

Electric Vehicle Charging Strategy 2023 – 2025

Setting out our approach to encouraging and accelerating the transition to electric vehicles in the city

June 2023

Title	Electric Vehicle Charging Strategy
Status	Final
Document Version	V1
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Owner	Corporate Policy & Strategy
Approved by	Environment Committee
Approved date	6/6/2023
Review frequency	Three years
Next Review:	2026

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Executive Summary

Worcester City Council declared a climate emergency in July 2019 and committed itself to taking action to reduce carbon emissions. Our [Environmental Sustainability Strategy 2020-2030](#) sets out policies to achieve this, with an ambition for the city to be carbon neutral by 2030.

It is vital for the Council to take a leading role on accelerating the transition to electric vehicles, as this transition is key to reducing the 27% of carbon emissions in the city which come from the transport sector. The Council strongly promotes modal shift to active travel but recognises that for certain activities and individuals, cars and other forms of passenger transport will remain the necessary method of travel and their electrification must be supported.

This Electric Vehicle Charging Strategy for Worcester sets out the approach the Council will take, to address its role as an electric vehicle enabler.

The Council's vision is for robust and reliable charging infrastructure across the city which is accessible to all. Achieving this vision will involve installing more charging infrastructure, support to external partners to invest in infrastructure and vehicles, and engagement with local residents and businesses considering electric vehicles.

The objectives this Council seeks to deliver are:

- Encourage accelerated transition to electric vehicles by local residents and businesses, supporting a reduction in carbon emissions and air pollution
- Ensure charging infrastructure is accessible to all, at a reasonable cost
- For all Worcester residents to have access to a private or public EV charging facility, within ten minutes' walk of their property, by 2030
- Promote public trust and confidence in Worcester as an easy place to own an EV and to visit as a tourist driving an EV
- Complement and support provision of charging infrastructure by other organisations, businesses and individuals
- Provide and signpost businesses and residents to information and support to facilitate the switch to EVs
- Generate revenue to enable additional capital investment and support service provision

Recognising that one of the most cited barriers to buying an electric vehicle is the fear of the distance between public chargers¹, the Council plans to continue our leadership on provision of electric vehicle infrastructure, following the successful installation of a charging hub in our multi-storey car park, St Martin's Gate, in 2021.

In Worcester, approx. 33% of households do not have a private driveway to facilitate the installation of a home charger, and these residents therefore experience a significant barrier when considering the transition to electric

¹ [CBP-7480.pdf \(parliament.uk\)](#)

vehicles. Further investment by the Council will make it as easy as possible for these households as well as local businesses, to transition to electric vehicles, by provision of rapid and fast charging options in the centre of the city and convenient facilities for overnight charges near residential areas.

In addition, the Council will support and influence others to install infrastructure to ensure people can top up their vehicles as required around the city, at workplaces, leisure facilities and near their homes. This will involve close working with partners such as Worcestershire County Council, local businesses and housing associations. The Council will use its position as a local leader to encourage new infrastructure which meets the infrastructure principles set out in our Strategy and will support partners to apply for external grants such as the workplace charging grant.

The Council is currently focused on electric vehicles, being aware that whilst other technologies are available for zero emission vehicles, such as fuel-cells and hydrogen, battery electric is the focus of the market currently.

The Council will support the delivery of countywide and national strategies which seek to accelerate the transition to electric vehicles. Through the Council's strong local knowledge and close relationships with local businesses and people, the Council can provide a local focus and perspective. Those planning electric vehicle infrastructure in the city will benefit from knowledge regarding key user groups, stakeholders and the current and future market as set out in this strategy.

The key user groups have specific requirements from public charging:

Residents

Residents without off-street parking will be doing all their charging at public or workplace chargers. They may want to keep their vehicle topped up, charging whenever they are parked at local car parks, leisure facilities, supermarkets etc. They are likely to want occasional overnight charging at a charger close to their home, as found by research for the Department for Transport².

Tourists

Tourists will be fully reliant on public charging for the duration of their visit. A range of charging options is important for this group, depending on their length of stay.

Residents with their own private charger are still likely to use public charging around 10% of the time³. This may take the form of a rapid top up when they are in a hurry or simply plugging into a slower charger when parked for a few hours in a car park.

Commuters

Some commuters may want to charge whilst at work, using either chargers provided by their workplace or available in local car parks.

² [Public Electric Vehicle Charging Infrastructure. Deliberative and quantitative research with drivers without access to off-street parking. Research report. \(publishing.service.gov.uk\)](#)

³ [Taking charge: the electric vehicle infrastructure strategy \(publishing.service.gov.uk\)](#) (Page 120)

Taxis (private hire and Hackney carriages)

Taxis will require rapid or preferably, ultra rapid charging opportunities. These could be on ranks or in car parks nearby. Taxis will require charging to be available at all times of day/night.

Businesses (cars and light goods vehicles)

Many SMEs may not have an opportunity to install a private charger at their business premises, or vehicles may not be returned to base overnight and therefore need to be charged at or near to employee's homes. Larger transit vans will require charging infrastructure which is accessible (currently, majority of rapid chargers in the city are within height-restricted car parks).

Data shows that with 100% of new car and vans to be plug-in vehicles by 2030, the city can expect to see around 27,000 battery electric or plug-in hybrid vehicles by this date. The public charging infrastructure requirements for these vehicles is significant.

The strategy looks forward to 2030, but as electric vehicles, and electric vehicle infrastructure, is very much an emerging technology it is important for us to be able to adapt to changes and ensure a flexible approach to delivery of the strategy.

The strategy sets out principles to be followed in relation to the planning of infrastructure design and installation, and the locations for infrastructure.

Infrastructure principles:

- To install all future chargepoints in accordance with the British Standard for the design of public EV charging infrastructure – PAS 1899:2022 Electric Vehicles – Accessible charging
- To deliver a network that complements the available commercial chargepoints to provide choice and scale of charging opportunities within the city
- To ensure that the installation and ongoing operation of City Council chargepoints is based on a sound financial business case.
- To ensure that charging infrastructure can be easily paid for and technological barriers to use are minimised
- To apply for external funding wherever possible, to maximise investment in charge point infrastructure.
- Commit to maintain chargers, ensuring maximum availability and reliability of the network
- Future proof investment

Location principles:

- To install chargepoints wherever possible to have 24:7 access, enabling people to charge whenever they need to

- To work to meet the needs of residents without private off-street parking who wish to transition to EVs, through the use of Council car parks and other land
- Areas of land which are at significant risk of flooding will be avoided.
- To assess opportunities for charging provision on land with no height restrictions
- To use available data to identify the key areas for new chargepoints to be installed to decide on and prioritise locations, ensuring effective use of available funding

It is clear that creating and sustaining a comprehensive charging network which meets the needs of all local users is only something that will happen in partnership. Worcestershire County Council are a key stakeholder, along with the owners of other major car parks in Worcester such as the NCP car park and the Crowngate car park, and local housing associations. The Council will seek to engage with other existing and potential providers of EV charging facilities to encourage additional provision, public access and accessibility.

Introduction

Worcester City Council declared a climate emergency in July 2019 and committed itself to taking action to reduce carbon emissions. Our [Environmental Sustainability Strategy 2020-2030](#) sets out policies to achieve this, with an ambition for the city to be carbon neutral by 2030.

Carbon emissions from transport accounted for around 27% of the total carbon emissions of the city in 2020⁴. The Government is backing electric vehicles (EVs) as the solution to reducing these emissions and supporting, and accelerating where possible, this transition to EVs is an important component in the City Council's strategy.

In addition to reducing carbon emissions, electric vehicles also eliminate tailpipe emissions. Whilst particulates will still be released from tyre and brake wear⁵, eliminating products of combustion will have a significant, positive impact on improving local air quality.

With the Government's policy decisions setting the scene for the move to EVs by residents and businesses across the country, there is a clear role for local authorities to support this. The sale of new petrol and diesel cars and vans is due to be phased out by 2030, with only battery electric and plug-in hybrids with a significant zero-emission range to be allowed between 2030 and 2035. By 2035, all new cars and vans must be fully zero emission at the tailpipe⁶.

The Government's [EV Charging Infrastructure Strategy \(2022\)](#) sets out the role of a local authority, requiring LA's to develop and deliver ambitious local EV charging infrastructure strategy, along with ensuring clear ownership and resource of planning and delivery of new infrastructure, ensuring local chargepoints are inclusively designed and accessible, and ensure efficient processes for the installation of new chargepoints by third parties. A key pillar of the strategy is to "support local government to develop chargepoint strategies and scale up the rollout of public chargepoints on local streets."

Whilst the generation of electricity in the UK is becoming significantly cleaner, with 50% of electricity generated in December 2022 coming from zero carbon sources, fossil fuels are still being used to power a proportion of EVs. The carbon savings are still significant even so: 10,000 miles in a medium size petrol car generates 2.65tCO₂e (using 2021 Greenhouse Gas (GHG) conversion factors). In an electric vehicle, this would generate 0.72tCO₂e.

The two key drivers for supporting a move to EV are the cost and availability of vehicles and the availability of charge points at which drivers can 'refuel'.

A wide range of easily accessible, functioning and affordable charge points will help give people who live and work in Worcester the confidence to switch from a petrol or diesel to an EV car - and will also encourage EV drivers to visit and spend leisure time in the city.

⁴ [UK local authority and regional greenhouse gas emissions national statistics - GOV.UK \(www.gov.uk\)](#)

⁵ [AQEG Advice - on the concept of 'zero emission vehicles' - Defra, UK](#)

⁶ [Government takes historic step towards net-zero with end of sale of new petrol and diesel cars by 2030 - GOV.UK \(www.gov.uk\)](#)

As technology associated with electric vehicles is rapidly evolving, this strategy covers an initial three year period from 2023 – 2025. This approach will allow the City Council to focus on what is currently known, what can be practically delivered, and for the EV market to mature.

Our strategy will be reviewed as technology, EV adoption, the economy and social factors evolve. It will be revised and republished in 2026.

Glossary and definitions of terms

Glossary Acronyms

BEV - Battery Electric Vehicle

CCC - Committee on Climate Change

DfT - Department for Transport

EV - Electric Vehicle

EVCP - Electric Vehicle Charge Point

EVI - Electric Vehicle Infrastructure

FCEV - Fuel Cell Electric Vehicle

GHG - Greenhouse Gas emissions

HEV - Hybrid electric vehicle

HGV - Heavy Goods Vehicle

ICE - Internal Combustion Engine (a petrol or diesel vehicle)

kW - kilowatt

PHEV - Plug-in Hybrid Electric Vehicle

PHV - Private Hire Vehicle

zePLV - zero emission Powered Light Vehicle

Definition of terms

EV - the term electric vehicle is used to refer to vehicles that use electric motors for propulsion; for the purposes of this strategy, we primarily use the term electric vehicle to refer to plug-in hybrid electric vehicles (PHEVs) and battery electric vehicles (BEVs); these are vehicles which must plug in to charge points to recharge the battery that powers their electric motion.

EV charger - standalone charging device, which can have multiple EV charging connectors or sockets and may be able to charge more than one vehicle at any one time

Electric vehicle charge point (EVCP) - individual charging connectors / plugs attached to an EV charger, which can charge different EVs simultaneously

EV charging infrastructure - the electric vehicle chargepoint and associated payment system (which could be a separate post to the charger itself), the wiring, protective bollards and lighting etc.

Home charger - a charger for driver's personal use, normally on the side of a house or garage. Often delivers around a 7kW charge on single phase electricity, taking several hours to charge a vehicle.

Hybrid electric vehicle (HEV) - hybrid electric vehicles combine a conventional internal combustion engine (ICE) system with an electric propulsion system (hybrid vehicle drivetrain). These vehicles make use of efficiency-improving technologies such as regenerative brakes which convert the vehicle's kinetic energy to electric energy, which is stored in a battery or supercapacitor. These hybrid vehicles do not plug-in and new HEVs will not be permitted to be sold post 2030.

Zero Emission Powered Light Vehicles – two, three and ultra-light four wheeled vehicles which don't produce emissions from the exhaust, these are small, lightweight alternatives to traditional vehicles⁷. Mopeds, micro cars and ultra-light delivery vehicles are within this category. These vehicles generally use three-pin plugs to charge and therefore do not need specialist electric vehicle infrastructure.

tCO₂e - tonnes of carbon dioxide equivalent

Vehicle parc – number of vehicle registrations in one geographic area (such as Worcester)

Zero-emission vehicle – a vehicle which does not emit pollutants or exhaust gases from its on-board source of power through an exhaust. Non-exhaust emissions still arise from these vehicles in the form of particulate matter from tyre and brake wear and road surface abrasion⁸.

⁷ [EST PLV Businesses brochure FINAL.pdf \(energysavingtrust.org.uk\)](#)

⁸ [AQEG Advice - on the concept of 'zero emission vehicles' - Defra, UK](#)

Objectives

Our objectives:

- Encourage accelerated transition to electric vehicles (and where appropriate, other zero emission vehicles) by local residents and businesses, supporting a reduction in carbon emissions and air pollution
- Ensure charging infrastructure is accessible to all, at a reasonable cost
- For all Worcester residents to have access to a private or public EV charging facility, within ten minutes' walk of their property, by 2030⁹
- Promote public trust and confidence in Worcester as an easy place to own an EV and to visit as a tourist driving an EV
- Complement provision of charging infrastructure by other organisations, businesses and individuals
- Provide and signpost businesses and residents to information and support to facilitate the switch to EVs

⁹ Whilst the Government's 'Taking Charge EV Infrastructure Strategy' does not set an ambition for the typical average walking time to a public chargepoint for households without private driveways, the strategy indicates that this is a metric which they will monitor.

Scope of the strategy

This strategy looks at encouraging and accelerating the transition to electric vehicles, including cars, taxis and light goods vehicles.

The strategy covers all types of plug in cars, taxis and light goods vehicles, including pure battery and plug-in hybrid vehicles.

Different sources of information use different terms – the Nevis toolkit, produced by Cenex, which is used for information in the strategy refers to electric vehicles, covering all battery electric vehicles (BEV), plug-in hybrid electric vehicles (PHEVs), range extended electric vehicles and fuel cell electric vehicles. The Department for Transport uses the term 'plug in vehicle' to describe these four types of vehicle.

Other ultra low emission vehicles such as hydrogen options are not covered in this strategy.

Zero emission powered light vehicles (zePLVs) including motorbikes are not covered in this strategy as they do not generally require dedicated electric vehicle charging infrastructure. Some electric motorbikes are able to use the same charging infrastructure as BEVs and PHEVs, but mainly, zePLVs tend to charge from three-pin plugs¹⁰. These vehicles, as lightweight small alternatives to traditional vehicles, could have a role to play with last-mile delivery options and could help to cut emissions from transport.

In addition, the strategy does not cover heavy goods vehicles (HGVs) and their charging needs, as HGVs will require dedicated charging infrastructure and this is outside the scope of this Council.

This strategy addresses the role of this Council and the actions which this Council is able to take. However, creating a strong EV charging infrastructure is not exclusively a job for local government. Central government, supermarkets, commercial garages, retail parks, hotels, leisure attractions and restaurants, Network Rail, the NHS and universities can all play a role to provide accessible EV charge points for those visiting or working there - providing choice, convenience and peace of mind to drivers.

We will work closely with Worcestershire County Council as the highways authority to identify further opportunities to provide accessible charging infrastructure close to residential homes, for those without access to private driveway charging. We will also work closely with the County Council on the local deployment of funding only available to lead transport authorities (such as the Local EV Infrastructure fund, announced February 2023¹¹).

¹⁰ [EST_PLV_Businesses_brochure_FINAL.pdf \(energysavingtrust.org.uk\)](https://energysavingtrust.org.uk/EST_PLV_Businesses_brochure_FINAL.pdf)

¹¹ [Apply for Local Electric Vehicle Infrastructure \(LEVI\) funding - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/apply-for-local-electric-vehicle-infrastructure-levi-funding)

Background

Local and national context

Transitioning to electric vehicles is a key component of the Council's Environmental Sustainability Strategy, helping to reduce the emissions from transport. Transport is currently responsible for 27% of emissions in the city, with road transport accounting for 93% of this. Emissions from transport have fallen by 23% over the last 5 years and so transitioning to electric is an important way to do this. The carbon impact of electric vehicles will continue to reduce as the decarbonisation of the national grid continues, something the Government has pledged to achieve by 2035¹².

Grid constraints could be a limiting factor in the transition to electric vehicles and therefore the Council will seek to avoid these issues by working with our local distribution network operator to provide grid enhancement where required.

The Government has developed a plan to decarbonise transport. The Transport Decarbonisation Plan (TDP), published in July 2021, sets out in detail how to deliver the significant emissions reduction needed across all modes of transport to achieve net zero emissions from transport by 2050. The Setting the Challenge 2020 report identifies the decarbonisation of road vehicles as one of six strategic priorities:

In March 2022, the Government published its [Electric Vehicle Infrastructure Strategy, Taking Charge](#), which sets out their vision and action plan for the rollout of electric vehicle charging infrastructure in the UK and Worcester City Council is aligning its strategy to this plan.

The sale of new petrol and diesel cars and vans is due to be phased out by 2030, with only battery electric and plug-in hybrids with a significant zero-emission range to be allowed between 2030 and 2035. By 2035, all new cars and vans must be fully zero emission at the tailpipe¹³.

Whilst growth in EV sales has been very strong over the last couple of years, industry media specialist GreenFleet identifies that "broader economic conditions and chargepoint anxiety are beginning to cast a cloud over the market's eagerness to adopt zero emission mobility at the scale and pace needed. To ensure all drivers can benefit from electric vehicles, we need everyone – government, local authorities, energy companies and charging providers – to accelerate their investment in the transition and bolster consumer confidence in making the switch."¹⁴

¹² [Plans unveiled to decarbonise UK power system by 2035 - GOV.UK \(www.gov.uk\)](#)

¹³ [Government takes historic step towards net-zero with end of sale of new petrol and diesel cars by 2030 - GOV.UK \(www.gov.uk\)](#)

¹⁴ [April good month for electric vehicle take-up but forecasts soften | GreenFleet](#)

Types of chargers

There are currently four main types of product on the market, differentiated by the rate of charge. The Local Government Association provides the following definitions:

Slow/standard

- 7kW or lower
- typically available in 3.5kW and 7kW power
- four to eight hours to fully recharge, depending on the vehicle and its battery size
- add between 10-25 miles of range per hour
- Useful in locations where EVs are parked for a long time or overnight.

Fast

- between 7-22kW
- many vehicles can only receive a 11kW charge from a 22kW charger
- four to six hours to fully recharge, depending on the vehicle and the charging speed it can receive
- provide up to around 75 miles of range per hour
- useful at destinations where EVs are parked for a few hours (e.g. shopping centres).

Rapid

- between 43-50kW
- most rapid chargepoints are 50kW
- 40-60 minutes for 80% recharge, depending on the vehicle
- provide around 100 miles of range in half an hour
- useful for EVs parked for a quick break (eg service stations, taxis, commercial vehicles).

Ultra-rapid

- over 50kW
- ultra rapid chargepoints currently go up to 350kW
- provide around 200 miles of range in half an hour
- many vehicles currently available may not be able to take a charge at full speed from an ultra-rapid charger
- useful for EVs that need to refuel without a break, as if refuelling at a petrol station.

Charge times are influenced by how empty the battery is at the time, with some drivers preferring to keep their vehicle battery topped up regularly, others letting it run down and recharging from empty.

The most common type used for domestic charging is 7kW which will fully charge most vehicles in around six to eight hours, depending on battery capacity.

A 22kW charge point will charge an average 40kWh vehicle in under two hours, and would take 4.5hrs for a 100kWh battery. However, many vehicles are not able to draw a 22kW charge and so would take a maximum of 11kW or 7kW from a 22kW charger, increasing the required dwell time.

Whilst a number of sources give the average EV battery size as 40kWh¹⁵, many newer vehicles on the market have significantly larger batteries than this, around 70-100kWh.

The next level up is the rapid 50kW charger, which is a popular choice to allow a short stay charge of around one hour.

Ultra-rapid chargers at 150kW or even 350kW also on the market are usually found in locations such as motorway service stations, where customers will pay a premium to charge over a short stay. New EVs can increasingly use ultra-rapid chargers and it is thought that these may encourage more people to buy EVs, by reducing the time required to charge. They are however, very costly to install, often requiring grid upgrades due to the high level of power required. The Council will keep the local need for ultra-rapid chargers under review. It is not thought there is an immediate need for these chargers and there is not a financial business case to support Council investment. Significant external funding would be required in order to invest in ultra-rapid charging.

There are different categories of locations for public chargepoint infrastructure, depending on the location type and also the charging service that is being provided:

- Destination - Charging located at the end of a journey or where drivers stop for an extended period of time. These can be rapid, fast or slow devices.
- On-street charging - Located on residential streets, using infrastructure such as post-mounted chargepoints.
- En-route- Chargers located where drivers will be stopping mid-journey, for example motorway service stations, restaurants and short stop attractions.
- Other - Workplaces, dealership forecourts and other locations which may be 'semi-public'.

Faster charging is not always the most desirable option. For example customers charging near their home, at work or who are visiting the city may want to leave their vehicle for several hours.

¹⁵ [Electric car batteries explained | Octopus EV](#) and [Electric vehicles | Battery | Capacity and Lifespan \(eonenergy.com\)](#)

Plug in hybrid vehicles (PHEVs) which can cover a significant distance in zero-emission mode will still be available post 2030 and may be attractive to some who feel that a pure battery EV will not meet their high mileage requirements. However, battery EVs currently have a greater market share than PHEVs¹⁶. Fast chargers will be important for those driving PHEVs as some of these vehicles cannot use a rapid charger.

After 2035, the only new cars and vans that can be sold will be pure battery EVs, with PHEVs then not being permitted.

Lampposts are often mentioned as a potential solution to host charging infrastructure for on-street parking bays. However, in much of Worcester city, lampposts are located at the back of the footway and therefore cables would need to trail across the footway. In addition to this, the electricity network for the lighting in the city would not support EV charging.

¹⁶ <https://www.smmmt.co.uk/vehicle-data/car-registrations/>

EV ownership now and in the future

Transition to EVs nationally




In 2022, over 20% of new vehicles purchased in the UK had a plug

(either a battery electric vehicle (BEV) or a plug in hybrid (PHEV))



More BEVs were sold in 2021 than the previous five years combined, and this growth in the market continued in 2022, when more BEVs were sold than ever with 267,203 registrations while PHEVs were responsible for 101,414 new car registrations.

Different fuel types

What electric fuel types are there?		Does the vehicle use petrol or diesel?	
		Yes	No
Does the vehicle use electric power? 	Yes, and is a plug-in	Plug-in hybrid electric (PHEV)*	Battery electric (BEV)
	Yes, but is not a plug-in	Hybrid electric (HEV)**	Fuel cell electric (FCEV)
	No	Petrol or Diesel**	Rare fuel types such as biofuels and other emerging technologies

* A range extended electric vehicle is a special case of PHEV, where the conventional fuel does not power the wheels directly, usually only charging the battery for additional range.

** The industry term mild hybrid electric will be split between petrol, diesel, and hybrid electric in these figures.

Image taken from Vehicle Licensing Statistics on Gov.uk¹⁷

It should be noted that the cost of a new electric vehicle is still relatively high, with average prices cited at around £44,000 in September 2022¹⁸, however electric vehicles still have cheaper running costs, even with higher electricity prices. Octopus Energy estimate that EVs are 21% cheaper to run than an equivalent petrol or diesel vehicle. In addition, vehicle road tax is set at 0% until 2025 for BEVs.

There has been a huge increase in the range of EVs on sale in the UK, with more than 40% of models now available as battery electric vehicles or hybrid plug-ins. With this expanded range, the affordability of EVs has improved and is expected to continue to improve.

Fleet vehicles or those purchased through a workplace salary sacrifice scheme are particularly attractive to drivers, as the Government has set low benefit in kind tax rates for EVs. The rate is set at 2% until 2025, much lower than the rates for petrol and diesel vehicles¹⁹.

In total, there is now an estimated 477,000 BEVs on the road in the UK and more than 790,000 PHEVs.

Demand for used electric cars is growing, too. In 2021, demand for used EVs increased by 119.2%, with 40,228 second-hand electric cars being sold. The

¹⁷ [Vehicle licensing statistics: July to September 2022 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/vehicle-licensing-statistics-july-to-september-2022)

¹⁸ [How much does an electric car cost? | Octopus EV](https://www.octopusenergy.com/ev-cost)

¹⁹ [Benefit in Kind tax is changing | Octopus EV](https://www.octopusenergy.com/benefit-in-kind-tax)

second hand market is expected to continue to grow significantly over the next ten years.

A range of models exist predicting future uptake of EVs. The National Grid Future Energy Scenarios – Consumer Transformation Curve predicts that by 2030, around 36% of the total UK car and van fleet will be electric.

GreenFleet News, 4 May 2023 analysing battery electric vehicle sales in April 2023 and the projections for market share and growth in demand going forward

According to the SMMT, new BEVs remained the second most popular fuel type in April, coming behind petrol, with deliveries up by more than half to 20,522 and 15.4% of the market. PHEVs also posted strong growth, up 33.3% with 8,595 registered in the month, while hybrid electric vehicles (HEVs) recorded a 7.7% increase to 15,026 units.

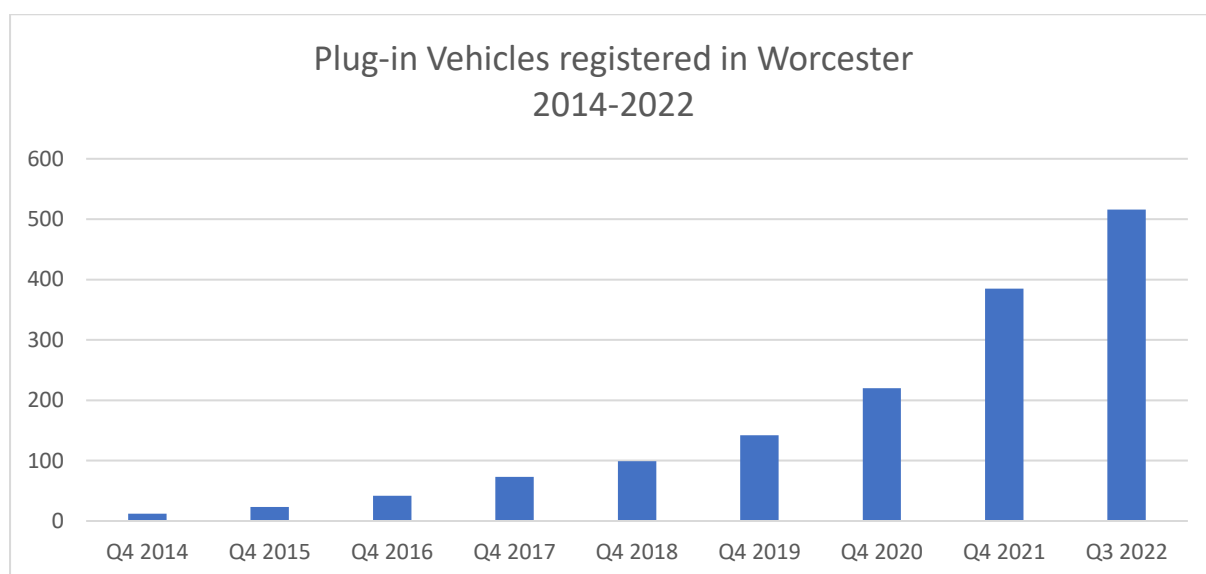
As a result, electrified vehicles accounted for more than one in three registrations in April. Petrol-powered cars retained their best-selling status, comprising 58.1% of all registrations.

The sector is, however, less optimistic about growth in demand for BEVs, downgrading their expected 2023 market share from 19.7% to 18.4%, with high energy costs and insufficient charging infrastructure anticipated to soften demand. The latest outlook for 2024, meanwhile, suggests that 22.6% of new car registrations will be BEVs, a downward revision from the 23.3% forecast in January. With a zero-emission vehicle mandate due to come into effect next year, greater and faster investment in infrastructure, and more incentives to encourage purchase are essential to drive consumer confidence and accelerate uptake.

Current and predicted EV ownership in Worcester

Department for Transport figures show there were 516 plug-in cars registered to individuals in Worcester at the end of 2022. This is around 1% of the total vehicles in the city. There has been strong growth in the number of plug-in vehicles in the city across the last few years.

The numbers presented in Graph 1 do not show vehicles registered to companies or those which are fleet vehicles registered to a different address but owned by someone living in the city.



Graph 1. Data from Department for Transport vehicle licensing statistics, table VEH0142²⁰.

Nevis, the Insights Toolkit developed by Cenex on behalf of the Government, provides projections on electric vehicle adoption. The numbers reproduced here to help understand the numbers of electric vehicles likely to be licensed in the city by certain years are sourced from the toolkit. Low, medium and high projections are given, depending on the analysis of the speed at which adoption and transition to EVs will occur.

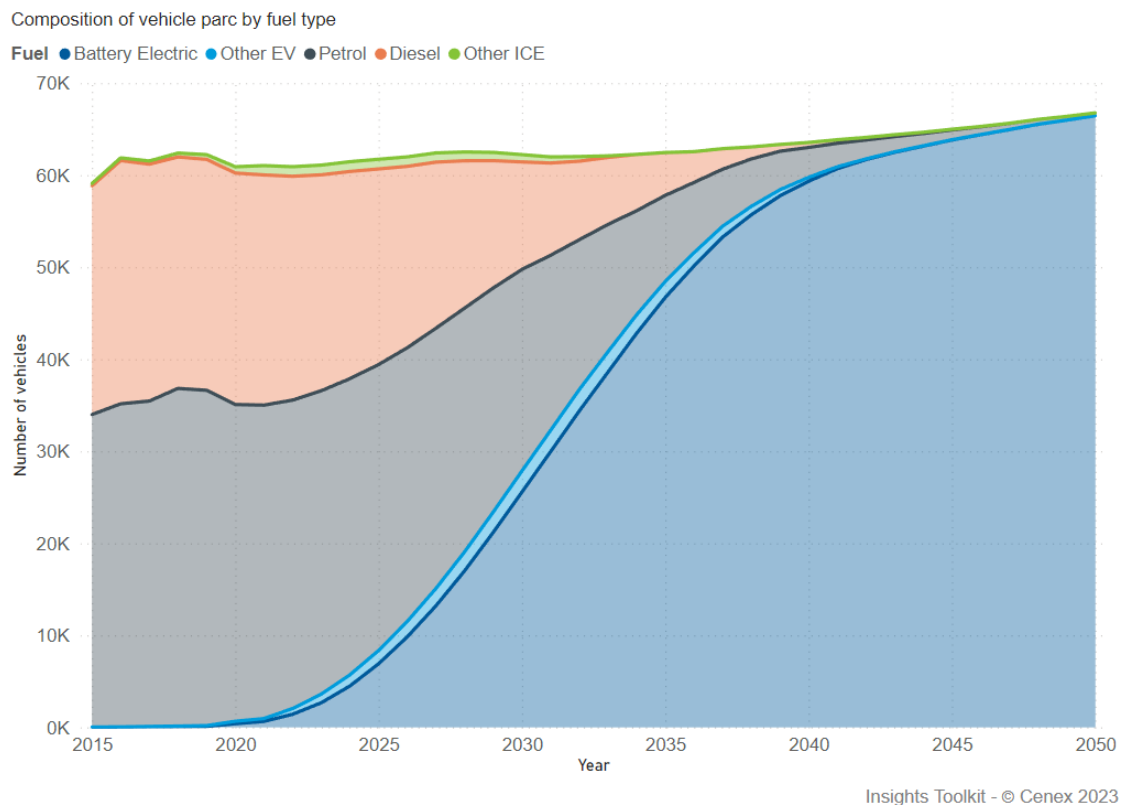
The projections are based on the following assumptions:

- Slow: Road to Zero (High Scenario) – 70% of new car and LGV vehicle sales are PiV by 2030
- Medium: ZEV mandate – 100% of new car and LGV sales are PiV by 2030
- Fast: 2027 – 100% of sales are PiV by 2027, to simulate what could happen if the uptake of EVs continues to accelerate.

All this data is specific to Worcester and is available to all local authorities.

²⁰ [Vehicle licensing statistics data tables - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/vehicle-licensing-statistics-data-tables)

Graph 2 indicates the expected growth in plug-in vehicle numbers, alongside the declining numbers of petrol and diesel numbers as the Government’s legislation in 2030 means that all new cars sold must be plug-in vehicles. This includes fully battery electric vehicles, plug-in hybrids and hybrids ‘with significant zero emission capability’²¹.



Graph 2. Composition of vehicles registered in Worcester (vehicle parc) by fuel type from 2015-2050, according to the medium projections. Graph from the Nevis Insights Toolkit ²²

The Insights Toolkit allows for analysis of the three different projections. The table below provides the numbers of vehicles expected according to the three projections, by 2030. There is significant difference between the slow and high projections, around 8,000 fewer battery electric vehicles expected on the slow projection.

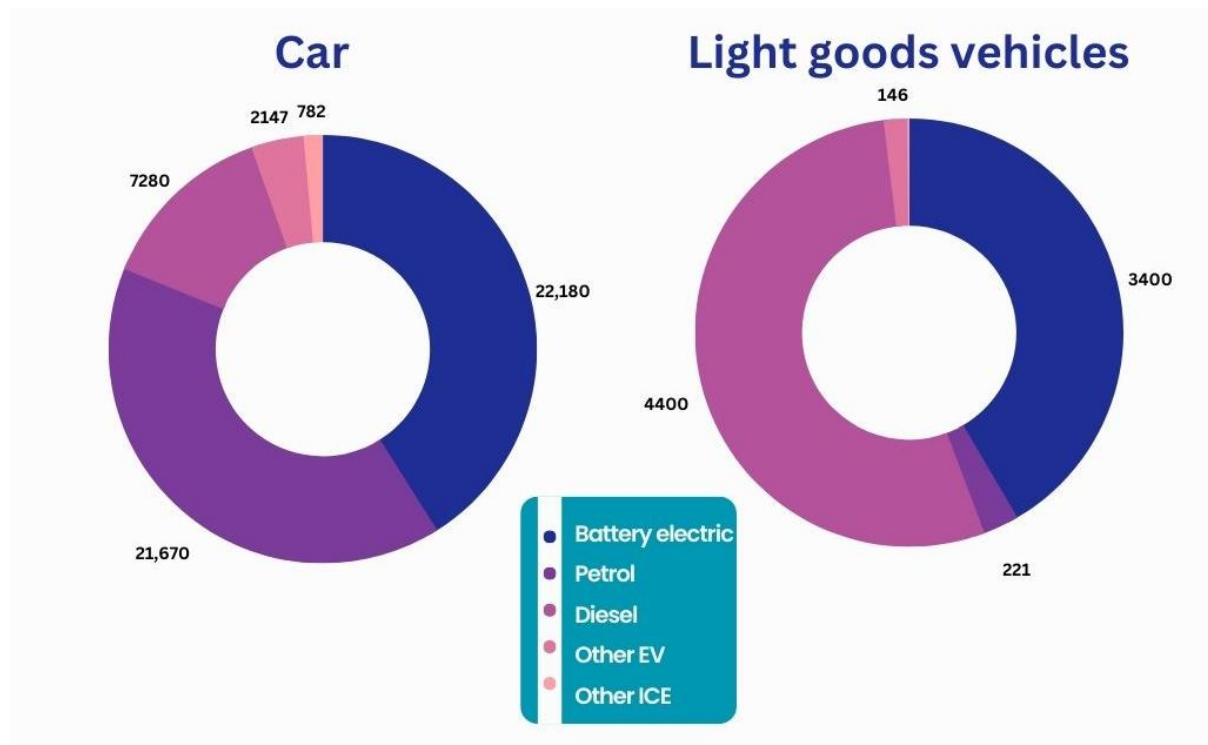
2030	High	Medium	Slow
Battery electric	27,420	25,580	19,130
Other EV (eg. hybrid)	2,416	2,293	1,868
Petrol	20,812	21,891	25,458
Diesel	10,820	11,680	14,716
Other ICE	741	793	974

²¹ [Transitioning to zero emission cars and vans: 2035 delivery plan \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

²² [Insights Toolkit - National EV Insight & Strategy | Delivered by Cenex](#)

Table 1. Numbers of vehicles by fuel type expected in Worcester in 2030, according to high, medium and slow uptake of electric vehicles.

Projected number of vehicles in 2030



Graph 3. Data from the Insights Toolkit for Worcester, medium projection by 2030

Graph 3 then provides the expected numbers of vehicles in Worcester under the 'medium' projection in 2030. This shows that by this point, the number of electric vehicles will have overtaken that of petrol vehicles, at 36%.

Graph 3 also illustrates that by 2030 the city will have around 3,400 battery electric light goods vehicles. This demonstrates the need to ensure that public charging provision is accessible to these business vehicles. By 2025, there will be around 700 battery electric light goods vehicles – this is around 10% of the light goods vehicles fleet.

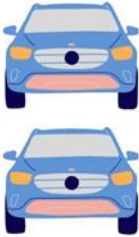
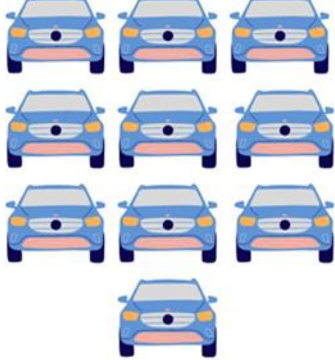
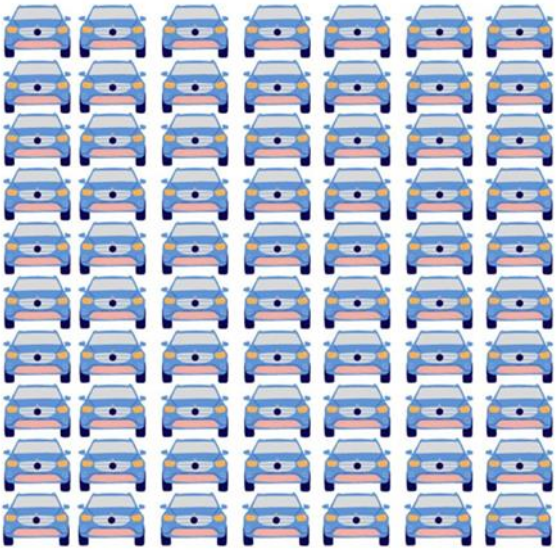
By 2025, it is expected that around 14% of the number of registered cars in the city will be electric, representing around 7,600 vehicles.

Predicted requirements for chargepoint infrastructure

The Cenex toolkit also provides projections for the required public charging infrastructure, based on the requirements of the projected numbers of electric vehicles.

The definitions for the types of chargepoint used by the toolkit are different to those used in this strategy, with 7kW chargepoints being categorised as standard:

- Standard – 7kW to <22kW
- Fast – 22kW to <50kW
- Rapid – 50kW to <150kW
- Ultra rapid – 150kW +

Home Charger	On-street Charger	Rapid Charger
1-2 EVs	10 EVs	70 EVs
		

It is thought that in areas with low numbers of driveways, one public EV charger will be required for every 10 EVs. Rapid chargers are likely to cater for around 70 EVs.

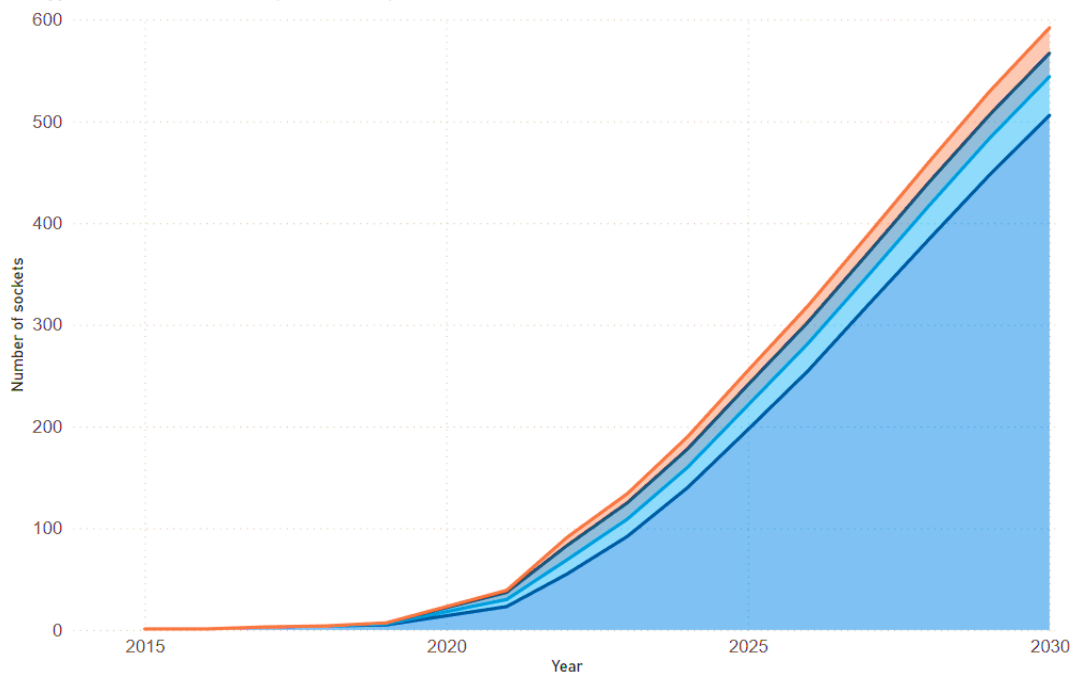
The toolkit notes that drivers with off-street parking will likely use the public network at some point, particularly when completing high mileage trips. To account for this, 6.31% of all charging demand from these drivers is assumed to be completed on the public charging network, which is the percentage of trips

driven in a car or van that are than 25 miles as derived from the National Travel Survey data for 2019²³.

This graph shows the numbers of chargers of each type which will be required:

Projected EVI requirement

EVI type ● Standard ● Fast ● Rapid ● Ultra-Rapid

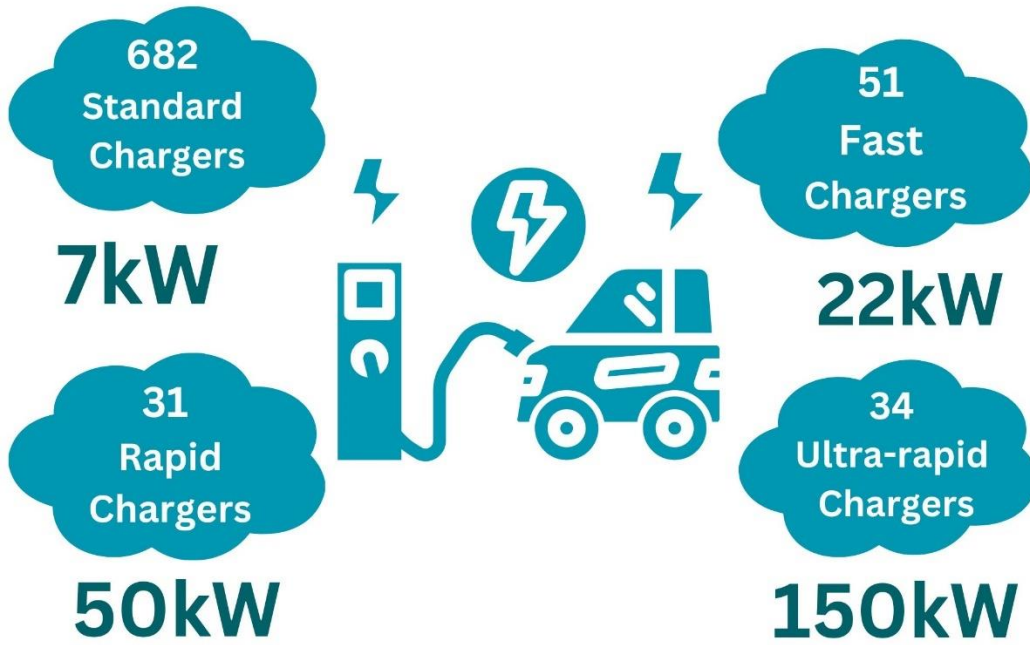


Insights Toolkit - © Cenex 2023

Graph 4. Projected electric vehicle infrastructure requirements by 2030 in Worcester according to the medium projection of electric vehicle numbers.

²³ [Mode of travel - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

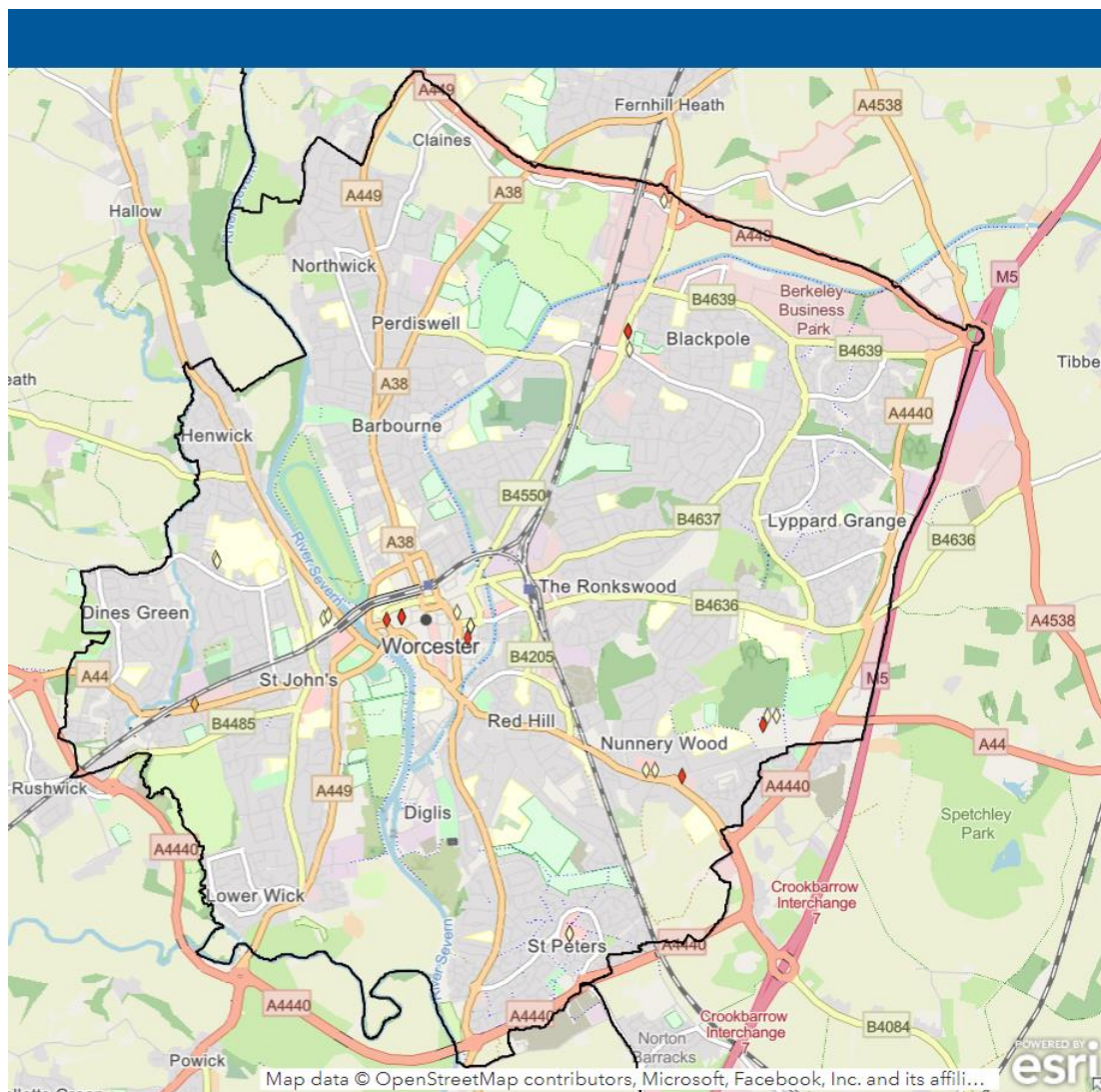
By 2030 we can expect to need



Current public charging availability

Worcester currently has 128 electric vehicle charge points (individual charging connectors) available for public charging. The region with the most chargers (London) has 244 per 100,000 residents²⁴.

All of the existing chargepoint locations are listed in Appendix 1.



Map 1. Map of the chargepoint locations from the Nevis Insights Toolkit

Worcester has two railway stations within the city and one situated just outside the city boundary, a parkway station. Worcester Foregate Street station in the centre of the city has no car park. Worcester Shrub Hill station has some limited parking with many commuters using the council owned Tallow Hill car park when travelling from Shrub Hill station. Worcestershire Parkway has ample parking and 25 7kW chargers were installed there when the station was built in 2020.

²⁴ [Electric vehicle charging device statistics: October 2022 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/electric-vehicle-charging-device-statistics-october-2022)

Other facilities in the city where people may be travelling reasonable distance by car to attend include Worcestershire Royal hospital, which has not yet installed any chargepoints, although this are being considered.

Prior to the completion of the charging hub at St Martin's Gate in autumn 2021 and the hub at the Worcester Arena earlier in 2023, charging facilities in the city were limited. There are a few commercial units at supermarkets and pubs across the city, some rapid units and others 7kW. The University have a small number of 7kW destination chargers on their St John's Campus.

Worcestershire County Council installed a number of rapid chargers to encourage early adopters of electric vehicles in 2014 and these were reasonably successful, but came to the end of their life and have now been removed. One of these chargers was at SMG, two at Crowngate and one at the County Council's main headquarters, County Hall.

The Highways Act prevents the trailing of cables from a home to a vehicle across a footpath, as these are a safety hazard, can limit accessibility of the footway and can negatively impact on people with disabilities. Currently, there is no on-street charging infrastructure in Worcestershire.

Worcester Arena

The University of Worcester has invested in a significant charging hub at their Riverside campus, in St John's on the west side of Worcester. The hub has 6 rapid charge points (to charge 12 vehicles simultaneously) and spaces for 104 vehicles to charge on 7kW chargers. This facility is open to all, staff, students and members of the public, but is restricted to opening hours for the campus. Vehicles must pay to park. When open, this charging hub provides ample charging opportunities for local residents without driveways in this area of the city. This facility is also height restricted.

Since June 2022 in England, any new building developments with associated parking must have access to EV charge points²⁵. This mean residents and businesses in these new developments or premises has the assurance of access to the charging infrastructure they need.

Summary of new Building Regulations from Pod-Point:

- Residential buildings undergoing a major renovation which will have more than 10 parking spaces must have at least one EV chargepoint per dwelling with associated parking, along with cable routes in all spaces without chargepoints.
- All new non-residential buildings with more than 10 parking spaces must have a minimum of one chargepoint and cable routes for one in five (20%) of the total number of spaces.
- All non-residential buildings undergoing a major renovation that will have more than 10 parking spaces must have a minimum of one chargepoint, along with cable routes for one in five spaces.

²⁵ [Approved Document S: Infrastructure for the charging of electric vehicles \(publishing.service.gov.uk\)](#)
[EV Charging Legislation for Developments in the UK | Pod Point \(pod-point.com\)](#)

Existing EV charge points owned by the Council

Current situation

The authority runs St. Martin's Gate multi-storey car park (WR1 2BS), based in the heart of the city centre. 12 EV charging points are located within this car park (six 50kw rapid and six 22kw fast) and these have been operational since November 2021.

These points are powered by National Grid electricity from green renewable sources and are supplemented by electricity generated by Solar Photovoltaics on the roof of the car park.

St Martin's Gate Charging Hub

This city centre charging hub, comprised 6 rapid chargers and 3 fast (22kW) chargers, has been very successful since it went live in the autumn of 2021. Funded through the Towns Fund, there have been over 1,100 individual charging sessions at the site - collectively powering EV vehicles to drive over 85,700 miles. Petrol or diesel cars would have released over 16.5 tCO₂ for an equivalent distance.

Customer comments (posted on Zapmap) include the following:

- *'This is what we need, good value charging, free parking with easy access to the city centre.'*
- *'Straightforward and speedy charge.'*
- *'Excellent choice of chargers and free parking too.'*
- *'Brilliant site. Loads of bays, clearly signed as EV only, right by the entrance.'*

Chargepoint and parking fees

The City Council currently owns its charging network. We are committed to providing attractive tariffs which reflect current market rates, whilst also covering the cost of service provision.

In July 2021, Policy and Resources Committee resolved to "approve the principle that a market rate tariff should be applied for use of electric vehicle charge points at St Martin's Gate Car Park" and delegated authority to the Corporate Director for Homes and Communities and Corporate Director, Finance and Resources to implement a market rate tariff and to keep it under review annually.

Currently, free parking is offered for rapid charging bays for a maximum of 60 minutes with a 6 hour no return policy.

Normal parking fees apply for use of the 'fast' chargepoints, and there is a maximum duration of four hours.

Parking fees in additional locations where EV chargers are situated will be determined on a case by case basis under the Council's standard governance procedures. It is anticipated that drivers will be able to charge overnight in the majority of locations, without paying a parking fee as currently overnight parking is free in all Council car parks.

Customers will be able to pay to charge by debit or credit card, if they do not wish to use a phone app.

Investment in 2023

In 2023 the City Council will install three twin 7kW and one twin 22kW chargers at King Street car park (WR1 2NX), allowing eight electric vehicles to charge simultaneously. Eight twin 7kW and two twin 22kW chargers will be installed at Tallow Hill car park (WR5 1JT), allowing 20 vehicles to charge simultaneously.

The Council allocated £200,000 of finance to chargepoint investment in 2022. £55,000 has been assigned to the infrastructure in Tallow Hill and King Street car parks²⁶. This investment has been supported with £68,560 of funding from the Government's On Street Residential Chargepoint Scheme (ORCS). This grant fund is specifically to support the installation of chargers for residents without access to private driveways.

It was recognised that there was existing demand from local residents for charging infrastructure in the Cathedral ward, which has the highest percentage of households without access to private off street parking where a chargepoint can be installed. Both Tallow Hill and King Street car parks are located in the Cathedral ward.

As the car parks are accessible 24 hours a day, residents will have the option to charge overnight, with no parking fees between 6pm and 8am.

King Street is well used throughout the day and by visitors to the night-time economy. Tallow Hill is popular with commuters using Shrub Hill Station and it is expected that this demand will grow with the development of the Shrub Hill Quarter.

The calculation of the business case for the installation of the chargers at Tallow Hill and King Street showed that external funding is currently required to make the installation and ongoing operation of chargepoints financially viable. The revenue costs associated with the ongoing upkeep of chargepoints, including the maintenance but also back office system, communications and insurance, give little opportunity for paying back significant capital investment. The business case is built on estimates of user demand and if these are exceeded, the case for investment in further chargepoints increases.

²⁶ [Business Case for the Installation of Electric Vehicle Charge Points.pdf \(worcester.gov.uk\)](#)

User groups



1. Residents
2. Tourists
3. Commuters
4. Taxis
5. Businesses

Residents

33% of households in Worcester are without private off-street parking, according to research by Field Dynamics²⁷. Of this 15,000 households, around 11% of them are 'in catchment' of a public charger – that is, within five minutes walk of a charger. Having no private drive on which to install an EV charge point to charge a car will be a major barrier to residents moving away from petrol and diesel cars.

Most modern domestic properties have a single underground service cable or overhead conductor which provides a direct electricity connection to our network. There are however many older properties connected historically that share a single service, called a 'looped service'²⁸. As recognised in the National Grid EV strategy²⁹, homes with looped services must be un-looped for the connection of low carbon technologies such as charge points. This can cause a delay to residents being able to install their own private chargepoint and mean they may be reliant on public charging facilities during this time. Our local distribution network operator, National Grid, is responsible for the un-looping of residences and undertakes this at no cost to the resident. This work may also take place without a specific request, as part of general grid upgrades to allow for more low carbon technologies to be used.

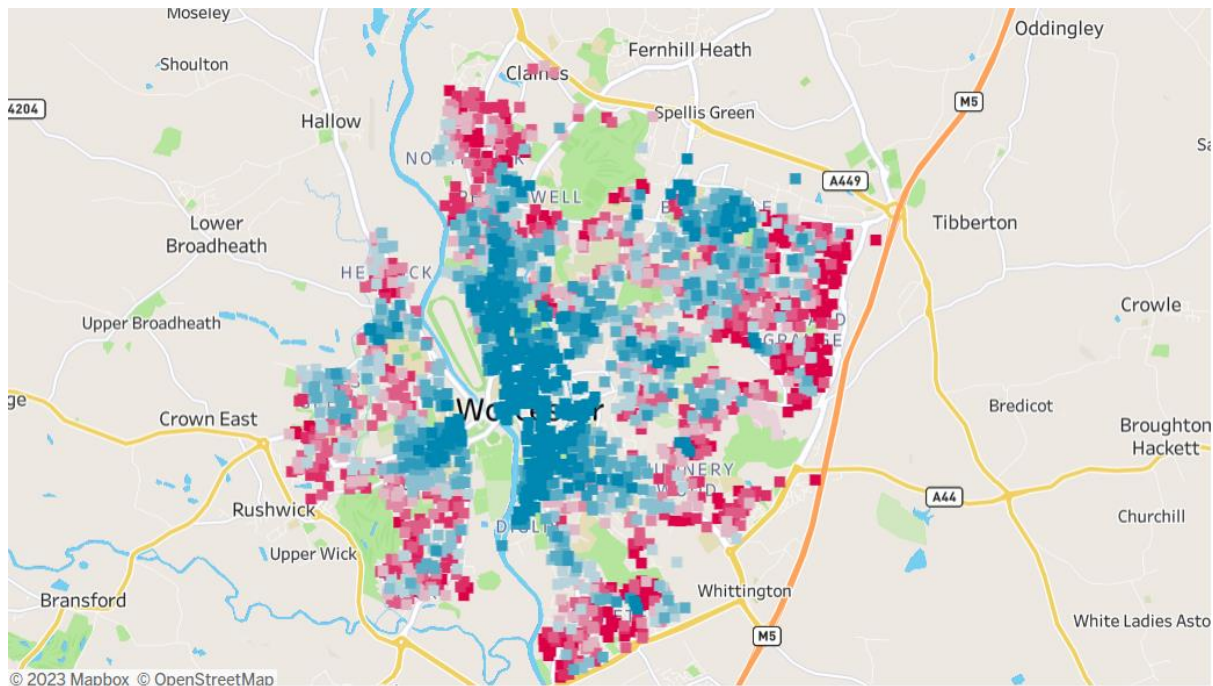
²⁷ [On Street Charging \(acceleratedinsightplatform.com\)](https://acceleratedinsightplatform.com)

²⁸ [Looped services | Northern Powergrid](#)

²⁹ [download \(nationalgrid.com\)](#)

Recognition that provision of charging infrastructure for residents without private off-street parking advances equality of opportunity between persons who share a relevant Protected Characteristic and persons who do not share it, as people with age or disability protected characteristics are more likely to live in accommodation without private off-street parking.

Motability vehicles, which are available for some residents with disabilities, are always new vehicles and are provided on three-year leases. With all new vehicles sold to be electric or hybrid by 2030, motability customers will be limited to these vehicles. Many are already choosing battery operated vehicles and motability have 32 models available to choose from³⁰. As noted above, people eligible for a motability vehicle may be more likely to live in accommodation restricting the installation of a private chargepoint, meaning they will be reliant on public charging. Motability’s research estimates that around half of their drivers with electric vehicles will be dependent on public charging³¹. This highlights the importance of ensuring that new chargepoints installed are accessible to all.

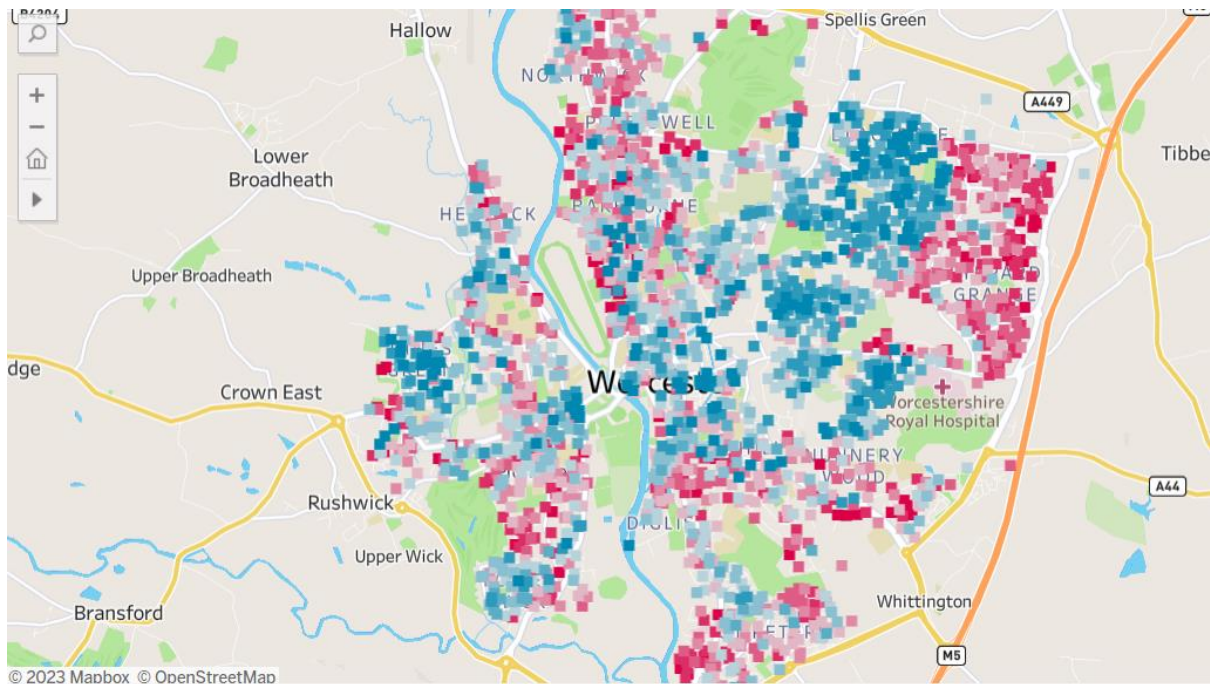


Map 2. Taken from Experian data set, showing likely areas of the city in blue with a high proportion of households in that postcode area without a driveway.

In Map 2 above, the darker the red the higher the likelihood of a drive. The darker the blue, the more likely it is that households have no drive.

³⁰ [Our electric cars | Motability Scheme](#)

³¹ [Electric Vehicle Project | Motability](#)



Map 3. Experian data, showing areas of the city likely to own an EV in 2026. The darker the red the higher the likeliness a postcode will adopt EVs. The darker the blue the least likely a postcode will adopt EVs.

Using the two maps together will help to inform where public charging infrastructure is most likely to be required over the next 2-5 years.

Car club users are a growing population in Worcester with a new car club in the Arboretum starting in 2022 and more to follow in 2023. Currently none of the vehicles offered are electric vehicles but nationally, a much higher percentage of car club vehicles are electric than in private ownership³². These vehicles will need charging infrastructure when they are adopted by car clubs in the city, as is expected to happen.

Tourists

Provision for tourists is very important, as these drivers will have no alternative charging provision when away from home.

Currently, it is understood that none of the major hotels in Worcester have installed charging infrastructure. Accessible public charging infrastructure is therefore currently particularly important for this user group.

Commuters

The most recent data available specific to Worcester for distance travelled to work is from the 2011 Census, when approx. 4% of people reported travelling over 30km by car³³. This correlates well with the national data available from the

³² [CoMoUK Electric Vehicles in Car Clubs.pdf](#)

³³ [DC7701EWLA \(Method of travel to work \(2001 specification\) by distance travelled to work\) - Nomis - Official Census and Labour Market Statistics \(nomisweb.co.uk\)](#)

2021 Census, which found 4.4% of commuters travelled over 30km³⁴. Whilst most newer electric vehicles have mileage ranges of greater than 60km, drivers of older models may seek a charge before driving home. Of course, if a charger is not available easily at home, then charging whilst at work may be essential for some drivers. The commuter market is therefore likely to be a small but significant group.

Taxis (Hackney carriages and private hire vehicles)

The City Council has agreed to run a trial to support taxi drivers to transition to an electric vehicle. Through this trial, the initial taxi licence fee will be waived for the first 10 new electric vehicles and will be waived over the subsequent two years of renewals³⁵.

Based on the proposed fees & charges for 2023/24 the saving to an individual hackney carriage vehicle driver will be £1,226 over a three-year period.

The Council will seek to promote the trial and also the Government's plug-in taxi grant, which is an incentive scheme to support the uptake of purpose built ULEV taxis.

It is recognised that taxi drivers need access to rapid charging 24/7, which is not currently offered at St Martin's Gate. However, the rapid and fast charging facilities at the University of Worcester's Worcester Arena site provide 24/7 access, which should fulfil this need. The charging points at St Martin's Gate will provide adequate city centre charging during the day (7am to midnight). The charging facilities at St Martin's Gate are likely to be sufficient for the growing electric taxi market for some time, but monitoring needs to take place to ensure vehicles are not queuing to use the rapid chargepoints. Ensuring that reliable charging is available without having to queue will be fundamental for taxi drivers looking to replace their existing vehicle with an electric option.

Businesses

Workplace charging can provide charging for employees as businesses provide workplace charging to encourage transition to EVs from their employees to reduce the impact of their grey fleets. However, fleets where vehicles do not regularly return to a workplace or do not stay there for long periods of time such as overnight are a challenge. Employees in this instance may not have driveway charging available to charge their work vehicle, and therefore will be reliant on public charging. They may need rapid charging in order that loss of the working day to charging is minimised, and the charging needs to be easily accessible to them and to their area of work.

³⁴ [Travel to work, England and Wales - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk)

³⁵ [Agenda for Environment Committee on Tuesday, 24th January, 2023, 7.00 pm - Modern Council \(worcester.gov.uk\)](https://www.worcester.gov.uk)

Only 45 workplace charging grants have been claimed in Worcester (to January 2023) which is the second lowest in Worcestershire³⁶. Bromsgrove and Redditch have 118 and 95 respectively.

A key concern in this area is the height restrictions on car parks, restricting access to higher light goods vehicles. Small vans regularly use the St Martin's Gate car park charging hub, but vans over 2.2m in height will be unable to use this facility or the charging facilities at the Worcester Arena. This will impact a significant number of business fleets and is a key challenge to overcome. If charging facilities are not available where required then the transition of fleets to electric will be delayed. The Insights Toolkit 'medium' projection forecasts that there will be nearly 700 battery electric light goods vehicles in the city by 2025.

³⁶ [Electric vehicle charging device statistics: October 2022 - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/statistics/electric-vehicle-charging-device-statistics-october-2022)

Strategic Principles

Infrastructure principles

Summary

- *To install all future chargepoints in accordance with the British Standard for the design of public EV charging infrastructure – PAS 1899:2022 Electric Vehicles – Accessible charging*
- *To deliver a network that complements the available commercial chargepoints to provide choice and scale of charging opportunities within the city*
- *To work to meet the needs of residents without private off-street parking who wish to transition to EVs, through the use of Council car parks and other land*
- *To ensure that charging infrastructure can be easily paid for and technological barriers to use are minimised*
- *To ensure that the installation and ongoing operation of City Council chargepoints is based on a sound financial business case.*
- *To apply for external funding wherever possible, to maximise investment in charge point infrastructure.*
- *Commit to maintain chargers, ensuring maximum availability and reliability of the network*
- *To future proof investment*

To install all future chargepoints in accordance with the British Standard for the design of public EV charging infrastructure – PAS 1899:2022 Electric Vehicles – Accessible charging

Recognising the barriers that disabled drivers of electric vehicles have faced with the accessing and using public charging, including difficulties with the weight of charging cables, the force required to attach the connector, the lack of dropped kerbs around chargepoints and unsuitable parking arrangements³⁷, future infrastructure will be designed in accordance with the new standard. The Design Guidance available from Designability will be used to ensure correct interpretation of the new standard³⁸.

The design guidance includes requirements on lighting around charging infrastructure, which is very important to ensure that users feel safe at all times, as well as being able to see what they are doing when plugging their vehicle in. Research for the Department for Transport³⁹ illustrated problems with gender

³⁷ [Electric Vehicle Project | Motability](#)

³⁸ [Designability | Design Guidance | Accessible EV charging](#)

³⁹ [Electric Vehicle Charging Research. Survey with electric vehicle drivers. Research report. \(publishing.service.gov.uk\)](#)

equality and charging infrastructure. The research found that women in particular are less likely to feel safe using existing public charging infrastructure (55% of women gave a score of 8-10 where 10 means extremely safe, compared to 70% of men). Some of the reasons for low scores included chargers located in isolated or dark areas and insufficient lighting.

All proposals for future charging infrastructure will be subject to completion of an equality impact assessment which will cover all protected characteristics. This will be published alongside committee approval documentation.

To deliver a network that complements the available commercial chargepoints to provide choice and scale of charging opportunities within the city

The Council will seek to complement the existing and any future infrastructure planned by commercial operators. As recognised however, there are many areas which are not yet commercially viable to invest in chargepoints and the Council seeks to ensure the charging needs of all residents, businesses, tourists etc are met with provision of chargers in less commercially viable locations and using Council land.

The Council will seek to work closely with partners such as Worcestershire County Council and National Grid in order to achieve this objective. National Grid seeks support from local authorities to support their need to know when 'low carbon technologies' such as electric vehicles and associated infrastructure are connected to enable them to take proactive steps to address possible grid constraints. The Council will regularly engage with the local National Grid ED team to discuss plans for EV charging and to speed up and streamline applications for EV connections.

To ensure that charging infrastructure can be easily paid for and technological barriers to use are minimised

Tariff to be charged will be, as currently, a pence per kWh taken tariff. No minimum fee will be imposed, or a connection fee, beyond the transaction fee charged for use of a credit/debit card.

Chargers will always be available without subscription. 7kW units may be available only via an app rather than through a contactless card, but no subscription will be required.

To ensure that the installation and ongoing operation of City Council chargepoints is based on a sound financial business case.

EV charging is a developing business area for the Council. As usage grows this is becoming a significant area in terms of capital expenditure, ongoing operational costs and income. In line with the Council's decision to charge a market rate it is recognised that whilst seeking to promote usage the Council's infrastructure must be financially viable.

To apply for external funding wherever possible, to maximise investment in charge point infrastructure.

EV charging will be funded by drivers who use City Council-run charge points.

In addition to procurement and installation, this figure includes National Grid infrastructure costs. The Grid's role is essential to the roll out of all new EV infrastructure, ensuring that sufficient power can be drawn from the local network to serve the proposed chargers.

The City Council will apply for external funding wherever possible, to maximise its investment in charge point infrastructure.

The Council will also work closely with Worcestershire County Council, which as the Local Transport Authority, is eligible to apply for the recently announced Local EV Infrastructure (LEVI) funding⁴⁰, which supports local authorities in England to plan and deliver chargepoint infrastructure for residents without off-street parking. The fund includes capital funding to support chargepoint delivery and capability funding to upskill staff.

The Council will consider different models as required for ensuring EV infrastructure is provided as required by users across the city. This may mean, as in the case of the chargepoints currently in Council car parks, that the Council retains ownership of the assets and sets the tariffs. In other circumstances, other models will be considered.

Commit to maintain chargers, ensuring maximum availability and reliability of the network

Chargepoint reliability has been a significant issue for EV drivers as the network has developed over the last eight to ten years. Encountering broken chargepoints or chargepoints which are unusable due to issues with the communications or payment systems is a source of frustration and knowledge of these issues can dissuade prospective EV owners.

The Council undertakes to provide high quality, reliable charging infrastructure. This is vital to ensure residents have the confidence to switch to an EV, knowing that the charging infrastructure will be available to them. This means ensuring regular ongoing maintenance of the units and minimising downtime where chargepoints are not operational.

To future proof investment

The technology associated with electric vehicles is rapidly evolving. The City Council therefore needs to keep abreast of future trends and ensure its infrastructure will meet the needs of drivers for several years.

Through consultation with residents and businesses, including through online forms and face to face opportunities, the Council will seek to plan future charging infrastructure in line with customers' feedback and data, where available, on user habits.

Data on existing charging hub usage will be regularly evaluated and will be used to inform future charging locations.

⁴⁰ [Apply for Local Electric Vehicle Infrastructure \(LEVI\) funding - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/news/levi-funding-announced)

We will take regular independent advice from organisations including the Energy Saving Trust, Midlands Net Zero Hub and Sustainability West Midlands to ensure that any investment the Council makes has been scrutinised by experts in the field.

We will also follow fair, open and transparent procurement procedures to ensure that the Council doesn't become over-reliant on any individual supplier - and that new, innovative players in the market have an opportunity to compete and demonstrate the performance and value of their products.

Location principles

Summary

- *To install chargepoints wherever possible to have 24:7 access, enabling people to charge whenever they need to*
- *To work to meet the needs of residents without private off-street parking who wish to transition to EVs, through the use of Council car parks and other land*
- *Areas of land which are at significant risk of flooding will be avoided.*
- *To assess opportunities for charging provision on land with no height restrictions*
- *To use available data to identify the key areas for new chargepoints to be installed to decide on and prioritise locations, ensuring effective use of available funding*

To install chargepoints wherever possible to have 24:7 access, enabling people to charge whenever they need to

Allowing people the flexibility to charge whenever suits them is important, recognising that shift workers, taxi drivers and others will need to charge throughout the night. St Martin's Gate car park, our main charging hub, is closed between midnight and 7am, meaning that this does not currently provide the flexible opening that would be ideal. This will be a key consideration with planning future sites.

To work to meet the needs of residents without private off-street parking who wish to transition to EVs, through the use of Council car parks and other land

The Council is keen to ensure that those residents without driveways are not held back from purchasing an EV. This strategy aims for all residents to have access to a charging facility within ten minutes' walk of their home, by 2030. A recommended ratio of chargers to households is currently around 10 households to one charger. However, as the Council is not the Highways Authority, its ability to meet this objective will depend on the strategies of partners.

Whilst we cannot install chargers on-street, we can work to provide chargers near to residential areas with high densities of housing without private driveways. It is also recognised that should Worcestershire County Council seek to install on-street chargers in the future, areas of Worcester City are likely to be unsuitable, due to challenges such as the narrow pavements.

Where possible, where chargepoints are aimed at providing reliable public charging facilities at a reasonable cost to local residents without access to private off-street parking, residents permits will be made available for free parking from 6pm until the next morning. This is in line with the requirements made for chargepoints funded under the On-Street Residential Chargepoint Scheme (ORCS). There will be a requirement to live close to the charger in order to be eligible for one of these permits.

The priority will be to utilise land which the Council owns. This means looking beyond the Council's car parks and seeking opportunities on other Council owned land, where this is situated near residences where people will be unable to install their own private charging. Where land is sought from private companies, unless this land is leased free of charge then it is likely to make a business case for the installation non-viable.

It is unlikely that Council land will be sufficient to meet the charging needs of all Worcester residents with no access to off-road parking.

Worcester City Council will work closely with other local organisations to share EV infrastructure plans and maximise public investment.

Areas of land which are at significant risk of flooding will be avoided.

Worcester is built on the River Severn, which floods on a regular basis. EV infrastructure could be significantly damaged by exposure to floodwaters. A primary consideration for the Council is ensuring that charge point locations are not likely to be subject to flooding.

This means that around half of the Council owned city car parks are discounted for EV infrastructure. It will also mean that some businesses and key leisure facilities, such as hotels, will be unable to install EV charging infrastructure in their own car parks, due to the flood risk. There may therefore be a greater reliance on the available public charging infrastructure.

The following Council pay-and-display car parks can not be considered for installation of charging infrastructure:

- Pitchcroft (Castle Street, WR1 6EJ)
- Croft Road (WR1 3NZ),
- Newport Street (WR1 3NR),
- Tybridge Street (WR2 5BA)
- Cattlemarket (WR1 3NZ)

To assess opportunities for charging provision on land with no height restrictions

Land which could provide charging opportunities for vehicles which are above the Council's car park height restrictions, such as transit vans, will be of particular interest, as currently there is limited charging provision for these vehicles.

To use available data to identify the key areas for new chargepoints to be installed to decide on and prioritise locations, ensuring effective use of available funding

A data-driven approach will ensure that the right chargepoints are located in the right places, available for the right vehicles – not locking out those who need them through height restrictions or time restrictions. Data will lead to understanding of where residents are in need of chargepoints and over time, where chargepoint availability has become constrained.

The following section details potential locations on City Council owned land.

Potential locations for future charging infrastructure

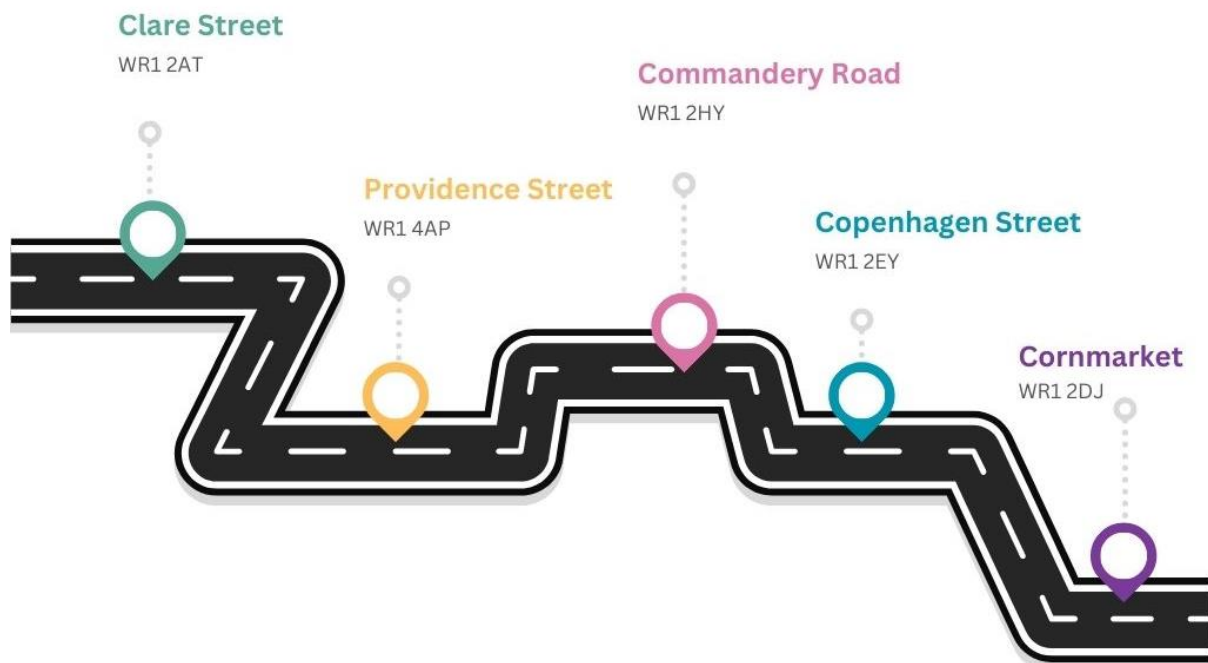
The Council will initially prioritise the positioning of charge points in areas where there is likely to be the highest level of use. Factors taken into account will include demand from local residents; proximity to retail and visitor attractions and business demand.

The higher the level of usage, stronger the business case will be to borrow the required capital funding. The conditions placed upon any available grants will also influence location.

The priority for the next couple of years will be the installation of 7kW chargers to meet the needs of residents and businesses without access to private off street charging. Beyond that time period, more rapid charging provision for tourists, taxi drivers, businesses etc is likely to be required as number of EVs increases and the need increases from vehicles which cannot use St Martin's Gate.

Pay and display car parks

Worcester City Council operates 14 pay-and-display car parks in the city centre. St Martin's Gate car park has the existing charging hub and Tallow Hill and King Street will have infrastructure installed later in 2023. A number of car parks are discounted due to flood risk. This leaves the following pay and display car parks where there is potential to install EV charge points:



It is more cost-effective to install charge points in locations where power connections are already in place. There is potential to double the volume of charge points at St Martin's Gate car park (WR1 2BS) from the existing 12 to around 24 – which would cost about a quarter of the price compared to the installation of points at a brand new location.

Providence Street is situated very close to St Martin's Gate car park where our existing charging hub is located.

Commandery Road may be a good location, as it is close to a significant residential development with few private driveways, so although it is close to King Street, may be worth investing in.

Copenhagen Street is a popular car park very close to the retail centre of the city. A number of fast or rapid chargers may be appropriate in this location.

Cornmarket is a high turnover car park with the majority of users staying for around one hour to one hour and half. It is also used for events. It is a narrow car park with no soft surfaces and it is thought installation of charging infrastructure could be expensive and difficult. Due to the nature of stays on this car park, and the considerations of the practicalities of installation, this is not a priority.

Clare Street is an under-utilised car park, on a major city centre road. It is therefore a potential location for another rapid or even ultra-rapid charging hub in the future. This could be used to serve the needs of residents and businesses (particularly taxis). Funding would be required for this to be realised.

Other car parks and land

Aside from the pay and display car parks, Worcester City Council owns around 27 areas of land across the city where there is current parking provision, with the potential to install EV charge points at these locations in the future.

These areas include three leisure centres and eleven community centres. Some are also subject to flooding, such as the Waterworks Road car park near Pitchcroft Racecourse and Gheluvelt Park.

A business case will be prepared to understand the case for installation of destination chargepoints at Perdiswell Leisure Centre to service visitors to the swimming pool, other facilities and open space.

Assessment of other areas of land not currently being used for parking provision will take place to identify any further opportunities for citing chargepoints close to residents likely to be unable to install their own, private chargepoint.

New car clubs are expected to start later in 2023 based in Tallow Hill car park and in at least one community centre in the city. These vehicles will be petrol vehicles but the Government's decision to include car club charging infrastructure within the On-Street Residential Charging Scheme means this is a potential opportunity for the Council in the future⁴¹.

Non-Council owned land

The Council gives weight as part of its decision making on planning to the installation of ULEV charging points through the County Council's '[Streetscape Design Guide](#)'. It recommends application of this guidance to potential applicants and their planning agents.

⁴¹ [On-Street Residential Chargepoint Scheme guidance for local authorities - GOV.UK \(www.gov.uk\)](#)

The [South Worcestershire Development Plan](#) is currently being revised, following public consultation. Once adopted it will establish clear requirements in local planning policy - such as the installation of a minimum number of EV charge points to a required specification, depending on the overall size, in all future developments in the area.

Not compliance with the policy could be grounds for planning application refusal.

Communication and Engagement

Communications

The Council will support local residents and businesses with the switch to EVs through the provision of information and signposting to other sources of information.

The Council will, through the Economic Development Team and other partners such as the Worcester BID, Chamber of Commerce and Worcestershire Business Central, seek to support local businesses with fleets to transition to EVs or other zero emission vehicles.

The Council will use established communication methods with residents and businesses to encourage the transition to electric vehicles. This includes methods such as the newsletter for businesses sent by the economic development service, which regularly includes information for businesses on becoming more sustainable. City Life, the Council's magazine for residents, can be utilised to promote the availability of chargers and improve confidence in the infrastructure for those considering a switch. Social media and other channels will be used with case studies developed, particularly to highlight local businesses with electric vehicles in their fleet.

Consultation

The Council recognises the benefit of engagement with residents and others to ensure a charging network which is right for the city and meets the needs of local people.

The Council plans to carry out an engagement and consultation exercise with residents and businesses, to identify current barriers amongst the local population to switching to electric vehicles.

In addition to this, a form on the Council's website will be added to allow resident's public charging needs to be recorded, helping to inform future infrastructure investment and possible prioritisation of areas.

Partnership Working and Stakeholder engagement

It is clear that creating and sustaining a comprehensive charging network which meets the needs of all local users is only something that will happen in partnership. Worcestershire County Council are a key stakeholder, along with the owners of other major car parks in Worcester such as the NCP car park and the Crowngate car park. Local housing associations have a key role to play to ensure charging facilities are available for those living in their properties, as well as their workforces. The Council will therefore seek to work closely with them and advise as required. The Council will seek to engage with other existing and potential providers of EV charging facilities to encourage additional provision, public access and accessibility.

Leading the way

The Council is showing local leadership on the use of electric vehicles, having switched to electric vans for the City Services operational teams some years ago. These vehicles utilize charging infrastructure at Warndon Depot, The Guildhall and St Martin's Gate car park.

Whilst a recent trial disappointingly showed that the range on electric refuse collection vehicles is not yet sufficient for them to be procured in the immediate future, it is expected that technological advances over the next few years will enable this to happen in the medium term. The provision of further electric charging infrastructure at the depot will be assessed as part of this project.

The Council benefited from a free fleet assessment from the Energy Saving Trust in 2022 and would recommend this service to local businesses and other public sector organisations. The review identified the potential for transitioning to electric vehicles and factors to consider when evaluating this.

Strategy governance and review

This strategy will be governed as part of the Environmental Sustainability Strategy, which is overseen by the Environment Committee supported by a member steering group.

This strategy will be refreshed in 2025/26, recognising the fast-moving nature of this area, growth of EVs and changing technology. The strategy may be reviewed earlier if technology or local requirements require this. For example, if an EV strategy for the County is published by Worcestershire County Council which has implications for this strategy.

The need to broaden the scope to other ultra low emission vehicles will be considered at the time the strategy is refreshed, as required.

Delivery Plan

Task	Estimated cost	Proposed timeframe	Responsibility
Enable residents to express which areas of the city they would like to see charging infrastructure installed through a form on the council's website.	Officer time only	Summer 2023	Corporate Policy & Strategy
Utilise data analytics and GIS to map residents expressions of interest to identify high frequency areas so that such requests can be weighed alongside other relevant datasets and factors as part of any future investment planning.	Officer time only	Ongoing	Sustainability team with GIS officer and property
Monitor the usage of the chargepoints at Tallow Hill and King Street against the predicted usage in the business case	Officer time only	Ongoing from installation – summer/autumn 2023	Sustainability team
Review opportunities for further applications to the On Street Residential Charging Scheme and the business case for doing so, minimising revenue costs to the Council	Officer time only	Ongoing 2023/24	Sustainability team
Establish an officer business management group with quarterly reporting on costs and revenue from the installed chargers at SMG, Tallow Hill and King Street	Officer time only	Establish by end of June 2023	Sustainability team leader to lead group
Use established communication methods with residents and businesses to encourage the transition to electric vehicles.	Officer time, potential limited marketing costs	Ongoing through 2023/24	Sustainability team with Comms team
Engage with Midlands Connect and Worcestershire County Council on the LEVI funding from central Government to ensure maximum opportunity for Worcester is realised	Officer time only	Ongoing through 2023	Sustainability team

Undertake local research and consultation regarding the barriers to transitioning to electric vehicles	Officer time only	Summer/autumn 2023	Sustainability team
Provide information to local residents and visitors on charging facilities in the city	Officer time only	Ongoing through 2023/24	Sustainability team
Engage with local and national forums and discussions to keep up to date with best practice and knowledge	Officer time only	Ongoing through 2023/24	Sustainability team

Appendix 1 – Full list of existing chargepoints for public use, according to Zap-Map and local knowledge

This list does not include chargepoints listed on Zap-Map which belong to residents who are happy for individuals to arrange to charge on their own charger. The list also does not include chargers at dealerships as these are restricted access. Local knowledge has been used to leave out chargers which are known to be out of action, such as those at Crowngate car park.

Area	Site name	Postcode	Type of site	Number of chargers
WR1	St Martin's Gate Car Park, City Wall Road,	WR1 2BS	Public car park	12 chargers
WR2	University of Worcester Riverside campus	WR2 5JN	Venue and public car park	52 chargers
	University of Worcester St John's Campus	WR2 6AJ	Staff and student car park with access for public	2 chargers
WR3	Blackpole Inn	WR3 8SQ	Pub	2 chargers
	Lidl Droitwich Road	WR3 7JX	Supermarket	1 charger
WR4	MFG Nunnery Park	WR4 0SX	Pub/supermarket site	1 charger
	Warndon Community Centre	WR4 9NS	Community centre	2 chargers
WR5	The Swan at Whittington	WR5 2RL	Pub	1 charger
	Oak Apple Pub	WR5 2NL	Pub	1 charger
	Tesco St Peter's	WR5 3SW	Supermarket	4 chargers