Leicester City Council

Zero Emission Vehicle Strategy

October 2025

Contents

Introduction

Background

Domestic transport is the single largest contributor to UK greenhouse gas emissions, accounting for 29% of the total emissions in 2023. By far the biggest contributor to this is road transport, with passenger cars alone producing 54% of all transport emissions and 16% of the UKs total annual emissions – more than industry or agriculture.

The development of more efficient petrol and diesel engines has made a difference to individual vehicle emissions, but these have mostly been offset by the substantial increase in annual vehicle mileage – from 256 billion in 1993 to 336 billion in 2024. Locally, vehicle miles travelled in Leicester increased from around 784 million in 1993 to 1.02 billion in 2024.

Alongside the wider climate implications, this has an adverse impact on local air quality – transport is a primary contributor to poor air quality, and for Leicester two thirds of NO2 emissions can be linked directly to motor vehicle traffic.

There remains, therefore, a very clear need and opportunity to decarbonise the transport sector, and successive governments have recognised the importance of Zero Emission Vehicles (ZEV) and alternative fuels in the future transport mix. This has resulted in the UK adopting a ZEV mandate, which requires that:

By 2030

No new petrol and diesel vehicles may be sold, except for hybrids or those produced by small manufacturers

By 2035

No new hybrid vehicles may be sold

All local transport and highway authorities have a role to play in supporting the ZEV transition, including via the delivery and support of infrastructure that enables people to choose and use a ZEV.

However, it must be acknowledged that a 1:1 replacement of combustion vehicles with ZEV alternatives is neither feasible nor desirable. Whilst it does lead to environmental benefits, it does not directly solve issues related to transport poverty, road safety, congestion, and the impacts on local pollution due to particulate matter – tyre and brake wear – are still present.

Leicester City Council has adopted a transport hierarchy, Figure 1, which prioritises the most effective and efficient modes of transport.

At the very top of the hierarchy is reducing the need or distance to travel: ensuring people have access to local services, and ensuring there is support for remote working or online activity.

Active and sustainable travel modes then follow – walking, wheeling, and cycling; then passenger transport; and then shared mobility such as car clubs and ride sharing. The majority of journeys should be made by these mode, and people encouraged by good infrastructure that provides reliability, safety, comfort and expediency.

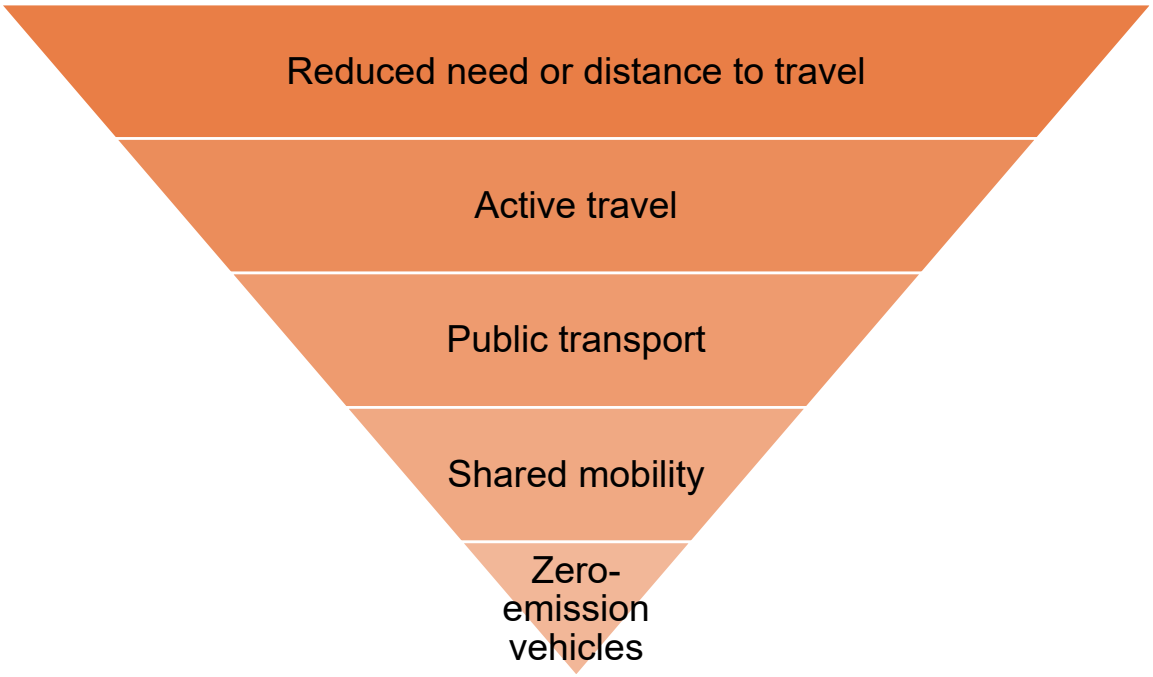

Figure 1 - Transport Hierarchy

There will, of course, still be a need for road transport – for journeys where alternatives are not feasible, or for the delivery of vital goods and services – and for these we must provide a pathway to ensure they are zero emission.

Purpose of this Document

The Leicester ZEV strategy outlines how we intend to support our residents, businesses, and visitors with the transition to a zero-emission transport system, including our roles in providing advice and information, ensuring compliance, and delivering infrastructure where it can be most beneficial.

The sector is continuing to develop at pace, and so we will retain the strategy as a living document.

The strategy is not a definitive list of actions, nor does it outline locations to deliver infrastructure. It is the framework for decisions and actions that impact the sector.

The strategy supports all forms of ZEV. Although battery electric is the most common and has the advantage of widespread public awareness, there are alternative technologies available that may suit specific use cases. It is imperative that the authority engage with the industry to understand these technologies and their route to market and adoption.

Types of Zero Emission Vehicle

Battery Electric

The majority of ZEVs in use in the UK are battery electric vehicles, and are commonly referred to as Electric Vehicles (EVs). They form the core of the government's approach to supporting ZEVs, and are central to the Electric Vehicle Strategy and Transport Decarbonisation Plan.

EVs make use of an internal battery system that can be recharged from either a dedicated charging station – which are now commonly found in supermarkets, service stations, car parks, or even on residential streets – or using domestic supply. The latter is

the most common means of charging, and can offer the user a substantial saving compared to the equivalent petrol costs per mile.

There have been substantial improvements in battery technology in recent years, and modern vehicles can now offer a range the equivalent of a petrol car – a common challenge against the vehicles is limited range, and whilst certain use cases may still impact the overall range, and there is a price premium for some longer distance models, it is now entirely feasible for an EV to possess sufficient capacity for all but the most extraordinary use cases. Charging times have reduced alongside battery capacity, although this is often limited by the age of the vehicle and the charging socket. There is legacy compatibility for most, but only the very latest models of each will provide the fastest charging speeds.

Battery electric vehicles are the primary mode the city council intends to support. The national charging network has grown rapidly, the city's network is expanding in both public and private sites, and there is the potential to support hybrid vehicles using the same network.

Notably, the city has a growing number of electric buses that operate through this technology. Well over half the buses in service are electric, and further routes are due to be electrified over the next 2-3 years.

Many van or commercial vehicle manufacturers now offer a battery electric drivetrain – both for light goods vehicles and, more recently, for heavy goods vehicles or 7.5T platforms. The requirements of these vehicles from a fleet management perspective, and the additional purchase cost, has so far continued to be a barrier to widespread business adoption.

Hybrid

A hybrid vehicle is, simply, a vehicle that makes use of more than one drive system. The most common is for the vehicle to have a small battery and motor that runs alongside a regular combustion engine. The platform determines how this operates, but they usually allow for small trips to be undertaken with pure electric power and then operate as a range extender or acceleration booster on longer trips.

Some hybrids do require external charging (a plug-in hybrid electric vehicle – PHEV), using the same infrastructure as is provided for battery electric vehicles, whilst others are able to recharge in use from their engine or braking systems.

Given the above, no specific infrastructure is required to support uptake of hybrid vehicles. The delivery of EV charging facilities will, by default, provide an opportunity for users of a PHEV to charge and there is no immediate prospect of the supply of petrol or diesel being reduced at either a local or national level.

Hydrogen

A Fuel Cell Electric Vehicle (FCEV) – more commonly known as a hydrogen powered vehicle – uses an onboard supply of compressed hydrogen to provide electricity. Though much quicker to refuel than an EV is to recharge, they do depend on access to hydrogen refuelling facilities. Not only are these rare, but they require specialised infrastructure whilst – broadly speaking – an EV charger requires only there be a local electricity supply with sufficient overhead. The process of generating hydrogen, and transporting to the necessary fuelling stations, also introduces inefficiencies and increases cost.

Given the above, it is not surprising that there is a very limited number of commercial FCEVs available for purchase; however there continues to be interest and investment in the

technology as a potential solution for heavy vehicles and freight. Numerous FCEV buses, and HGV drivetrains are available and in service today as either part of a mixed fleet or demonstrators. Equally, hydrogen powered trains and ships have been trialled as alternatives to diesel.

We will not actively promote hydrogen, nor will the city council invest in delivering any local hydrogen infrastructure, but we will engage with businesses and industry, and officers will ensure they are abreast of the sector and developments therein.

The Leicester Market

As of June 2024, only 2% of cars registered in Leicester were pure electric – a total of 2,954 vehicles, compared to 5,340 plug-in hybrids, 90,755 petrol vehicles, and 51,133 diesels.

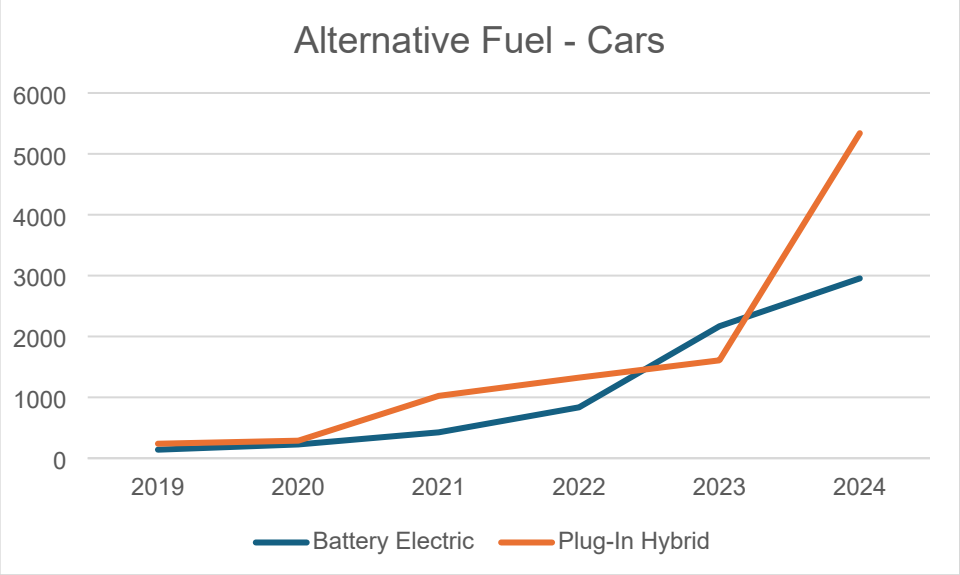

Figure 2 - Vehicle registrations by fuel type

Though the market is small, as shown in Figure 2 there has been considerable growth, and it should also be noted that this dataset is now around 12 months behind and does not include Q1 2025. Historically, most new registrations take place in Q1, and it is likely the actual number is higher.

In comparison, there are currently 202 public chargers across the Leicester network – which equates to 41 vehicles per charger. This is more than may be found in Oxford, Wigan, or Derby but less than Nottingham, Plymouth, or Coventry.

We have no accurate way of calculating how many private charging facilities are available or utilised, but research has consistently shown that adopters of EVs at this point are overwhelmingly those with off-street parking so they may make use of cheaper overnight energy rates to offset the higher purchase cost.

The city council has been installing various charging options across the city with available grants over recent years, including lower powered lamp column chargers in residential neighbourhoods or Park and Ride sites; and higher-powered rapid chargers in city centre car parks and kerbside locations. As part of our delivery, we have closely monitored the uptake and usage of these charging types to understand how much latent demand can be exposed via infrastructure projects alone.

To date, we have found that though new rapid chargers and city centre options show growing and healthy usage, the uptake of residential charging has been disappointing. Our research and engagement suggested that there would be a strong demand and now, some years later, usage numbers have remained stagnant or in some cases reduced considerably.

Perceptions and Barriers

The DfT recently published the Autumn 2024 wave of the technology tracker – a survey of over 7,000 individuals on various aspects of new and emerging transport technologies. As part of the survey, respondents were asked about vehicle purchasing intentions:

- 69% of respondents who intended to purchase or lease a car or van said they would most likely choose second-hand
- 38% planned to replace with petrol
- 27% planned to replace with hybrid, but 50% identified a non plug-in hybrid as being their preferred option. As noted above, the overall benefits of these vehicles from a decarbonisation standpoint is much lower.
- Only 10% intended to purchase a pure electric vehicle.

Specific questions about electric vehicles were asked as part of the survey – though overall levels of public knowledge and awareness are high, specific responses relating to the advantages or disadvantages of electric vehicles do evidence areas of concern and where the authority must target and tailor our approach accordingly:

- 14% of respondents did not believe there was any advantage to EVs
- 71% of respondents felt that less distance could be travelled on a single charge than the equivalent tank of fuel.
- 72% of respondents felt that there were not enough charging points available
- 70% felt the purchase cost was a disadvantage.

From the above, we can infer that the growth of the second-hand market and subsequent reduction in purchase price will be a key driver in the ability to transition vehicles away from fossil fuels. It should be noted, however, that the experiences of users with older, or first generation EVs, with regards to battery life, battery health, and the cost of end-of-life care for these crucial elements has created a level of negative perceptions that persists online. Only once the newer generation of vehicles approach end of first owner/lease in greater numbers will these concerns subside.

In addition to the above, there are local factors that we consider will slow the EV uptake within Leicester, including but not limited to –

- A large volume of terraced housing stock, coupled with a high demand for kerbside parking spaces, in dense residential areas.
- A very low level of income – Leicester had the lowest level of gross disposable household income in 2021, at £14,605 compared to a UK average of £20,425. This can directly impact:
    - The continuing price premium when purchasing a new electric vehicle
    - The relative infancy of the second-hand electric vehicle market, concerns that surround older models, and the rapid pace of technological development reducing the allure and utility of older model EVs
    - The ability to access finance or lease deals

- Car ownership below the national average, with 33% of households not having access to a car or van compared to a national average of 24%

The Role of the Authority

As a unitary authority, Leicester City Council are well placed to influence the growth of ZEVs through numerous channels, and we intend to do so via specific guiding principles – engagement, communication, education, and delivery.

Our specific intentions are outlined below:

Work with businesses, freight, and industry

We will continue to work with partners across various industries on the decarbonisation of their fleets via the provision of advice and guidance. Using our existing links with business and industry, we will convene appropriate working groups for relevant sectors and encourage participants to share their knowledge and experience in the field – and will use our position in the market to ask that manufacturers, providers, and other key stakeholders attend these groups.

We will listen and respond to the comments and challenges from partners, and use our position to share and escalate these concerns – where they have national relevance – to the Department for Transport or the Office of Zero Emission Vehicles.

We will work with the city's bus operators to decarbonise their fleets via grant schemes such as the Zero Emission Bus Regional Areas (ZEBRA) grant, and in line with our commitments under the Bus Service Improvement Plan.

We will recognise the need to transition our own fleet, and share learning and experience from the council's electric vehicles with industries and partners in a robust and frank matter to grow confidence and understand risks.

Ensure compliance

We will ensure that charging points installed on the highway network are compliant with accessibility standards, and when installed they are delivered to the standards that highway improvement works should be.

We will ensure that the obligations of developers under the planning and building control regulations are followed, and that new estates have at least the minimum number of required charging options and that these are equivalent to those found on the Leicester network.

We will ensure that EV bays are enforced appropriately, to ensure that those users needing to charge can have the greatest opportunity to access a public charging facility.

We will take a zero-tolerance approach on the placement of cables or wires across the footway to charge an electric vehicle, given the risk this poses to pedestrians, and will ensure that we respond robustly when concerns are raised with us on these issues.

Provide advice and guidance to users

We will maintain a dedicated ZEV presence on the Leicester City Council website, where people can obtain information on the council's approach and the wider sector.

We will maintain a facility for people to raise issues or questions with the authority, and will use this to establish and maintain a Frequently Asked Questions document held on this website.

We will challenge misinformation, ensure that advice and information on street assets is accurate, and ensure that our communications are in a format that is accessible to all.

Understand and work to resolve barriers

We will engage with key stakeholders, including disabled access and user groups, to understand specific needs related not only to infrastructure, but the surrounding EV ecosystem from manufacture through to operation and maintenance

We will continue to engage with the sector and industry at a local and national scale, with colleagues and partners across the region and government, to ensure we understand tactics and approaches that have led to growth and how we may influence them.

We will actively monitor our EV infrastructure, and ensure that lessons are learned from sites that are performing well and that are underperforming.

Install EV infrastructure

Making use of government funding, such as the Local Electric Vehicle Infrastructure (LEVI) Fund, alongside our own funding to expand and support the expansion of infrastructure across the city, ensuring that there are multiple options available.

We will ensure that our infrastructure is accessible to all users.

We will ensure that the placement of EV infrastructure does not adversely impact other highway users – particularly pedestrians.

Infrastructure Hierarchy

Based on the research available, our own analysis, and engagement with residents, we do not believe that EV infrastructure alone is the core barrier to uptake in Leicester – it is instead the cost of purchase, compounded by the nature and perception of the second-hand market, that constrains current demand.

In addition, our experience has shown that EV usage does not increase with local residential charging availability. As it remains the case that there is still a cost premium to accessing public charging, we believe this further indicates that the principle barrier is cost.

To that end, though infrastructure delivery by the authority is a key part of our strategy, our approach is to target infrastructure investment where it can serve the greatest number of users with the highest amount of turnover, to maximise throughput of vehicles into the local market.

Our infrastructure hierarchy outlines not only the level of utility for each charging option, but where we feel suitable investment can enable the most benefit for the most number of users.

Infrastructure requirements and considerations

Regardless of location or type of charger, there are certain aspects that we will consider universal and must be true on all publicly accessible chargers. As a rule, compliance with PAS 1899 will achieve our minimum expectations

Accessibility

All public chargers must consider users with specific access needs, and ensure they are appropriately designed, easy to understand and use, and located in easily accessible areas and locations. We will engage with specific disability access groups as part of ongoing procurement to ensure that any supply we partner with for chargers installed on our behalf are fully compliant and accessible.

Capacity and turnover

The installation of charging points must consider the impacts on existing users, including what capacity is lost on the highway, and the utility of the site for high turnover charging operations to ensure minimum idle time.

Where there is a mismatch between demand for EV charging and availability of local parking, there is more likely to be noncompliance and obstruction to the charging site. Equally, sites where there is a high demand and little provision can create issues with traffic circulation and loss of local parking capacity.

Enforcement

All sites must have the required infrastructure to permit enforcement – including signage, Traffic Regulation Orders, and road markings.

Ease of use

Charging infrastructure should be easy to use, self-explanatory, uncomplicated, and offer limited opportunities for mistakes or inaction to lead to the user facing unexpected charges or penalties.

The charging hierarchy

The city council has developed the charging hierarchy as a means of demonstrating the utility of various charging solutions, as well as the level of priority we intend to award to each variant.

Given the relatively small size of the market at present, our priorities are to those solutions that can cater for the widest possible audience with the minimum amount of additional journey requirements. It is recognised that the city's network requires a mixture of these and potential future solutions such as battery replacement or wireless charging bays.

1 – Charging from domestic supply using off-street parking

Charging from a domestic energy supply remains the most cost-effective means of operating an EV, though is available only to those with suitable off-road parking facilities.

The city council acknowledges that this will be a deciding factor for many when considering the purchase of an EV. We retain processes for property owners to apply for a vehicle crossover (a "dropped kerb") so that they may create a hardstanding and off-road parking facility; however we recognise that this will not be suitable for all locations or property types within the city.

2 – Destination charging at key locations

Opportunity charging at existing car parks serving businesses such as supermarkets, or at retail parks and city centre car parks, allows for users to charge their vehicles during idle times whilst going about their day. Not only does this reduce the need for specialist journeys to charging infrastructure, it also provides a service to a userbase across the city and wider region.

We will continue to facilitate the installation of chargers of this type in car parks and facilities that we operate or own, whilst also working with the private sector to encourage delivery within their own assets. Additionally, we will continue to work with the Distribution Network Operator – the National Grid – to ensure there is sufficient network capacity for charging facilities in the locations they are needed and provide a benefit.

3 – On street charging in residential areas

Our existing residential charging facilities have shown a disappointing level of usage, despite installation in locations where there were indications of local demand and support.

We accept that the future network must include items of this nature, however we will ensure these are delivered where there is clear demand given the impact on overall parking capacity, and the cost of installing and maintaining underutilised charging assets.

4– Charging hubs

A charging hub is a dedicated location offering charging solutions to a wider area – distinct from a destination charger as the primary purpose of travel is to access EV charging.

The deployment of such hubs within the city is difficult, given the lack of available land, and they can lead to additional trips being generated – whilst also providing a poorer service than destination charging options or increasing the volume of residential supply.

5 – Charging from domestic supply without off-street parking

We are aware of a growing number of cross-pavement solutions coming to market to provide options for those residents that do not have access to off street parking. We have not, yet, approved any of these for usage within the city.

We continue to have reservations over these products, for a number of reasons:

- It is not possible to guarantee the availability of parking outside a specific property – in many Leicester streets parking demand already exceeds supply – and these solutions may create disputes with other residents.
- In many Leicester streets, the available carriageway width is too narrow to permit parking on either side of the street and we will not permit cables to be run across the carriageway; this would exclude a considerable number of residents.
- The solutions on the market are not fully accessible, and are not fully usable by those with limited mobility.
- As a non-standard piece of equipment, there are additional maintenance costs that may fall to the authority or require we take on additional liabilities.
- The ownership, deployment, and access models currently available are highly variable and it remains to be seen what is most effective for the authority and users.

We are continuing to monitor the sector and those authorities that have enabled solutions either fully or on a trial basis so that we may understand how our concerns have been addressed and resolved.

We will keep this provision under review.

List of actions

Ensure EVs are treated appropriately within the city's transport hierarchy

Encourage journeys be switched to walking/wheeling/cycling, passenger transport, and then remaining vehicle journeys support the transition to EV.

Ensure that new developments have appropriate EV charging provision, in relevant locations, and are future proofed as much as possible.

Recognise that not every EV has four wheels – support electric mopeds, motorcycles, and e-bikes with appropriate information, parking, and charging facilities where possible.

Provide the right infrastructure, in the right location

Engage with providers and the public to promote the message that infrastructure should be usable by all

Provide on street charging in a way that is appropriate to the environment, accessible, and effective.

Respond to public concerns and feedback over charging access, including locating chargers where they will be most effective in supporting EV users.

Continue to consider options to allow for cross pavement charging

Support the transition of combustion vehicles to EVs

Work with electric suppliers to ensure those that can and want to charge from home, have grid capacity to do so.

Provide information for citizens and visitors to Leicester on the EV industry and market.

Encourage events, open days, and trials within Leicester to ensure people have access to EVs before making the purchase.

Consider proposals for car clubs and car sharing that is EV focused and available to city residents.

Encourage businesses to transition to EVs throughout their supply chain

Support the ongoing rollout of electric buses

Support integrated charging systems and site sharing to maximise charging efficiencies and reduce cost.

Establish an EV forum as a subbranch of the workplace travel forum and the Leicester Business forum.

Work with partners and industry to understand and forecast trends and changes

Work with the Distribution Network Operator to understand capacity issues within Leicester, and work to resolve to facilitate future expansion.

Continue to engage with neighbouring authorities, regional authorities, and key stakeholders – including businesses, industry groups, and accessibility groups – to ensure the strategy reflects the needs of the city and is communicated consistently.

Maximise opportunities to secure funding from government or other sources to deliver on the strategy