly and reliably across the county.



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Introduction

Climate change and committing to net zero
Essex County Council (the council) have [committed to reducing greenhouse gas emissions to net zero by 2050](#)¹ in response to global action to limit climate change. Electric vehicles (EVs) will play an important role in achieving this as part of a wider sustainable and integrated transport network. In Essex, 49%¹ of CO₂ emissions are from transport, and it is the largest contributor to poor air quality across any economic sector. Over half of these emissions come from cars and a third from heavy and light goods vehicles. The UK Government is phasing out the sale of new petrol and diesel cars by 2030 and plug-in hybrid vehicles by 2035 to accelerate the transition towards all new vehicles being zero emission vehicles.

A switch to EVs can contribute to the net zero goal and people will need access to a reliable, convenient, accessible and fairly-priced network of EV charge points. However, a switch to EVs alone **will not be enough** and EVs also come with their own environmental and societal challenges. The delivery of publicly accessible EV charge points therefore needs to be within the framework of [the Council's plan for levelling up the county](#),² reducing the need to travel, shifting journeys to sustainable options and, where necessary, transitioning vehicle use to EVs.

The need for an EV Infrastructure Strategy

We are at the early stages of planning for EVs. An initial Phase 1 Strategy is needed to set out what we want the charging network to look like and how we want it to be delivered by both the public and private sectors for a **safer, greener and healthier** Essex. Our emerging transport vision for the county will be

promoted through a new fourth Local Transport Plan (LTP4), due to be completed in 2024, which includes four strategic themes:

- ➔ Decarbonisation.
- ➔ Supporting People: Health, Wellbeing & Independence.
- ➔ Creating Sustainable Places and Communities.
- ➔ Connecting People, Places and organisations.

This strategy will align with all four themes and will directly help deliver the decarbonisation theme through our preferred approach of:

- ➔ **Avoiding** the need to travel.
- ➔ **Shifting** trips to the most sustainable form of travel.
- ➔ **Decarbonising** residual and necessary car travel.

The EV market is rapidly evolving, and our Phase 1 Strategy intentionally focuses on what can be done in the next 2-3 years (up to 2025) to enable publicly accessible EV charge points in locations where:

- ➔ Alternative and more sustainable modes of travel are limited and car travel is necessary.
- ➔ There is little opportunity for private off-street charging.
- ➔ There are opportunities to integrate with sustainable travel.
- ➔ It is commercially unattractive to the private sector.

The strategy will be refreshed by 2025 (Phase 2 Strategy) to look at longer-term private car use and EV uptake. This will start to explore the supply of renewable energy to EV charge points, and how we can enable the conversion of public transport, taxis and freight vehicles to cleaner fuels. Separate

strategies will also need to be developed to provide for alternative clean and zero emission fuels, such as hydrogen.

The Challenge

The EV strategy will need to start addressing the challenges, and some of the misconceptions, of delivering charging infrastructure in Essex, such as the following:



Encouraging the necessary shift to electric vehicles to help reach the UK Government's and Essex's commitment to achieve net zero carbon by 2050.



Supporting the transition to alternative fuels amidst the need to reduce the overall need to travel, reduce car use and encouraging active travel and public transport use.



Tackling the social and economic inequalities of the provision of EV charge points, costs and improving accessibility for all residents.



Supporting new industry to bring investment and job opportunities for Essex as part of our wider levelling up agenda.



Addressing physical barriers, such as power supply, and perceived practical issues reported by the wider public³ around the cost of EVs, range anxiety, and limited numbers/quality of charge points (charge anxiety).



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¹ [Net Zero: Making Essex Carbon Neutral report \(Essex Climate Action Commission, 2021\)](#)

² [Everyone's Essex the Council's plan for levelling up the county: 2021-2025 \(Essex County Council, 2021\)](#)

³ [Common Misconceptions About Electric Vehicles \(Office for Zero Emission Vehicles, 2022\)](#)

The Vision and Strategy Objectives

The Draft Vision

Our overarching draft Vision is to deliver:

“the right charger and in the right place”

This means:

- ➔ Where car or van travel is necessary, electric vehicle users will be assured there is an accessible, reliable, easy-to-use, safe and fairly-priced charging network by 2030.
- ➔ Supporting communities with the social and economic inequalities of using and charging an EV.
- ➔ Tackling the environmental priorities of reducing car travel and decarbonising vehicle emissions across the county.

This sets out the principles of the longer-term ambitions we have for the charging network in Essex, up to and beyond 2030, and for this Phase 1 strategy to start addressing over the next 2-3 years. It is acknowledged at this early stage, that EV battery, charging and vehicle technology is rapidly evolving, and the strategy will need to be adapted and refreshed (Phase 2) through continued engagement with the public, organisations, industry and our public sector partners.

Strategy Objectives

The draft Vision prioritises a publicly accessible network that supports the transition to EVs, amidst reducing car use, and tackling the perceived inequalities of accessing and using EVs in the county. We have developed six strategy objectives (Figure 1) to build on each other and start delivering this Vision to help decarbonise travel in Essex for residents, organisations and visitors. The strategy sets out our role and how we will deliver these objectives in the next 2-3 years.



Figure 1
Strategy Objectives

Our priorities

We have developed a set of priorities for each of our six strategy objectives to guide delivery, improve customer experience and encourage the private sector to follow:

Objective 1 Social Equality: to deliver an **equitable** electric vehicle charging network that promotes **social justice** through an accessible, inclusively designed and fairly priced network to all residents.

Objective 2 Healthy Environment: to deliver a **healthy environment** for all by helping decarbonise the transport system, reducing emissions from transport and improving air quality.

Objective 3 Resilient and Safe Network: to guide and promote a **resilient** and **safe** network with infrastructure that is reliable, accessible, safe, compatible, easy to use and represents good value for money at installation and use during its life.

Objective 4 Integrated Network: to **integrate** EVs with sustainable transport and future mobility solutions to support a reduction in overall car use.

Objective 5 Connected Network Meeting Essential Demand: better **connecting** individuals and organisations throughout Essex to support the uptake of electric vehicles **where car travel is necessary**.

Objective 6 Creating Better Places: create **better places** using infrastructure that is inclusive, sensitively placed, designed to complement our public spaces and minimises the impact on all members of society.



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The council's role

The need for public sector intervention

The UK Government have committed⁴ £2.5bn since 2020 to increasing charge points with a particular focus on local on-street residential charging and targeted plug-in vehicle grants. The Government see local authorities as having a crucial role in supporting the transition to EVs, by:

- ➔ Proactively supporting and delivering the rollout of electric vehicle charge points.
- ➔ Helping to ensure the transition is integrated into wider local transport and community needs e.g. park and ride, e-car clubs and mobility hubs (Figure 2).
- ➔ Adapting public assets, such as highway land or local car parks, to deploy charge points (Figure 2).
- ➔ Developing policies and guidance to support and define the public charging network.

Our role

The council's primary role will be to work with our local authority partners, lead by example and ensure best practice is applied to the roll out of publicly funded EV charge points. We will enable the delivery of infrastructure, mainly by others and sometimes directly, through guidance, policy, securing government funding and engaging with key public and private organisations.

The private sector will continue to play a pivotal role in expanding the EV charging network and there is a longer term goal, to work towards a self-sustaining network, through private investment and the right policy framework. However, more will

need to be done in the shorter term and the council can work with partners to fill some gaps in the market that the private sector may discount, examples include:

- ➔ Delivering an inclusive network that meets our [Everyone's Essex plan](#) to level up the county.
- ➔ Overcoming delays in the delivery of less profitable and commercially unattractive areas.
- ➔ Addressing compatibility issues across the multiple EV charge point operators competing in the marketplace.
- ➔ Creating a well maintained and high quality network.
- ➔ Ensuring a fairly priced network, with easy to understand payment options, that delivers value for money to users.

Equally, an oversupply of publicly funded infrastructure in the wrong place must avoid:

- ➔ Undermining walking, cycling and the use of public transport.
- ➔ Underutilised assets, public cost and burden of operation and maintenance.
- ➔ Competing directly with the private sector.



Figure 2

(Examples from top):

- Chelmer Valley park and ride (Source: [Electric Blue Charging](#))
- On Street Charging (Source: [Trojan Energy](#))
- E-car club mobility hub concept (Source: [SHARE North](#))

⁴ [Electric vehicle charging infrastructure: help for local authorities \(HM Government, 2022\)](#)

The current situation in Essex

Essex, like much of the UK, is generally in the 'early adopter' stage of EV uptake and this is reflected by the general level of provision of charging infrastructure, uptake of electric vehicles and other e-transport services in the county.

Electric vehicle trends in Essex

Essex has seen a gradual increase in ownership of plug-in EVs in recent years. Zero emission **BEV** ownership⁵ has increased from **4,500** vehicles in 2018 to **18,500** by the end of 2021. **PHEV** ownership⁵ has similarly increased from **4,000** to **16,000** vehicles in the same time period. Ownership is generally higher in the more urban areas of Chelmsford, Colchester and to the south of the county.

Current charging locations

All plug-in EVs, particularly BEVs, rely on a comprehensive private and public-facing charging network. In 2022 there were over 300⁶ registered publicly accessible charge points across Essex including:

- ➔ 50 'ultra-rapid' (100kW)
- ➔ 50 'rapid' (50kW)
- ➔ 60 'fast' (22kW)
- ➔ 150 'slow' (<7kW).

These include a mix of publicly and commercially operated sites at car parks, petrol filling stations and

a new purpose-built [GRIDSERVE® Electric Forecourt at Braintree](#). Similar to EV ownership, charging infrastructure is generally located in and around larger urban centres and along key traffic routes.

Integrating EV infrastructure with wider transport

We are committed to delivering a step change in sustainable travel across the county by growing passenger transport and active travel. There are several ongoing opportunities to integrate EV infrastructure with other sustainable travel options:

- ➔ **Digital-Demand Responsive Transport (DDRT)**
The Council operates the [DigiGo](#) fully electric shared public transport service offering on-demand or pre-bookable bus travel connecting rural parts of Essex with Chelmsford and Braintree.
- ➔ **E-shared mobility** such as [Co Wheels](#) operate electric car club locations from Chelmsford and Brentwood.
- ➔ **E-scooter** trials have been running since 2020 in Colchester and 2021 in Chelmsford and Basildon. 1.4 million trips were recorded by February 2023 and there are plans to extend the trials until 2024.
- ➔ Colchester has had an **e-cargo bike hire** scheme since 2020 helping to remove delivery vans from local roads.

- ➔ Chelmer Valley and Sandon **Park and Ride** sites each have three slow on-site charging points.

Council vehicle fleets

The council and our delivery partners currently operate around 20 EVs in our operational, pool and company car fleet. We are committed to leading by example and have already started to prioritise how we roll out EV charge points across our estate and transition the remaining 400+ vehicles in our fleet to cleaner fuels. Our local authority partners are also leading by example and starting to transition their operational fleets to EVs.

Existing council projects

On average, 36% of Essex households have limited or no access to off-street parking. This is higher than the UK average of around 30%⁷ of households and rises considerably in more urban areas, with higher density housing, restricting resident access to convenient and fairly priced EV charge points. In early 2023, we will be submitting a bid through the [Government On-street Residential Charge point Scheme \(ORCS\)](#) to secure funding for a first phase of on-street charge points in areas that do not have off-street parking on driveways.



Figure 3
(from top):
DigiGo DDRT
Colchester e-cargo bike



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⁵ [Vehicle licensing statistics data tables \(DfT, 2022\)](#)

⁶ [National Charge Point Registry \(DfT, 2022\)](#)

⁷ [Taking charge: the electric vehicle infrastructure strategy \(DfT, 2022\)](#)

What the future might look like

The Government's commitment to phasing out diesel and petrol cars from 2030 and hybrids from 2035 is going to encourage a more rapid switch in the coming years. Infrastructure delivery will need to keep up with future demand and more needs to be done to build on the current network and support EV use and a range of sustainable travel options.

Forecasting EV uptake in Essex

There is still a lot of uncertainty around potential future technology and policy affecting the rate of transition to EVs. The Government anticipates there will need to be up to **10 million** zero emission **BEV** cars and vans on the road by 2030⁸ to help meet net zero targets. Using the Government's projections⁹, uptake in Essex could potentially increase to **50,000 BEVs** by 2025 and, looking beyond this strategy, **220,000 BEVs** by 2030 and **800,000 BEVs**, representing around 88% of eventual car and van ownership, by 2040. These estimates are also broadly consistent with wider forecasting work being undertaken by Transport East¹⁰ for the region and reflects their 2040 'High EV' uptake scenario. The Government phase out of **PHEVs** will be in place by 2035 and ownership of hybrids in Essex is expected to peak at around **135,000** prior to this ban on new sales. After that, PHEV ownership is expected to reduce rapidly in favour of BEV ownership.

Future EV charging infrastructure needs

Uncertainty around future rates of EV uptake should

not detract from the need to deliver more charge points, that provide flexible charging solutions in a wide range of locations and meet different user needs. The Government expects most people, with access to private off-street parking, will install their own infrastructure and charge at home. More relevant to our strategy, the Government also identifies a minimum need for around **300,000** publicly accessible charge points⁸ to meet their anticipated demand of 10 million BEVs by 2030. The majority would serve residential on-street users and, to a lesser degree, on-route and public destinations (e.g. shops, leisure and transport hubs). Industry estimates vary significantly, but as a guideline, this equates to around one publicly accessible charge point for every 35 BEVs on the road.

Based on our initial BEV forecasts in Essex, this guideline could translate to a minimum need for approximately **1,500** public charge points by 2025 and around **6,000** public charge points by 2030, which is a substantial increase from the 300 currently registered in the county. Demand for these charge points is expected to be higher in areas where access to off-street parking is more restricted in high density urban areas (e.g. Basildon, Harlow and Chelmsford). This Guideline is expected to also account for PHEV demand, which is less reliant on public charge points, and will gradually phase out after the 2035 ban on new sales is imposed.

Aligning this with our Vision and objectives, the focus of the strategy will be to support residents with limited access to off-street parking, in areas where levelling up is a priority and reliance on car travel is high. We will also explore opportunities to use existing council, and our public sector partner, assets and property to deliver a geographic spread of infrastructure at key destinations such as car parks, park and ride, libraries, community halls and health facilities. We will not ignore the overall need for increasing all types of charging infrastructure and we will continue to engage with and guide the commercial sector, developers and industry as a whole to deliver the right type of infrastructure in the right place.

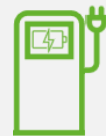
Wider impacts of EV uptake

Our initial estimates, and the wider Transport East forecasts¹⁰, indicate that the projected EV uptake could remove around **70%** of the annual carbon emissions from cars and vans by 2040 and substantially contribute to the Essex net zero target for 2050. However, the analysis also highlights some **key challenges**:

- ➔ EVs are not completely carbon neutral, when energy supply and manufacturing are considered, and will only get us so far towards net zero.
- ➔ We need to discourage the replacement of shorter trips, currently made by walking, cycling and bus, with EV trips.
- ➔ Forecasts do not account for the need to decarbonise freight, public transport and taxis.
- ➔ Other technologies are needed as a balanced approach to achieve net zero, including alternative fuels, increased energy efficiency and carbon offsetting.



Potential for **50,000 BEVs** in Essex by 2025 rising to **220,000 BEVs** by 2030



Minimum of **1500** public charge points could be needed in Essex by 2025 rising to **6,000** by 2030



Around **70%** of car and van CO₂ emissions could be saved by 2040 through switching to EVs



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⁸ [Taking charge: the electric vehicle infrastructure strategy \(DfT, 2022\)](#)

⁹ [Transitioning to zero emission cars and vans: 2035 delivery plan \(DfT, 2021\)](#)

¹⁰ [A People Focused Approach to Understanding Future Travel \(Arup & Transport East, 2022\)](#)

Our objectives and strategic principles

Objective 1 Social Equality



We will focus on the following three strategic principles to deliver our objective for an equitable electric vehicle charging network that promotes social justice through an accessible, inclusively designed and fairly priced network to all residents.

Accessible charging

A significant proportion of housing across Essex does not have access to a private drive or a dedicated off-street parking space, which restricts opportunities for home-charging. These types of property are often in areas most in need of levelling up and in urban areas where air quality could benefit most from the transition to EVs. From a pedestrian safety and convenience point of view, we **will not permit** the temporary placing of cables across the footway or highway. Any permanent solution will require local consultation and permission from Essex Highways prior to installation, on a case-by-case basis. Consideration will need to be given to conflicting demands for limited street space and local parking pressures affecting both EV and non-EV car owners.

In early 2023, we will submit a funding application to the Government's **On-street Residential Charge point Scheme (ORCS)** to increase the availability of on-street charge points in both urban and rural areas. If we are successful with this bid, the funding will only go so far. We will look to identify additional accessible alternatives and solutions for those with restrictive access to charging at home, particularly in areas with limited access to sustainable travel options and where car travel is necessary, including:

- ➔ Provide guidance on appropriate charge point options to residents applying to the council for private or public on-street charge points using innovative design, such as channelling, embedded or retractable solutions (see examples in Figure 4). These solutions are most likely to be permitted where footways are wide enough to prohibit trailing cables and where EV parking bays can be formalised.



Figure 4 footway channelling, embedded and retractable solutions (Sources: Green Mole Ltd, Kerbo Charge Ltd & [Trojan Energy](#))

- ➔ Liaising with public sector partners and exploring opportunities to use public property, such as libraries, country parks, community halls, parks, schools, or council operated car parks for public charge points.
- ➔ Promote 'peer-to-peer' charging platforms, and any [regulatory obligations](#)¹¹, to residents (where those with EV chargers can make them available for others to use).
- ➔ Expansion of shared mobility schemes, like EV car clubs, as an alternative to private car ownership.
- ➔ Charge points at park and ride sites or railway stations for commuters looking to make use of public transport for at least some of their journey.
- ➔ Engaging with private and large public sector employers to provide destination charging through the Government **Workplace Charging Scheme (WCS)**.

Inclusive Design

Disabled and older drivers, passengers and pedestrians have experienced accessibility issues when using public charging points and should not be excluded from plans to transition to EV. Issues can include:

- ➔ EV charging points, which include charging units at unsuitable heights for wheelchair users.
- ➔ Charging cables which are too heavy to lift.
- ➔ Connectors that require a high level of force to use.
- ➔ Streetscape features such as the size of the parking bay or the height of the kerb.

In 2022 the British Standards Institute (BSI) published a [new accessibility standard for public EV charging points](#)¹² to encourage providers to apply best practice and consider inclusive design at the outset of the design and planning process. We will incorporate this guidance into our own planning processes and the Essex Design Guide to provide for disabled EV drivers. We will also require that charge point operators commissioned by the council and our partners adhere as closely as possible to these standards.

Fairly priced

Electricity supply is variably priced depending on the time of day it is used. It is usually cheaper to charge an EV overnight and we want to increase the opportunities for people, who need to drive and have limited access to private off-street parking, to be able to take advantage of cheaper times of day. Where this is not physically possible we will look to provide safe and secure charge point opportunities on land within the council's, or a public sector partner's, control.



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¹¹ [Taking charge: selling electricity to electric vehicle drivers – What the supply regulations mean for different charging scenarios \(Ofgem, 2022\)](#)

¹² [PAS 1899:2022 Electric vehicles – Accessible charging – Specification \(British Standards Institution, 2022\)](#)

Objective 2 Healthy Environment



We will focus on the following three strategic principles to deliver a **healthy environment** for all by helping decarbonise the transport system, reducing emissions from transport and improving air quality.

Decarbonising transport

Transport is the largest greenhouse gas emitting sector in Essex and is responsible for emitting around 49%¹³ of the county's CO₂ emissions each year. Much of this can be attributed to private cars, vans and taxis. Our strategy will support the Government policy of ending the sale of new petrol and diesel cars and vans by 2030 and hybrid vehicles by 2035 through the delivery of charging infrastructure across the county. However, the transition to EVs will only get the transport sector part of the way to net-zero and our strategy will need to complement wider objectives and strategies being explored by the council and their partners to:

- ➔ Reduce demand for travel and car use.
- ➔ Improving efficiency of energy supply and use.
- ➔ Other zero emission fuels such as hydrogen.
- ➔ Low carbon energy supply through renewables.
- ➔ Carbon offsetting technologies.

Air Quality

Over half of the local authorities in Essex have at least one Air Quality Management Area which is harmful to people's health and wellbeing. Air pollution is thought to be linked to the deaths of between 28,000 and

36,000 people annually in the UK. [The Government](#)¹⁴ has estimated that the health and social care costs of air pollution in England could reach £1.5 billion by 2025 and £5.1 billion by 2035 unless action is taken. This can often have a greater impact on the youngest, oldest and those living in areas of deprivation in our society.

We recognise that EVs offer a partial solution to this problem by removing some of the emissions related to air quality. However, they still emit pollutants from tyre and brake wear, albeit to a lesser extent than petrol/diesel vehicles through innovations such as regenerative braking. We are currently preparing a countywide Air Quality Strategy that will integrate with the outcomes of our EV infrastructure strategy. We will also liaise with our local authority partners to help address the requirements of their Air Quality Action Plans and Clean Air Strategies.

Environmental Responsibility

In the first instance, any charge point solutions will need to demonstrate there are no residual negative impacts on the local environment, street scene, green space and biodiversity.

We have a longer-term ambition that EV charge points in the county will eventually be supplied by zero carbon electricity using renewable energy sources and storage from the local energy system where feasible. This will be influenced by the wider transition of the national grid and energy distributors to renewable energy.

Through the strategy, we will work with charge point

operators to encourage the transition to renewable energy supplies and the use of sustainable materials and construction methods where feasible. Where possible, we will also explore opportunities for [smart charging systems](#)¹⁵ and off-grid, on-site renewable or zero carbon electricity generation such as solar panels and battery storage (examples shown in Figure 5).



Figure 5 examples from top:
Domestic smart charging and renewable energy system (Source: myenergi UK®)
Solar powered carports (Source: Solarsense UK Limited)

¹³ [Net Zero: Making Essex Carbon Neutral report \(Essex Climate Action Commission, 2021\)](#)

¹⁴ [Estimation of costs to NHS and social care due to the health impacts of air pollution \(Public Health England, 2018\)](#)

¹⁵ [Electric vehicle smart charging action plan \(UK Government, 2023\)](#)



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Objective 3 Resilient a Safe Network



We will focus on the following six strategic principles to guide and promote a resilient and safe network. Infrastructure will need to be reliable, accessible, safe, compatible, easy to use and represent good value for money at installation and during its life.

A well maintained and resilient network

We want an easy to maintain, high functioning and reliable EV charging network in Essex. This will help overcome some of the perceived barriers to EV uptake such as 'range anxiety' and 'charge anxiety'. A poorly maintained network could also further impact on viability and user confidence when equipment fails. We want to lead by example and encourage the private sector and operators to deliver a similar level of service. We will continue to work with charge point operators to ensure that public EV charging infrastructure is to a high standard at implementation, well maintained and adaptable to future changes in technology and innovation.

Safety and security

We want people to feel safe when using charge points at all times of day and night. A key part of our design guidance will include both the operation and maintenance of infrastructure. We want to avoid obstructions and safety hazards to other road users caused by trailing cables across footways and cycleways. We also want to ensure equipment can be maintained without impacting on other transport users.

Public charge points will be located in visible and

open locations close to areas of activity and where overlooked by nearby properties. Other measures such as lighting, CCTV and the grouping of charge points, will need to be considered where vehicles are left overnight.

A compatible network

We want to deliver a compatible, simplified and standardised public charging network in Essex. Acknowledging it is a rapidly evolving market, with a range of technologies available, we will continue to work with charge point operators to achieve this as quickly as possible.

A smart and easy to locate network

It is important to keep customers informed and communicate up to date information on where public infrastructure is, prices, access and security. This allows EV users to better plan their journeys and use the right type of charge point to meet their typical demands. We will ensure our charge points are listed on the Government's National Charge Point Registry and that operators make information available to partners such as [ZapMap](https://www.zapmap.com/)¹⁶. Other interactive solutions, such as the [MIPERMIT](https://www.mipermit.co.uk/)¹⁷ parking system operated by the North Essex Parking Partnership (Figure 6), allow drivers to locate public charge points and pay for use via an app-based digital permit.

Energy planning

The increased transition to EVs will place pressure on the energy network and electricity power supply. We will continue to engage with UK Power Networks (UKPN), the main energy distribution network operator in Essex, to identify constraints and also help them plan for the future.

Our wider net-zero ambitions also include exploring and transitioning to renewable energy supplies to EV charging infrastructure through innovative off-grid, on-site zero carbon supply solutions such as solar and battery storage.

Future Proofing

The network should be future proofed so it can be expanded as the transition to EVs increases and adapted to incorporate new developments in technology and innovation.

We will look to utilise existing public sector land and assets to help reduce capital costs and avoid third party ownership agreements. We will also consider how sites could be further expanded in the future at the initial design stage to increase efficiencies and minimise additional costs.

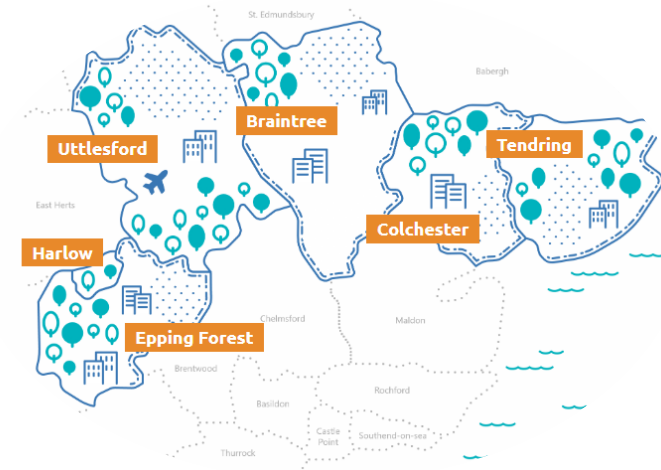


Figure 6 MIPERMIT platform (Source: North Essex Parking Partnership)

¹⁶ www.zap-map.com/live

¹⁷ [Welcome to the North Essex Parking Partnership | North Essex Parking Partnership](https://www.mipermit.co.uk/)



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Objective 4 An Integrated Network



Our overarching strategic principle is to **integrate** EVs with sustainable transport and future mobility solutions to support a reduction in overall car use.

The Government have placed decarbonisation as the most prominent theme in their current¹⁸, and emerging, transport policy and guidance. Decarbonisation is also one of the four themes in our emerging fourth Local Transport Plan (LTP4) and the impacts of carbon will be at the forefront of Essex's transport strategy over the coming decades.

The current reliance on a car-based transport network

and unconstrained growth in car use and ownership cannot continue. The role of EVs is considered both a **part** of the solution, by replacing higher polluting petrol and diesel vehicles, but this **must not** come at the expense of encouraging people to replace trips made by sustainable modes with EV car trips. A potential outcome highlighted in the work undertaken by Transport East¹⁹. EV use and infrastructure will need to integrate with, and help promote, the wider transport mix in Essex by applying our preferred approach and preferred outcome (shown in Figure 7 and Figure 8) by prioritising the following:

- ➔ Avoiding or reducing the need to travel.
- ➔ Improving and shifting travel to more sustainable alternatives including public transport, cycling and

other forms of active travel.

- ➔ Improving and decarbonising the residual car travel by transitioning to EVs or other cleaner fuel technologies.

This will ensure we move from our current reliance on a car-based transport network to a preferred sustainable and technology-driven transport future. We are seeking to avoid the undesirable future of unconstrained car use and limited transport choices.



Figure 7 preferred approach to prioritising the future of travel in Essex

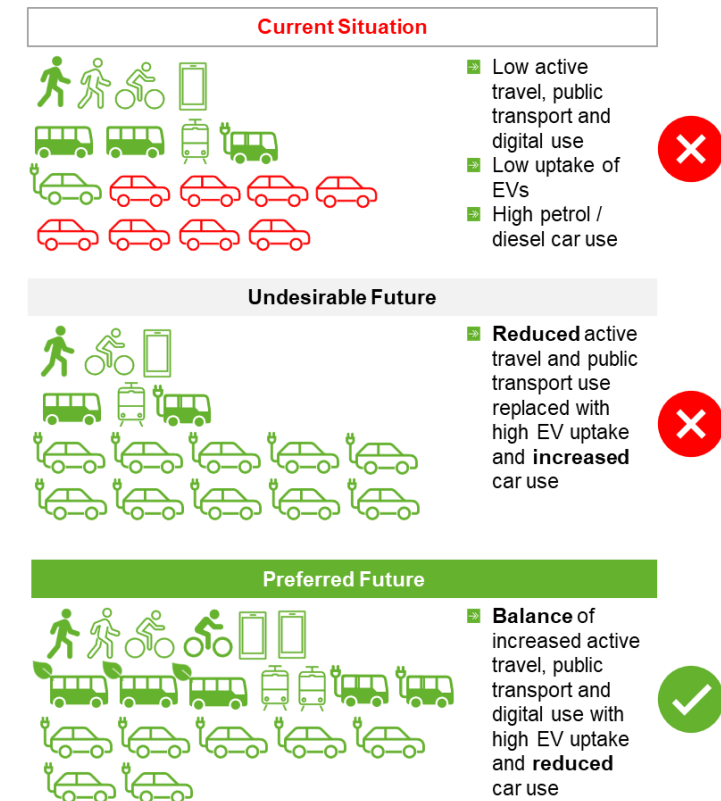


Figure 8 preferred future of travel outcome in Essex

¹⁸ [Decarbonising Transport: A Better, Greener Britain \(DfT, 2023\)](#)

¹⁹ [A People Focused Approach to Understanding Future Travel \(Arup & Transport East, 2022\)](#)

Objective 5 Connected network meeting essential demand



We will focus on the following strategic principles to deliver a network that better connects individuals and organisations throughout Essex to support the uptake of electric vehicles where car travel is necessary.

Need for infrastructure

A priority for the strategy will be to help deliver charge points for residents who do not have access to off-street charging. It will have a clear focus on levelling up and in areas with limited sustainable transport connections and a greater dependency on car travel. We will also support provision of charge points at destinations across Essex, by liaising with our local authority partners, to make public car parks available for the installation of chargers.

It is anticipated that off-street rapid charging hubs will predominately be provided by the commercial sector, however the council and our partners will look to provide land where appropriate to facilitate this provision. Our initial forecasting analysis of what might be needed in the future, based on potential uptake and likely demand in different areas, has provided a high-level indication of where these specific types of public charge point might be needed most across the county by 2025 (Figure 9).

Making the most of public funding

It will be important to prioritise investment and site selection to meet the objectives of the strategy and deliver value for money on any public funding. Noting any future site selection for public infrastructure is likely to be on a case-by-case basis, we will consider the following overarching criteria as part of any site selection and prioritisation process in the future to target any available public funding:

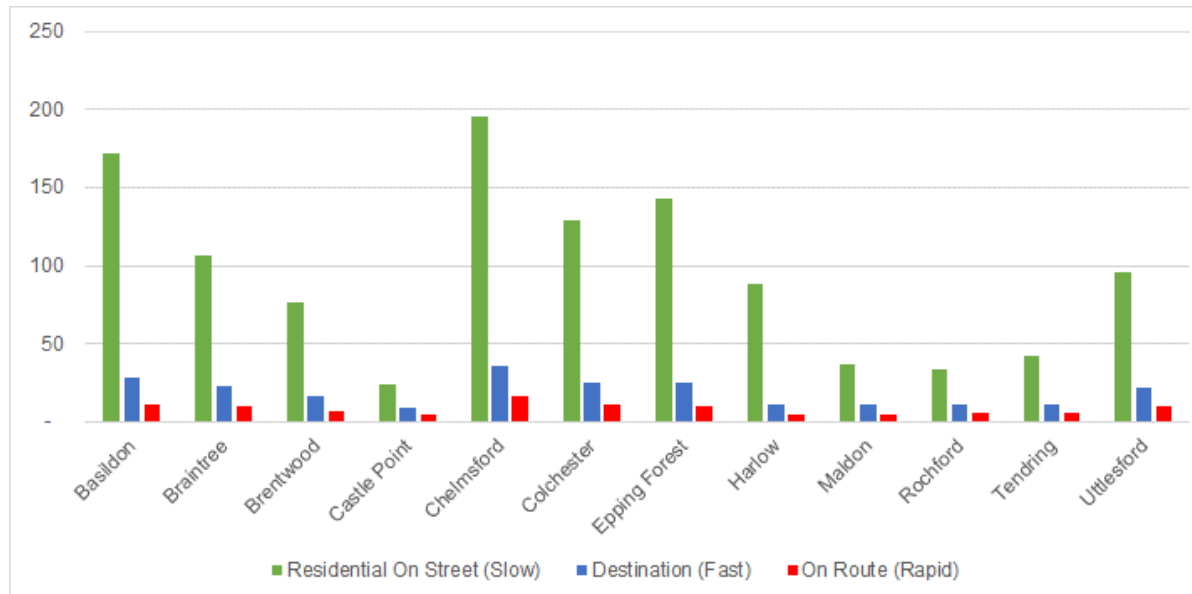


Figure 9 indicative need for residential on-street, destination and on-route public infrastructure in Essex

- ➔ **Social Equality:** alternatives to home charging in areas with restrictive access to off-street parking, limited access to sustainable travel options and higher levels of deprivation.
- ➔ **Accessible:** opportunities to provide for disabled EV drivers with step free access and larger parking bays.
- ➔ **Affordable:** apply simple, transparent and convenient charging options for residential and public facing infrastructure that delivers a balance of fairness to the customer and a self-sustaining network.
- ➔ **Environmental responsibility:** targets air quality issues, provides opportunities for longer term renewable solutions and does not negatively impact on the local environment.
- ➔ **Resilient and reliable:** deploying the right equipment, in the right place, in accessible and maintainable locations.
- ➔ **Safety and security:** ensure EV charging infrastructure is well designed and located in secure locations so people will feel safe using the public network at all times of day and night.
- ➔ **Land availability:** prioritise use of land within the control of the council, or public sector partners, to minimise the risks of permissions, legal requirements and delays of installing on third-party land.
- ➔ **Electricity supply:** availability and connection costs can vary from site to site and opportunities to reduce these costs and the necessary civil engineering works, such as mini-hubs or clustering charge points, will be considered.
- ➔ **Integration:** provides for a range of users and / or integrates with sustainable travel options at mobility hubs, interchanges and park and ride sites.
- ➔ **Viability and risk:** engage with charge point operators and adopt an approach to minimise risk and ensure that charging infrastructure is distributed evenly throughout Essex to address less viable locations.



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Objective 6 Creating better places



We will apply the following strategic principles of place and movement to support our wider transport vision. This will help create better places using infrastructure that is inclusive, sensitively placed, designed to complement our public spaces and minimises the impact on all members of society.

Our wider transport vision for Essex

We want to gain a better balance between how different types of transport and movement interact with the places we visit and live in, to deliver **safer, greener and healthier** travel choices and ultimately better places.

Applying these principles to the delivery of EV charge points will support sustainable transport options and make sure we are not promoting car use in the wrong places and compromising the quality of our public spaces. Our strategy will prioritise and support certain types of destination, on-route and residential charge points in the following situations.



Residential areas

We want the safe movement of pedestrians and cyclists in our residential areas and we will prioritise:

- ➔ Private and public on-street charge points where footways allow, there are no negative impacts on the local environment and trailing cables are prohibited.
- ➔ Communal charge points in secure locations on public property such as community centres, libraries or public car parks.
- ➔ Community based shared mobility including e-car clubs, e-car share, and e-bike schemes to help reduce car ownership.
- ➔ Promotion of 'peer-to-peer' charging platforms, and [regulatory obligations](#), to residents.



City and town destinations

These are key destinations where we want to prioritise the public realm, safe movement of pedestrians, active travel and public transport access. Generally, we will look to reduce or remove car use in central areas and will prioritise:

- ➔ Slow and fast charge points at park and ride sites, bus or railway stations for commuters looking to make use of public transport for at least some of their journey.
- ➔ Shared mobility e-car clubs to enable residents to flexibly use sustainable modes of travel and benefit from ad hoc car usage when needed.
- ➔ Slow and fast charge points provided at long stay car parks for necessary car use and primarily on the periphery of city / town centres.
- ➔ Work with public sector partners to locate communal charge points in secure locations on public property such as community centres, leisure centres, libraries, visitor attractions, parks or public car parks.
- ➔ Careful installation of charge points to avoid inconvenience to pedestrians / cyclists in areas that don't have off-street parking.
- ➔ Buses and passenger transport services using zero emission vehicles.
- ➔ Engaging with private and large public sector employers to provide long stay destination charging through the Government Workplace Charging Scheme (WCS).



Village or rural destinations

Villages are key destinations, providing essential services to rural areas, where we want to promote safe access for pedestrians, cyclists and also improve public transport connections. We will prioritise:

- ➔ Private and public on-street charge points where footways allow, there are no negative impacts on the local environment and trailing cables are prohibited.
- ➔ Charge points at rural railway stations for commuters looking to make use of public transport for at least some of their journey.
- ➔ Community based shared mobility and digital demand responsive transit (DDRT), e-car clubs, e-car share, and e-bike schemes to supplement public transport.
- ➔ Communal charge points provided at key facilities and car parks such as parish halls, libraries and community centres.



On-route movement corridors

These include strategic and key traffic corridors connecting towns and settlements. We will:

- ➔ Engage with, and support, the commercial sector and National Highways to increase the number of rapid charge points on-routes away from city / town / village centres to allow quick on-route charging.



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Action Plan – Measures we can deliver directly up to 2025

There are many types of EV charge points and user demands that could be delivered by the private and public sectors. For the immediate future (up to 2025), we have developed the following actions and basic set of charging user types. The strategy will focus on integrating with sustainable transport, transitioning the council fleet and supporting residents or smaller organisations with limited access to private charging options.



Figure 10 BSI Electric Vehicles - Accessible Charging – Specification²⁰

Measures we can deliver directly up to 2025

Theme	User types	How we will deliver
Provision of charge points for residential users	<ul style="list-style-type: none"> ➔ Public accessible on-street charging 	We will help deliver charge points for residents, who do not have access to off-street charging within priority areas and where there are no negative impacts on the local environment. There will be a clear focus on areas with limited sustainable transport connections, need for levelling up and a greater dependency on car travel. While this will include a mix of urban and rural locations, a key objective will be to avoid encouraging commuter, business and visitor car trips into congested urban centres.
Provision of charge points at destinations	<ul style="list-style-type: none"> ➔ Essex property 	We are developing a delivery plan to provide public-facing charge points across the Essex property portfolio, e.g. council buildings, libraries, country parks and schools. We will prioritise sites that support the objectives of this strategy and enable transitioning of the council fleet.
Fleet electrification	<ul style="list-style-type: none"> ➔ Council Fleet 	We are committed to leading by example and continuing to transition the council's fleet as quickly and as efficiently as possible to meet our net-zero commitments.
Policy, guidance & standards	<ul style="list-style-type: none"> ➔ Transport policy / strategy ➔ Planning policy ➔ Design guidance ➔ Accessible charging guidance¹⁹ ➔ Legislation ➔ Parking policy ➔ Procurement 	<p>We acknowledge there are challenges and we are committed in our role to work with the public and private sector to deliver policies and guidance that will shape future development and the delivery of infrastructure in the county. This strategy will inform our policy decisions and our design guidance that we would expect to be applied to EV infrastructure in the county.</p> <p>We will consult on and update our design guidance, specifications for accessible charging (Figure 10), parking policy and legislation to define how EV infrastructure is delivered within the wider transport network.</p> <p>Our role will also be to leverage private and public investment and identify value for money procurement opportunities.</p>



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Action Plan – Measures we can deliver directly up to 2025

Measures we can deliver directly up to 2025 (continued)

Theme	User types	How we will deliver
Integrate EV infrastructure with sustainable transport, shared & future mobility options	➡ Active Travel	It will be important to ensure all EV charging infrastructure, particularly on-street, is sympathetic to the public realm and does not impact on active travel and disabled access. We will use the Essex Design Guide to deliver these principles.
	➡ Public Transport	While the physical transitioning of the public transport fleet is largely outside of the council's control and subject to debate around the most appropriate clean fuel, we will engage with partners to understand how EVs can contribute to the transition of park and ride or local bus fleets to cleaner fuel.
	➡ Digital Demand Responsive Transport (DDRT)	We will continue to develop the DigiGo DDRT services we are currently supporting and look for opportunities to locate charging hubs in less accessible locations to increase the range, coverage and potential number of services.
	➡ Interchanges	We have already started providing some charge points at our park and ride sites and will increase the number of fast/slow chargers to continue to encourage people to use these sites and avoid driving into congested urban areas. There will also be opportunities to link up with mobility hubs to offer alternative local sustainable travel options such as e-scooters and e-bikes from the park and ride.
	➡ Mobility hubs	We are developing a separate mobility hub (Figure 11) design strategy to guide the scale and type of hub for different types of locations. These will include combinations of different electric and shared mobility solutions / hire schemes, e.g. digital demand responsive transit (DDRT), e-car clubs, e-bikes, e-scooters and e-cargo bikes. We will look for opportunities to integrate mobility hubs into the wider strategy to ensure opportunities and economies of scale can be achieved with EV infrastructure delivery.

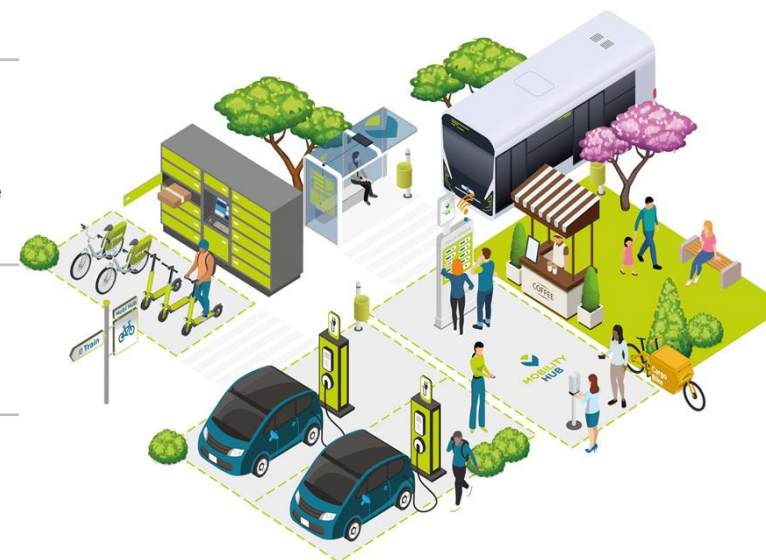


Figure 11 Example of community mobility hub
(Source: CoMoUK)²¹



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²¹ [Community Mobility Hub Accreditation: Setting quality standards \(CoMoUK, 2022\)](#)

Action Plan – Measures we will work with others to deliver

The council are also in an effective position to work with a range of private and public sector partners to explore opportunities to deliver EV charging infrastructure over and above what we can directly deliver. The following actions set out further EV charging user types and who we will engage with to deliver more widely within the context of this strategy.



Figure 12 Example of [Trojan Energy](#) Aon on-street EV charging ‘DoorSTEP’ project trial in London Borough of Brent and Oxfordshire Council²²



Figure 13 GRIDSERVE on-route charging forecourt Braintree (Source: GRIDSERVE)

Measures we can help enable others to deliver up to 2025

Theme	User types	How we will work with others to deliver
Provision of charge points for residential users	➤ Private accessible on-street charging	We are engaging with charge point operators to explore innovative options for private on-street connections to allow residents, without access to off-street parking, to connect to their own electricity supply. Solutions will need to demonstrate there is no negative impact on the local environment, streetscape, active modes and disabled access on the footway (see example Figure 12).
		Private residential off-street charging is a fundamental element of the overall network and we would expect the private sector, developers and individuals to deliver this going forward. We will look to enable this infrastructure largely through parking guidance and as a requirement through the planning process.
	➤ Off-street charging	We will also work with our local authority partners to explore opportunities to provide off-street charging in secure car parks where there are high densities of flats and / or terraced housing. These could include nearby council operated car parks.
Provision of charge points for on-route		We will promote various ‘peer-to-peer’ charging platforms, and any regulatory obligations ²³ , to residents (where those with EV chargers can make them available for others to use) to improve access to charging for local residents who don't have off-street parking.
	➤ On-route charge points	The opportunity for top up charging on key routes (motorways, trunk roads, A-roads and some rural routes) is highly valued and largely addressed by the private sector. There will be routes where opportunities cannot be delivered by the private sector due to land availability or perceived lack of demand. We will continue to work with the private sector, and public sector partners (National Highways and local authorities) to explore opportunities to use public assets for charge points or charging forecourts such as the GRIDSERVE site in Braintree (Figure 13).



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²² [Trojan Energy Launch Project To Unlock Domestic Tariffs For On-street Electric Vehicle Charging \(LCRIG/Trojan Energy, 2021\)](#)
²³ [Taking charge: selling electricity to electric vehicle drivers – What the supply regulations mean for different charging scenarios \(Ofgem, 2022\)](#)

Action Plan – Measures we will work with others to deliver

Measures we can help enable others to deliver up to 2025 (continued)

Theme	User types	How we will work with others to deliver
Provision of charge points at destinations	→ Settlements	We will work with our local authority partners and public transport providers (National Rail, train operating companies and bus operators) to explore opportunities for charging infrastructure on the periphery of city and large town centres, smaller settlement car parks, park and ride and railway stations. This would need to be delivered within the context of the strategy and support sustainable travel opportunities.
	→ Employment / retail / leisure sites	The private sector is largely catering for commercial employment, retail and leisure destinations and there is no direct delivery role for the council. However, we will continue to guide and secure the delivery of good quality infrastructure where we can through the planning process.
	→ Community property	There are a number of public sector assets in smaller and less accessible locations, such as village halls, community centres, leisure centres and healthcare with secure car parking. We will work with parish councils, local authority partners and health trusts to explore where opportunities could complement the strategy.
Integrate EV infrastructure with wider transport	→ Interchanges	There is potential to work with National Rail, train operating companies, bus companies and park and ride sites to deliver mobility hubs, to provide first and last mile e-mobility solutions, and EV charge points at station car parks in locations that meet the strategy objectives.
	→ Wider fleet electrification (cars and light goods vans)	We see the decarbonisation of freight and logistics as a wider issue where the we will need to work different tiers of Government and the freight sector to understand the different pathways to decarbonisation. At this stage we will look to explore opportunities and central grants to incentivise the replacement, or retrofitting, of commercial car and light goods vehicle fleets. We will work with our local authority partners to encourage the continued electrification of their own car fleets (Figure 14).
	→ Taxi electrification	We will work with our local authority partners to develop an approach to support the transition of hackney carriages and private hire vehicles to EV and identify opportunities for central grants and incentives to convert and provide appropriate charging infrastructure.



Figure 14 Council fleet EV charge points (Source: Colchester City Council)



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Engagement and monitoring

Public engagement

The strategy will be the first step to engage with the public to raise awareness of the Government phase out of petrol and diesel sales by 2030 and plug in hybrids by 2035. It will also be an opportunity to demonstrate the availability of existing infrastructure and how the Council will help enable the delivery of reliable, convenient and accessible charging infrastructure.

We will consult on this Phase 1 Strategy, prior to adoption, and undertake further engagement to understand how the demands of residents can be better met, maximise value for money from any investment and raise awareness of how the charging network is expanding across the county. The outcomes of this engagement will be fed into any future refresh and a Phase 2 Strategy in the next 2-3 years.

Engaging with organisations

We will undertake targeted engagement with both public, voluntary and private sector organisations, particularly in locations with poor public transport access, to encourage the use of the Government Workplace Charging Scheme to establish and expand a workplace EV charging offer for their employees. We will look to coordinate demand in particular locations so any available funding can be targeted to create charging hubs to serve a range of different users. This could include local communities where off-street and on-street charging opportunities are limited.

Key partners

Continuous and open dialogue will be essential with our local authority partners, Transport East, local

transport providers, energy suppliers, National Highways and the Department for Transport to understand and coordinate cross-boundary opportunities and maximise any available funding in line with our Phase 1 Strategy. An EV infrastructure user group could be set up with key officers from the county and local authorities to share data, monitor progress, explore opportunities and help local authorities develop their own infrastructure implementation plans.

Engagement with charge point operators and providers

We will continue to engage and work with charge point operators and providers to explore how we maximise the opportunities for investment from local and central government funding, similar to the ORCS and LEVI grant schemes, as well as commercial investment.

We will also look to engage with industry partners as we develop design and best practice guidance for the installation of infrastructure on public property and how we would expect others to deliver infrastructure across the county.

Monitoring progress and outcomes

We need to ensure that we are making the most of public funding opportunities and any available investment aligns with the strategic objectives and principles of this initial Phase 1 Strategy. We also need to monitor the geographic and demographic uptake of EVs and the expansion of the public and private charging network to ensure the different key user groups we have prioritised in this strategy are not being left behind.

We will need to monitor key outcomes over the Phase 1 Strategy period of the next 2-3 years including, but not limited to, the following examples:

- ➔ The level of public funding secured by the council through Government grant schemes and private investment for the installation of electric vehicle charging infrastructure.
- ➔ The number of publicly funded charge points delivered by the council and our partners.
- ➔ Expansion and number of registrations of private and public charge points in the county and how this compares with the projected level of need for different user types.
- ➔ How the delivery of charge points aligns with the objectives and principles of this strategy.
- ➔ Rate of EV uptake across the county for different user groups, locations and demographics. How this compares with trends from other counties and Government forecast.
- ➔ Rate of transition of the council vehicle fleet to EV.

Monitoring technology

Technology is rapidly advancing and continuously changing. We will need to understand these changes and how they will influence the charging network and how EV users charge across Essex. We will use our engagement with industry partners to keep up to date and ensure we enable the ongoing delivery of a network that is innovative, forward thinking and meets the needs of organisations, residents, and visitors to Essex. We will explore the potential for a user group to meet regularly, to draw from local and industry expertise, and feed into the changing needs of users, available technology and any future strategy refresh.



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Next steps and planning for the future

This document sets out our proposed Vision and an initial Phase 1 Strategy to support the transition to EVs and the delivery of charging infrastructure in the county that is fair and supports our wider sustainable transport objectives of reducing overall car use. We are keen to seek feedback and discuss our proposed approach with partners over the coming months before we formally publish our strategy document later in the year.

While we recognise the private sector will continue to play a key role in delivering the required infrastructure, the strategy highlights the need for public sector intervention to secure further essential Government funding and develop an inclusive network to meet a range of socially and environmentally motivated objectives.

The strategy is very much focused on what we can do in the immediate future, up to around 2025, but will have one eye on the longer term future to fit with wider policy changes and respond to technology and innovation. Figure 15 illustrates the likely policy and technology timeline with the need to refresh the strategy (Phase 2) in 2025 once the overarching transport strategy has been set out in LTP4 by 2024.

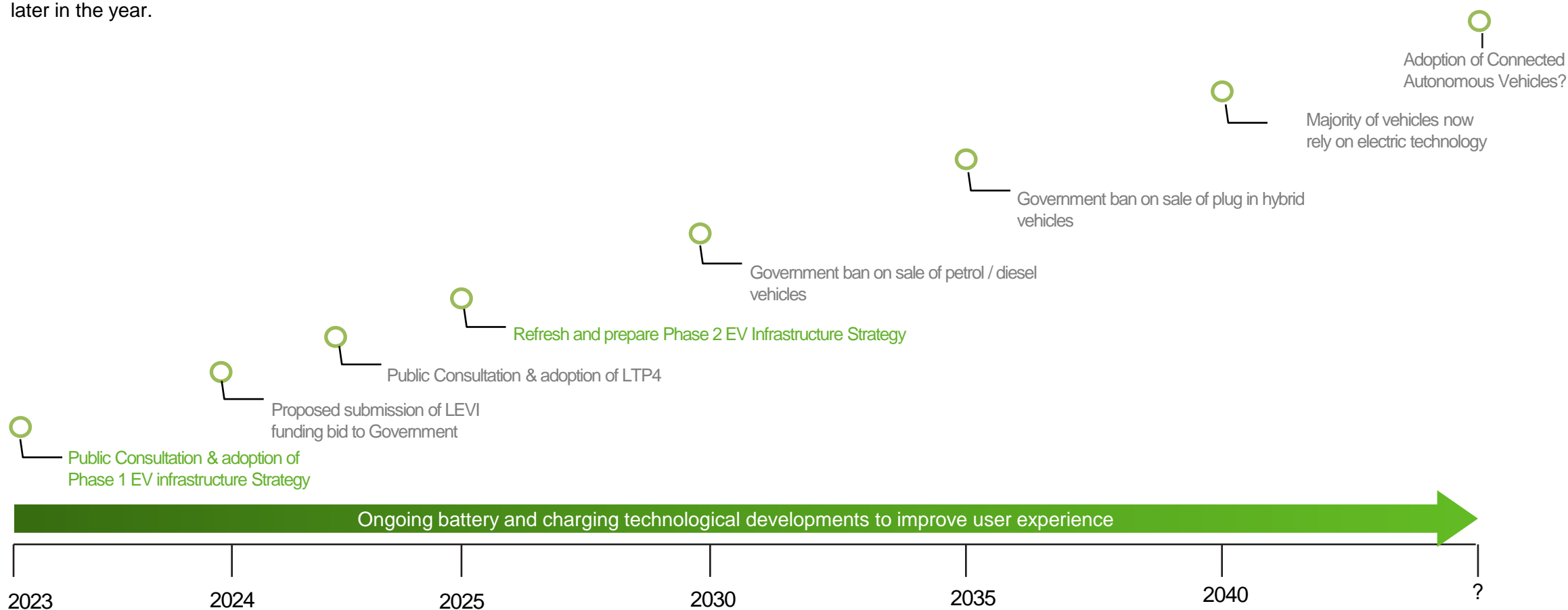


Figure 15 – Future transport policy and EV technology timeline



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Glossary



Term	Definition
EV	Electric Vehicle – referring to plug-in Battery Electric Vehicles (BEVs) and Plug-in Hybrid Electric Vehicles (PHEVs)
BEV	Battery Electric Vehicle – zero emission vehicles powered by electricity and requires plugging in to a charge point to recharge the battery. New EV's commonly have a range of around 200 miles with some offering ranges of more than 300 miles.
PHEV	Plug-in Hybrid Electric Vehicle – combined smaller battery with a conventional internal combustion engine. This allows a short electric range of 20-50 miles. Sales are due to be phased out by Government in 2035.
Net Zero Carbon	Net zero means achieving a balance between the greenhouse gases put into the atmosphere by human activity and those taken out. To reach net zero, emissions from homes, transport, agriculture and industry will need to be cut.
Charge point infrastructure / network	Public & private network of charge point infrastructure within the County providing a range of private and public facing user types and charge speeds.
Mobility hub	The mobility hub is an emerging concept which is being used to create space designed specifically to house public, shared and active travel modes alongside other facilities.
DDRT	Digital Demand Responsive Transport – DigiGo is a new electrically powered DRT bus operating in parts of Essex.
ORCS	On-street Residential Charge point Scheme – Government grant scheme.
WCS	Workplace Charging Scheme – Government grant scheme.
LEVI	Local Electric Vehicle Infrastructure – Government grant scheme.
kWh	Kilowatt Hour – unit of electricity and capacity for EV car batteries.
LTP4	The fourth Essex Local Transport Plan setting the emerging vision and transport strategy for the county.
UKPN	UK Power Network – Main distribution network operator for the supply of electricity in Essex.

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