Urban Foresight

Appendix 1

Oxford City Council

Electric Vehicle Strategy

DRAFT

V3.0 - JUNE 2022

Urban Foresight were commissioned by Oxford City Council to compile this Strategy using feedback from a wide range of internal and external sources.

Executive Summary

The Oxford City Electric Vehicle Strategy builds on the excellent reputation the city and wider region has developed over the years in leading the transition to zero emission vehicles.

The strategy supports the Government's aims set out in the recent Electric Vehicle Infrastructure Strategy, "Taking Charge," where an obligation is placed on local authorities to take a leading role in the transition to electric vehicles.

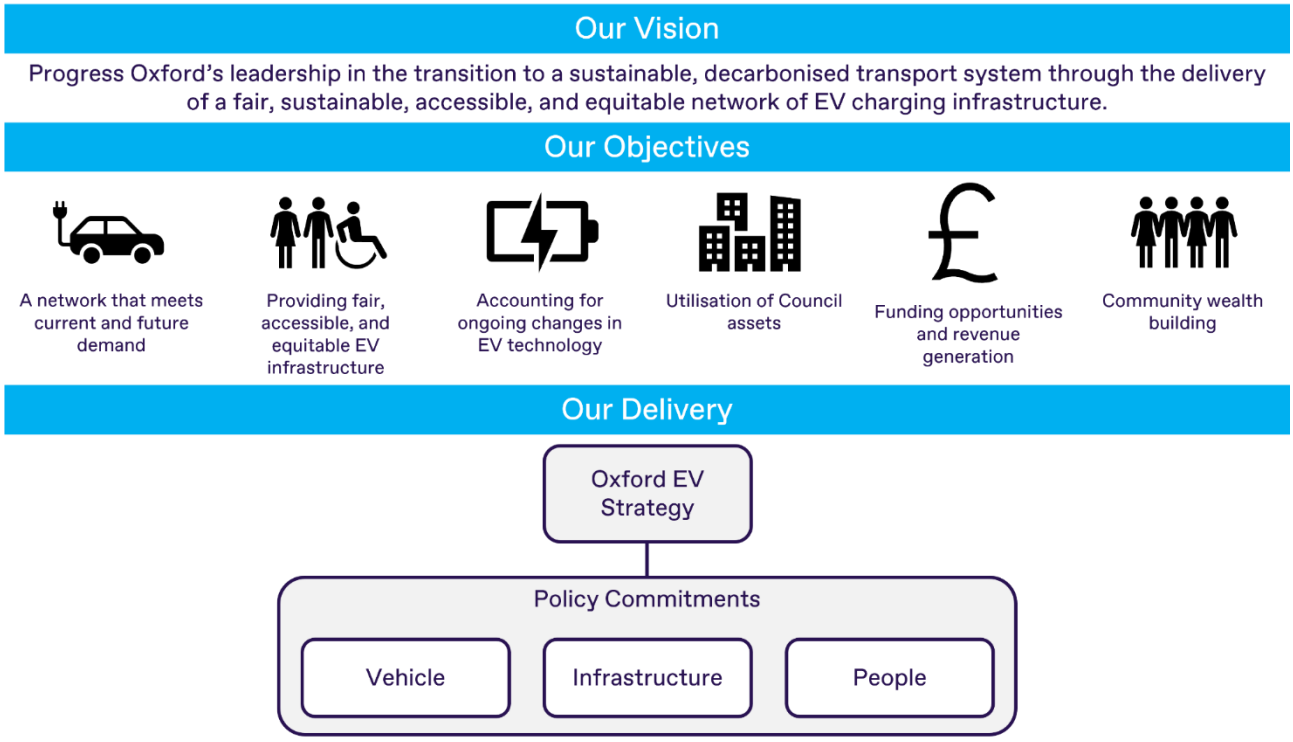
Transport is the second largest contributor to Oxford's emissions, accounting for 171 ktCO2e (2018), with private cars being the main source of emissions. Transportation is responsible for 17% of total emissions, with on-road transport making up 16% of carbon emissions and is therefore a significant area to be addressed in order to meet these targets.

While Oxford City's EV uptake is ahead of the UK average, there is still a way to go to meet the targets of net zero carbon emissions by 2040, as declared in the Zero Carbon Oxford Partnership (ZCOP) Roadmap and Action Plan.

This strategy sets out clear targets for the city of Oxford to meet by 2026, 2030 and 2040, in terms of infrastructure deployment and EV uptake, which measure the city's fulfilment of its net zero ambitions.

The key policies and actions in this strategy have been split into three key categories: vehicles, infrastructure, and people—to provide a comprehensive suite of actions that will build upon both national and regional policies.

This strategy sets out a clear vision for the city, along with six key objectives, which will help ensure that Oxford is able to take full advantage of the environmental, social, and financial benefits that the transition to electric vehicles offers.



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Oxford EV Infrastructure Strategy (OxEVIS)

In January 2019, Oxford City Council declared a Climate Emergency, recognising the reduction of Oxford's carbon emissions as key to more sustainable living in the city.

This strategy sets out how the city will support the transition of car and van-dependent journeys towards zero emissions, as part of a wider foundational shift to more active and sustainable transport.

The policies and actions set out in this strategy will help Oxford take a proactive approach to supporting the uptake of zero emission transport options, meeting the obligations identified in the government's strategy, while building on the work undertaken in the region and deliver for the people who live, work, and visit the city.

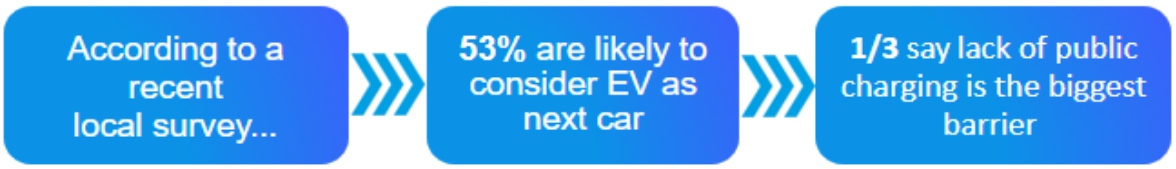
The vision for the strategy is to:

"Progress Oxford's leadership in the transition to a sustainable, decarbonised transport system through the delivery of a fair, sustainable, accessible and equitable network of EV charging infrastructure."

This will be achieved by tackling the key questions below:

- What is the Council's role in the future provision of charging infrastructure?
- How to ensure appropriate provision of numbers and types of chargers now and in future years?
- How can we ensure fair and equitable EV infrastructure that is equally accessible for all?
- How can we ensure best outcomes in regard to the rapid and ongoing changes in technology?
- How can Oxford City make best use of its assets to support infrastructure deployment?
- How can Oxford attract its fair share of funding and private investment that may lead to future revenue streams?
- How can we use EV infrastructure to promote community wealth-building? [1]

The transition to EVs is still relatively new and Oxford City Council recognises that there are several major obstacles to overcome.



1 Oxford City Council (7.2021) Oxford City Council to develop electric vehicle strategy for Oxford

In this strategy, the term 'EV' is used to refer to all 'plug-in' vehicles, including:		
Battery Electric Vehicles (BEVs)	Plug-in Hybrid Electric Vehicles (PHEVs)	Extended Range Electric Vehicles (REEVs)

While playing an important role in emissions reduction, the Council recognises that Electric Vehicles are not a panacea. Everyone has the right to move anywhere, anytime, yet traffic is an issue in the city and the Council is committed to schemes to cut congestion, including Connecting Oxford and policies for car free developments in its Local Plan 2036.

The private car has historically enjoyed a near-monopoly of the transportation network. The Council is committed to bringing about a balanced road network which is open, safe, and accessible to all road users, so that all citizens can move around their own city in their own preferred modality as easily as possible. This will require the redistribution of Oxford's road space to users of other vehicle types than the private car, which can slow the growth in predicted car use and enable infrastructure to increase the numbers of citizens getting around by cycling, walking, and bus.

As such, the Council seeks a reduction of private car ownership and use wherever feasible, and this extends to electric vehicles as well as fossil fuel vehicles.

This EV strategy seeks to identify an optimal way for ensuring those who need to drive cars – where cycling, walking or the use of buses is not practicable – are supported to do so in zero emitting vehicles.

The full transition to electric vehicles (EVs), alongside a significant reduction in car ownership and private car use, and a greater shift to active and bus travel, will be among some of the actions to achieve Oxford's zero carbon transportation and air quality targets. We refer to this shift from personal car ownership to shared car use and public and active travel in the document as "travel hierarchy".

Of the 52,000 vehicles in Oxford today, just under 900 are EVs (less than 2%). In order to meet net zero by 2040, these numbers must rise sharply over the next few years – ZCOP identifies that to meet Oxford's Zero Carbon ambitions, 16,000 fossil fuel cars need to be replaced by EVs in the next four years alone.

In a recent survey[2], 53% of respondents in Oxford stated that they expect to switch to an EV in the coming 6-24 months. EV infrastructure needs to grow quickly to meet this demand.

The table below sets out 3 trajectories for EV uptake in the city. These figures have been calculated using nationally recognised formulas to predict the city's future car and light commercial vehicle (LCV) EV charging needs[3]. To achieve the city's zero carbon targets we would need to achieve the ZCOP uptake trajectory.

[2] Survey gained 510 responses and was open to anyone who lives, works or visits the City. Survey open between April - May 2022

[3] Figures based on formulae and ratios from the Intergovernmental Panel on Climate Change (IPCC) is the United Nations body for assessing the science related to climate change and the International Council on Clean Transportation (ICCT) is an independent non-profit organization to provide research scientific analysis to environmental regulators.

TRAJECTORY	Definition	2026	2030	2040
		% EV's in Oxford per total number of cars and vans		
MEDIUM UPTAKE	Based on Oxford's current uptake (before ZEZ implementation)	24%	50%	100%
HIGH UPTAKE	Based on another city which has a highre number of EV chargers currently.	29%	61%	100%
ZCOP TARGET		36%	80%	100%

However, it is recognised that there are many factors that will dictate the actual rate of EV uptake. Therefore, the Strategy recommends that we align targets for EV infrastructure deployment by annually checking EV adoption rates for the city. The purpose of the strategy is to enable EV uptake in an agile way, not to constrain it, while avoiding oversupply of infrastructure that is not used.

National and Regional Policy Context

The growth of EVs in Oxford requires an integrated policy approach. This principle of integrated policymaking, set out in both Oxford's Low Emission Strategy (2013-2020) and Air Quality Action Plan (2021-2025), will generate maximum benefit to the step-change EVs offer.

National Policy

The impetus for EV adoption is well-established within the national policy framework. The UK Government is committed to a transition away from internal combustion engines (ICE) and have a legally binding target for all new cars and vans to be effectively zero emission by 2035.

The most recent development in the UK Government's planning is the Electric Vehicle Infrastructure Strategy, "Taking Charge."[4] Released in March 2022, the strategy outlines the vision for charging infrastructure and the fundamental role local authorities can/should take in creating a successful rollout.

It estimates 450,000-700,000 additional charge points will be needed nationally by 2040. It also clearly defined the strategic role it wants Local Authorities (LA's) to take in the transition to electric vehicles, with Transport and District Authorities working together. It recognises that whilst commercial companies will provide charging, local authorities are best placed to ensure that infrastructure meets the needs of the people they serve, addressing fair and equitable distribution, reducing risks of poorly located and/or insufficiently maintained infrastructure

Additional roles and objectives identified for local authorities are as follows:

- Implementation of charge points should be designed with accessibility in mind, for use by residents, businesses, and visitors alike.
- In-house efficiency should be ensured through all aspects, such as grant permissions, so that they are easy and user friendly.
- Identification and implementation of clear ownership and resourcing of the planning and delivery of EV charging infrastructure rollout.

Along with these expectations for local authorities and vision for the network, the strategy also announces funding which supports councils' in resourcing the transition.

Regional Policy

Oxfordshire County Council has publicly committed to planning for electric vehicles. The Oxfordshire Electric Vehicle Infrastructure Strategy (OEVIS)[5] supports all 6 of the county's councils in the move towards net-zero carbon transport through the creation of 17 EV-related policies and 55 actions. The policy statements are included in Appendix I.

The schedule of projects outlined in OEVIS is set to bring the installation of up to 432 EV charge points across the region by June 2022, through both private and public partnerships.

Ongoing co-commitments between Oxford City Council and Oxfordshire County Council are essential to the continuous development of comprehensive regional change in travel habits,

4 OZEV (3.2022) Taking charge: the electric vehicle infrastructure strategy

5 Oxfordshire County Council (03.2021) Oxfordshire Electric Vehicle Infrastructure Strategy

and partnership working with the Highways Authority is a pre-requisite for Government funding. It will also enhance the collective opportunities for future projects.

OxEVIS is structured to complement and realise national as well as local transport and planning policies, including the Oxfordshire County Council Oxfordshire Electric Vehicle Infrastructure Strategy (OEVIS) published 2021 and the Government's recent Electric Vehicle Infrastructure Strategy 'Taking Charge' published in March 2022.

In particular, it will implement the hierarchy (implicit in both OEVIS and 'Taking Charge') of EV charging infrastructure installations that seek to keep pavements accessible and minimise negative impacts on active transport options, prioritising off-street charging hubs and safe, licensed pavement crossing solutions over conventional on-street EV chargers (where feasible). This strategy commits Oxford City Council to adopting OEVIS in full.

Local Context

Home to a third of Oxfordshire County's jobs and prominent research and education institutions, the city of Oxford is well-situated to continue to lead the way in the adoption of electric vehicles.

Alongside declaring a climate emergency, in the fourth Carbon Management Plan, "Zero Carbon Plan 2030", Oxford City Council has declared that by 2030, Council activities will no longer contribute to a worsening climate crisis, with annual carbon emissions reducing to zero.

This is further enhanced by the Zero Carbon Oxford Partnership (ZCOP) Roadmap and Action Plan, launched in February 2021, which sets a target of net zero carbon emissions for the city of Oxford by 2040, if not earlier.

Recent data for Oxford[6] shows that:

To deliver these ambitious targets and to ensure that the people who live, work, and visit Oxford have access to attractive carbon-neutral sustainable transport, a reduction of transport-related emissions of 88% is required.[7]

Oxford City Council

The delivery of Oxford's EV Strategy fits well with the key council priorities to:[8]

- Promote the uptake of electric vehicles by working with partners to install electric vehicle recharging infrastructure.
- Promote the development of low and zero emission car club schemes in the city.

6 Oxford City Council (1.2020) A Journey to Zero
7 Oxford City Council (7.2021) Roadmap outlines Oxford's journey to net zero carbon emissions by 2040
8 Oxford City Council Electric Vehicles - Overview

- Investigate the potential to offer preferential parking arrangements for low emission vehicles.
- Develop low emission and zero emission vehicles in Oxford City Council's own fleet, including the development of an electric vehicle car-pool for the Council

Oxford's Pathway to Net Zero

In delivering an EV strategy for the city, we should acknowledge the significant work already underway in Oxford and Oxfordshire more broadly. A number of innovative mobility projects are helping establish the region as a leader in sustainable transport. These include:

Oxford Zero Emission Zone

To improve air quality, cut carbon emissions, and move towards zero emissions travel in the city, Oxfordshire County Council and Oxford City Council have implemented a Zero Emission Zone (ZEZ) pilot scheme in Oxford, started on the 28 February 2022. Learnings from public engagement and consultation during the pilot scheme will inform the expansion of the ZEZ, with the full city centre expected to be included by 2024.[9]

Under the current approach, covering ten key streets, private cars that are not zero emission (i.e. emit 0g/km CO_2) are proposed to be banned from parking and loading. The councils are also working with bus operators to update their fleets to zero emission vehicles. Oxford plans to engage in knowledge-sharing exercises with other city and regional councils to continue the growth of the ZEZ movement across the country.

Go Ultra Low Oxford

Go Ultra Low Oxford (GULO) provides on-street electric car charging solutions for residents who are considering buying an electric vehicle or own an electric vehicle and need access to electric charging points but do not have a driveway.

With installations beginning in 2017, the project has trialled 6 charging technologies to best provide for residential usage.[10]

In collaboration with Oxford Direct Services and Oxfordshire County Council, the project has three key goals:

- **Cleaner**: Reduce air pollution by making it easier for people to drive electric vehicles.
- **Safer**: Local people will have a safe way of charging electric cars without creating trip hazards by leaving wires across pavements
- **For everyone:** If you choose to drive electric in the future and don't have a driveway, GULO chargers could help you

With an estimated 46% of Oxford city properties having no access to off-street parking and unable to install a home charger, GULO's innovative GUL-e project, provides a channel for charging cables to extend from homes to the roadside, without creating additional street clutter.

Energy Superhub Oxford

Energy Superhub Oxford (ESO) is a £41 million project to trial the world's largest hybrid battery technology in the city, to support rapid and ultra-rapid EV charging on Oxford's strategic road network, as well as its low-carbon heat network.

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9 LocalGov (2.2022) Zero Emission Zone to be extended across Oxford city centre

10 Go Ultra Low Oxford (2022) The Project

The EV 'superhub' at the Redbridge Park and Ride site will use new technology helping to minimise the impact of large-scale charging on the grid, with battery technology optimising time-of-day charging. The project aim is to save 10,000 tonnes of CO_2 per year by 2021, increasing to 25,000 tonnes by 2032.[11]

EVs in Context

Oxford City Council's approach to planning for EVs is focused on understanding the scale of demand in Oxford, and where support is needed to enable a fair and equitable transition to cleaner vehicles.

The mapping of Oxford's EV charging landscape requires engagement activities with many stakeholders to understand the best strategic sites for installation of infrastructure and to ensure that the needs of the end user are placed at the heart of the transition.

EVs as Part of the Road Transport Ecosystem

While a fully net zero transport system requires decarbonisation of all vehicles, for the purposes of this strategy, the focus is on cars and light goods vehicles (LGVs), which are most likely to use public infrastructure.

Analysis of Greenhouse Gas (GHG) emissions by vehicle type shows that passenger cars are a significant source of transport emissions in the UK. Road transport in Oxford, contributes to 40.47% NOx emissions.[12].

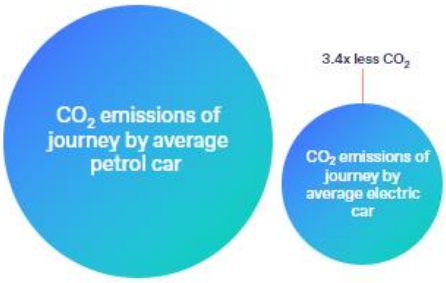


Figure 1 CO_2 emissions (per passenger) for equivalent journeys in the average petrol car versus electric car[13]

Cars account for 85% of the vehicles on the road with 65% of the fuel used, figure 2 shows that if light goods vehicles are added, this rises to 95% of the vehicles, with 82% of the fuel.[14]

11 Fleetnews (7.2020) Oxford outlines its plan to be UK's first zero-emission city

12 https://www.oxford.gov.uk/downloads/download/1185/oxford_source_apportionment_study

13 Department for Transport (5.2021) Transport and environment Statistics 2021 Annual Report

14 Department for Transport (9.2021) Road transport energy consumption at regional and local authority level, 2005-2019

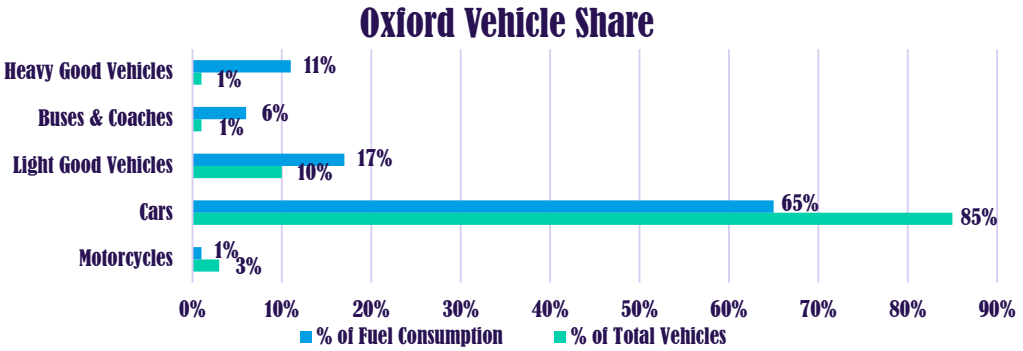


Figure 2 Oxford Vehicle Share by Fuel Consumption & Total Vehicles

In recognising cars and vans as the predominant proportion of both total vehicle numbers and fuel consumption, it is clear why this policy focuses on supporting the transition of these vehicle groups.

Targeting the largest carbon footprint is an intentional effort to create the greatest impact on Oxford's Net Zero future, catalysing transformational change across the remainder of the transport system.

> "The improvement in air quality and potential for sustainable electricity generation is a positive, but we also need to use cars less to reduce congestion and make cycling and walking safer and more pleasant."

Transition to a Sustainable Transport System

In the long-term vision, Oxford City Council's transport outlook prioritises active travel, as established in Policy M1: Prioritising walking, cycling, and public transport from the Local Plan 2036.[15]

Opportunities for successful active travel systems are high in Oxford because of the number of Controlled Parking Zones (CPZs), the availability of walking and cycling routes and facilities, and the excellent public transport options available.

> "We have to make the change but need help and encouragement to do it."

Oxford City Council views the widespread migration to EV ownership as a disruptive opportunity by which conventional car-dependent travel patterns can be re-evaluated.

This transition to EVs as part of the wider change in patterns could lead to additional benefits of improved journey time and traffic experience, which may play a significant role in the general quality of living in the city.

Emerging legislation, and guidance including this strategy, is paving the way towards a largely transport emissions-free city centre by 2035.

15 Oxford City Council (6.2020) Adopted Oxford Local Plan 2036

Oxford's Journey so Far

Delivering this EV strategy requires understanding of where the city is currently in terms of EV uptake and supporting infrastructure.

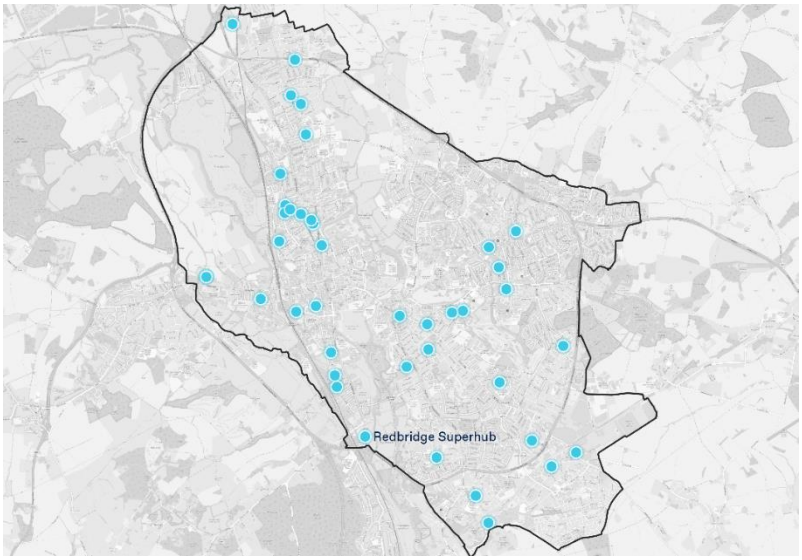
Private ownership accounts for the largest proportion of EVs in Oxford at 65%. Current data from Department of Transport (DfT) on vehicle registration,[16] shows that despite the accelerated growth in EVs, only 1.68% of the vehicle stock registered in Oxford is currently an EV.

16 Department for Transport (1.2022) Vehicle Statistics

Oxford Today

Population	Cars & Vans	Electric Vehicles
161,848	52,753	887

Charging Infrastructure



No of each type of charger

Total Rapid Posts	Total Fast Posts	Total Home Chargers
27	110	287

Solution	No. of Locations (Today)	% of 2040 Total Charger Target
Rapid Hubs	3*	33.33%
Mixed Hubs	4	3.81%
Home Charging	287	0.76%
GUL-e	27	0.84%
On-Street Residential	24	11.16%
Off-Street Car Park	5**	20.00%
Destination	10	13.70%

11.39%
Vehicles supported

*Redbridge Superhub is 3 times the size of an average rapid hub.

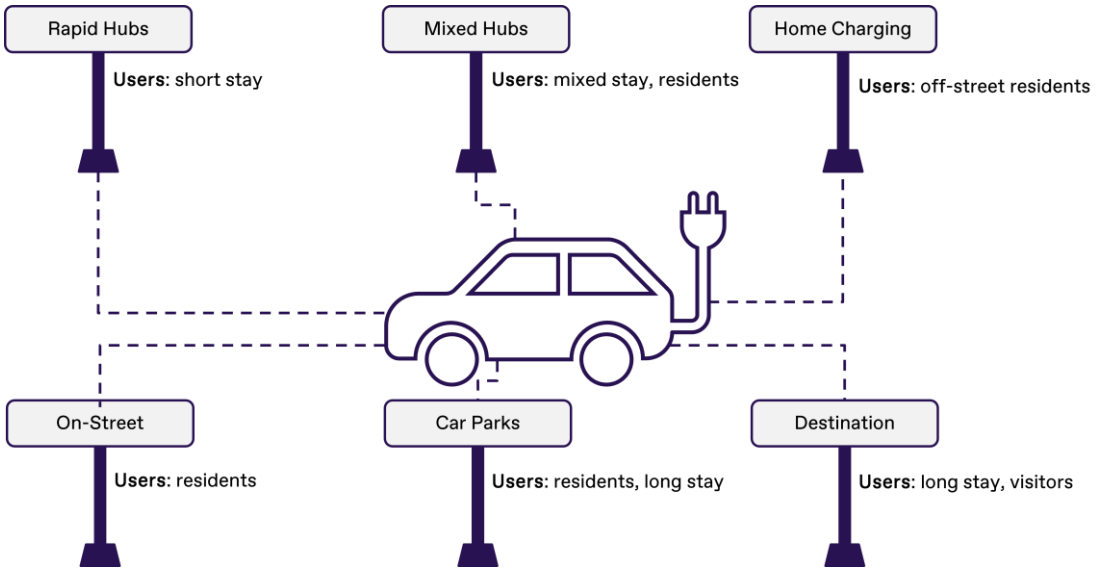
**Current car park infrastructure is suitably equipped for 5 locations

Infrastructure in Context

EVs, by the nature of how they charge, offer the opportunity to move away from the traditional petrol station model to a more convenient and customer-focused approach, in recognition that in England, cars can be parked for up to 96% of the time.[17]

To ensure that this strategy meets the needs of the end users, a variety of different charging opportunities are included.

Types of EV Infrastructure



Each of the identified types of infrastructure will have a mix of hardware delivering the charge at varying speeds. The table below provides an overview of the speed and approximate charging times associated with each charging type, as well as the current number of charge points in Oxford in 2022.

Charging Type	Speed	Charging Time	Chargers
Slow	3kW – 6kW	6 – 12 hours	32
Fast	7kW – 22kW	3 – 4 hours	71
Rapid	43kW (AC) – 50kW (DC)	30 – 40 minutes	4
Ultra-rapid	100kW – 350kW	15 – 25 minutes	22

While most charging (around 80%) is projected to be done at home, a strong network of public EV chargers is essential to the adoption of clean transport attitudes across the wider private and commercial fleet.

17 RAC Foundation (7.2021) Standing Still

Setting the Standards

To date, there are limited standards dictating the delivery of charge points, however a number of regulations are being developed which are likely to include:

- Ensuring infrastructure does not obstruct pavements or highways and is not hazardous to pedestrians
- Cables will not be permitted to trail across pavements or walkways, and instead will be accommodated safely in gullies etc.
- Charge points will be retrofitted into existing urban furniture where possible
- No exceptions will be made for EV bays (i.e., EV bays will not be introduced where traditional parking is not authorised)

All charge points' design and placements should meet Government guidance and accessibility standards. By recognising these key factors which are set to define the industry standard, Oxford City Council will ensure that the cities EV network will be **high quality, reliable, open, value for money, future-proofed and offer truly instant access.**

> "The lack of consistent, reliable charging infrastructure that is accessible to all is a major challenge. The multiplicity of operators (and therefore associated cards/apps/accounts) makes travelling in an EV in the UK a nightmare!"

Key Challenges for Oxford

Each city experiences its own unique challenges and opportunities, and Oxford is no different. The following section identifies some of the key EV-related issues in the city.

With job growth in Oxford estimated to bring 26,000 additional journeys within the city boundary by 2031, there may be approximately 13,000 more commuter car trips made each day. A 10% decrease in car travel is needed to prevent traffic levels rising.[18]

Charge Point Operators

While EV charging is still a relatively new market, it is already made up of a number of private Charge Point Operators (CPOs). The number and variety of companies offering charging services makes it difficult to establish industry-wide standardised best practice.

As detailed above, there are several standards set to come into effect in the coming years, with the Government stating that the industry needs to implement features that make it easy for users to utilise any infrastructure without the need for multiple memberships or applications.

This will include the establishment of a single payment metric allowing users to easily compare prices between operators, as well as consistent payment methods, ideally seeing contactless payments across the board. Currently, only 9% of all public charge points accept contactless.[19]

Ensuring a consistent and accessible network will make the transition significantly smoother for users of the network and will be a key focus of future infrastructure projects.

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18 Connecting Oxfordshire (2019) Oxford Transport Strategy
19 Competition & Markets Authority. (2021). Building a comprehensive and competitive EV charging sector that works for all drivers.

Lack of Off-Street Infrastructure

Many Oxford residents would like to drive an electric vehicle, but do not have or are not able to have a charger at home, most commonly due to lack of driveways and/or garages.

On-street charging infrastructure will be vital to cities such as Oxford, as learned through a number of on-street solution projects which have been tried in the city (Figure 3).

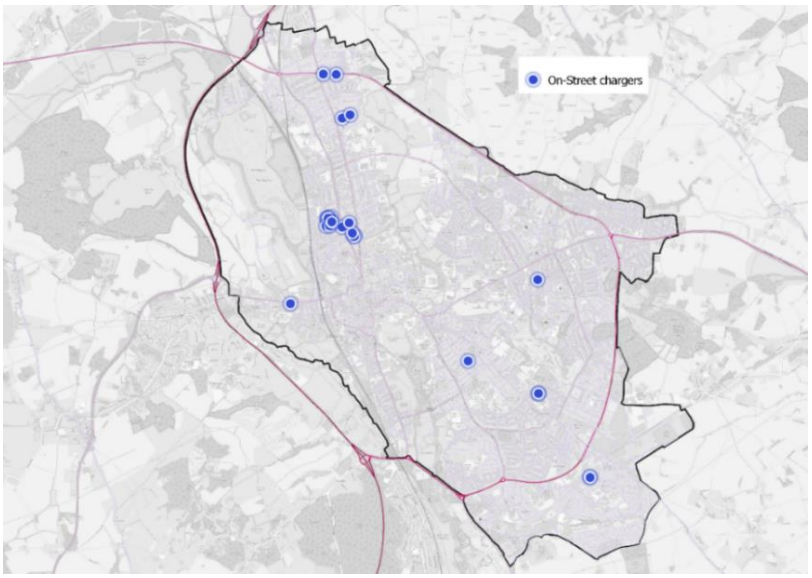


Figure 6: On-street chargers in Oxford

Alongside these charging options is a need for safe, licensed pavement crossing solutions, to reduce the risk from unsafe charging practices. The GUL-e solution, detailed earlier as part of the GULO project section, is an innovative example of this. It will enable more properties to charge at home, which would otherwise be excluded.

The GUL-e solution provides a number of advantages including;

a. a convenient, accessible solution, allowing access to the benefits and innovation of the home charging market,
b. improved targeting of public EV infrastructure funding into on-street and hubs, for those EV users that cannot rely on home charging for their primary charging
c. utilisation of existing household grid connections, reducing the need for grid reinforcement and enabling smart energy management,
d. an opportunity for ODS to work with local Councils and residents to continually improve design, as well as pursuing opportunities to make the GUL-e available across the Country and thus secure income for reinvestment into the City.

Electric Grid Management

As the number of plug-in vehicles on Oxford's roads rises, so will demand for electricity. Charging hubs, particularly rapid and ultra-rapid, consume sizable amounts of energy from the grid.

Local Energy Oxfordshire project (LEO) is a SSEN-led initiative aiming to build a smart, fair, and reliable energy network, demonstrating that smart local energy systems can benefit the region's sustainable future.

"If we had more sustainable electricity it would be a better incentive."

Smart Charging

The Government has announced an "Electric Vehicle Smart Charging Action Plan" in conjunction with Ofgem, to be published in summer 2022. This will include a consultation of the additional measures required to ensure there is a system-wide approach to transitioning to smart charging technologies.

Smart charging is a technology that takes power when demand for electricity is lower. This is typically at night or if there is a high volume of renewable energy on the grid.

Smart charging is also being integrated into Government regulation. For example, private charge points sold in the UK must be smart from June 2022.

The inclusion of local energy generation is key to Oxford City Council's whole-picture outlook for our sustainable zero-carbon future. Consideration of energy sourcing will be a requisite for EV planning going forward.

Future Projections

To forecast the future number of EVs in Oxford City, and ultimately the number of charge points required, the Committee on Climate Change forecasts[20] were utilised. These project the year-on-year growth and ultimately project the year in which all cars and vans in the UK will likely be electric.

For the purpose of this strategy, the Balanced Net Zero pathway has been used. As part of this strategy, three local EV uptake scenarios have been identified to show the impact of EV adoption from differing levels of intervention.

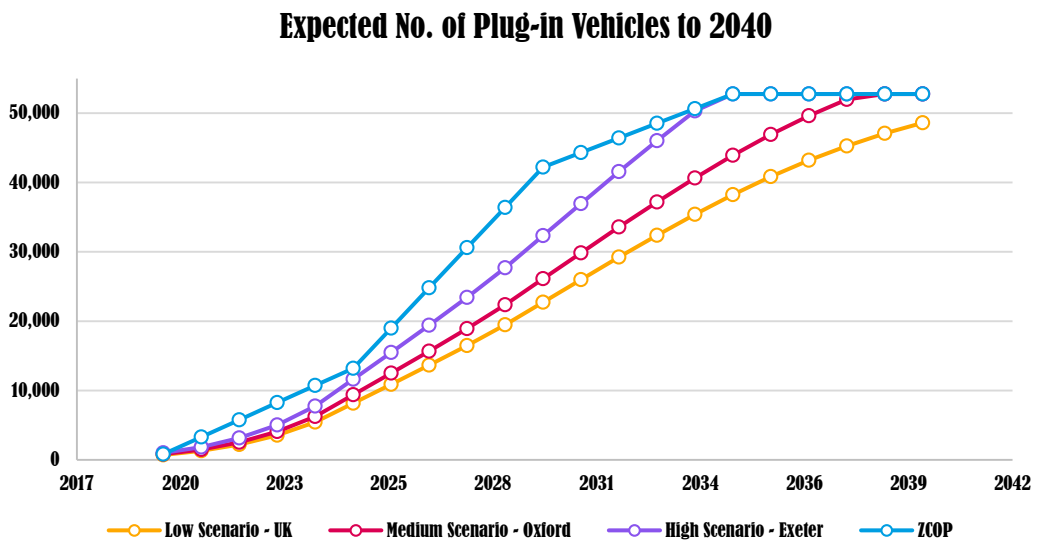


Figure 3 Expected number of plug-in vehicles to 2040

20 Committee on Climate Change (12.2020) The Sixth Carbon Budget: The UK's Path to Net Zero

The scenarios all reach the same end goal with 100% of cars and vans being electric, however the speed at which they get there varies, but all signify the need for rapid growth in the coming years.

	Medium Scenario	High Scenario	ZCOP Scenario
100% Electrification	2039	2035	2035

To meet this vehicle demand, it is vital to provide enough infrastructure of the varying types in the city. The Government's EV Infrastructure Strategy estimates that the UK requires anywhere between 300,000 to 700,000 public chargers, a range which depends on factors such as the proportion of on-street chargers required and charging behaviours.

The high-level projections for future infrastructure included in this strategy provide an excellent insight into the likely make up of infrastructure in the coming years and allows for meaningful discussions with private investors looking to deploy infrastructure at scale.

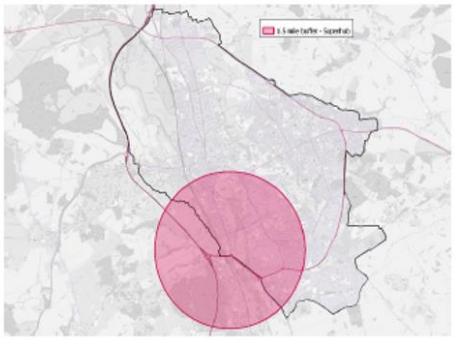
Oxford City in the Future

The following figures show the possible future makeup of charge points across Oxford, with the city set to become fully electric in 2039 if they continue to follow the medium-paced scenario.

Oxford in 2026 (Med)

Population	Cars & Vans	Electric Vehicles
163,637	52,753	12,508

Charging Hubs



No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
79	252	8,912

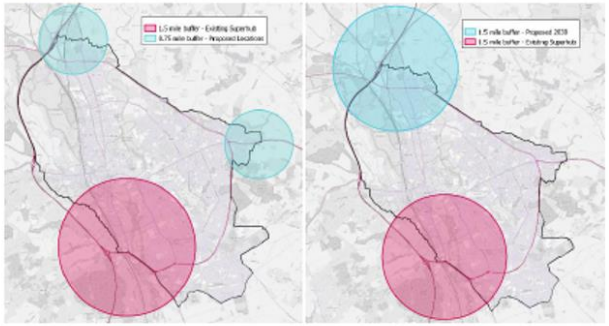
Solution	No. of Locations (2026)	Additional Locations Needed (Today - 2026)	Additional Chargers Needed (Today - 2026) RAPID	FAST
Rapid Hubs	3	0	0	0
Mixed Hubs	24	20	58	36
Gul-e	742	715	-	21
On-Street Residential	50	26	-	71
Off-Street Car Park	5	0	-	0
Destination	17	7	-	27

24% Vehicles supported

Oxford in 2030 (Med)

Population	Cars & Vans	Electric Vehicles
163,637	52,753	26,109

Charging Hubs



No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
131	465	18,602

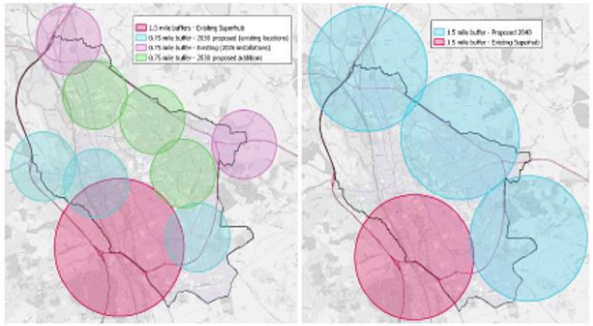
Solution	No. of Locations (2030)	Additional Locations Needed (2026 - 2030)	Additional Chargers Needed (2026 - 2030) RAPID	FAST
Rapid Hubs	4	1	5	2
Mixed Hubs	52	28	44	55
Gul-e	1,585	843		26
On-Street Residential	106	57	-	78
Off-Street Car Park	10	5	-	14
Destination	36	19	-	27

50% Vehicles supported

Oxford in 2039 (Med)

Population	Cars & Vans	Electric Vehicles
165,264	52,753	52,753

Charging Hubs



No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
264	937	37,586

Solution	No. of Locations (2040)	Additional Locations Needed (2030 - 2040)	Additional Chargers Needed (2030 - 2040) RAPID	FAST
Rapid Hubs	9	5	27	18
Mixed Hubs	105	53	106	106
Gul-e	3,202	1,617		51
On-Street Residential	215	109	-	185
Off-Street Car Park	20	10	-	51
Destination	73	37	-	63

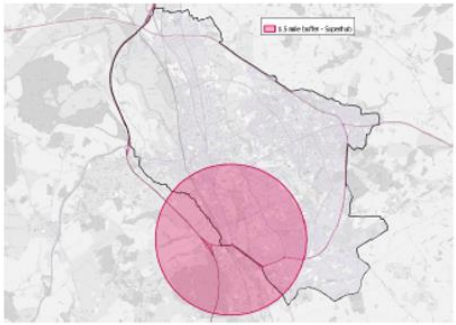
100% Vehicles supported

The following figures show the possible future makeup of charge points across Oxford, with the city set to become fully electric in 2035 if they follow the high scenario. Oxford reaches 100% EV earlier than the previous senario as it considers a higher level of uptake.

Oxford in 2026 (High)

Population	Cars & Vans	Electric Vehicles
163,637	52,753	15,483

Charging Hubs



No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
99	314	11,032

Solution	No. of Locations (2026)	Additional Locations Needed (Today – 2026)	Additional Chargers Needed (Today – 2026) RAPID	FAST
Rapid Hubs	3	0	0	0
Mixed Hubs	31	27	79	49
Gul-e	940	916	-	27
On-Street Residential	63	36	-	98
Off-Street Car Park	4	0	-	0
Destination	21	11	-	36

29% Vehicles supported

Oxford in 2030 (High)

Population	Cars & Vans	Electric Vehicles
163,637	52,753	32,319

Charging Hubs

No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
163	574	23,027

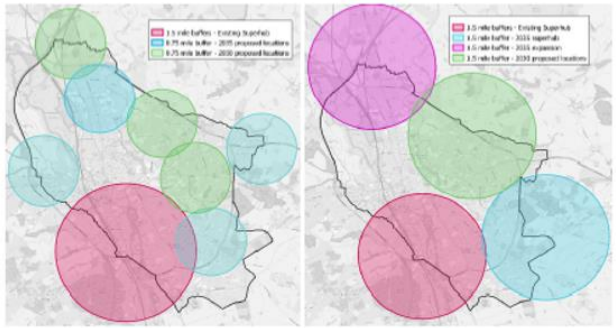
Solution	No. of Locations (2030)	Additional Locations Needed (2026 – 2030)	Additional Chargers Needed (2026 – 2030) RAPID	FAST
Rapid Hubs	6	3	14	8
Mixed Hubs	64	33	46	66
Gul-e	1,962	1,022	-	32
On-Street Residential	132	69	-	93
Off-Street Car Park	12	6	-	25
Destination	45	24	-	32

61% Vehicles supported

Oxford in 2035 (High)

Population	Cars & Vans	Electric Vehicles
164,450	52,753	52,753

Charging Hubs



No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
264	937	37,586

Solution	No. of Locations (2040)	Additional Locations Needed (2030 – 2040)	Additional Chargers Needed (2030 – 2040) RAPID	FAST
Rapid Hubs	9	3	30	20
Mixed Hubs	105	41	103	106
Gul-e	3,202	1,204	-	39
On-Street Residential	170	85	-	318
Off-Street Car Park	16	8	-	46
Destination	58	29	-	57

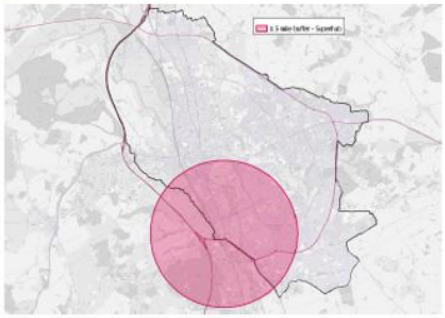
100% Vehicles supported

The following figures show the possible future makeup of charge points across Oxford, with the city set to become fully electric in 2035 if they follow the ZCOP scenario. Oxford reaches 100% EV earlier than the medium senario as it considers a higher level of uptake.

Oxford in 2026 (ZCOP)

Population	Cars & Vans	Electric Vehicles
163,637	52,753	18,991

Charging Hubs



No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
121	385	13,531

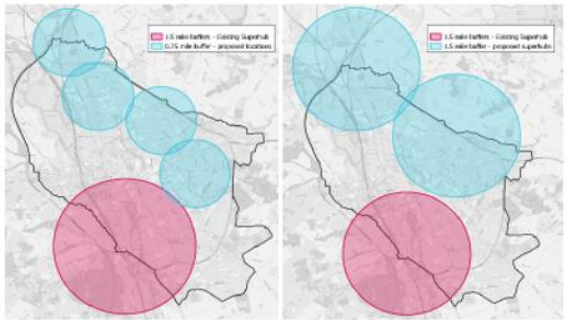
Solution	No. of Locations (2026)	Additional Locations Needed (Today – 2026)	Additional Chargers Needed (Today – 2026) RAPID	FAST
Rapid Hubs	3	0	0	0
Mixed Hubs	38	34	101	63
Gul-e	1,153	1,129	-	34
On-Street Residential	77	50	-	130
Off-Street Car Park	7	3	-	8
Destination	26	16	-	46

36% Vehicles supported

Oxford in 2030 (ZCOP)

Population	Cars & Vans	Electric Vehicles
163,637	52,753	42,202

Charging Hubs



No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
212	749	30,069

Solution	No. of Locations (2030)	Additional Locations Needed (2026 – 2030)	Additional Chargers Needed (2026 – 2030) RAPID	FAST
Rapid Hubs	7	4	24	12
Mixed Hubs	84	46	67	92
Gul-e	2,562	1,409	-	44
On-Street Residential	172	95	-	130
Off-Street Car Park	16	9	-	36
Destination	58	32	-	46

80% Vehicles supported

Oxford in 2035 (ZCOP)

Population	Cars & Vans	Electric Vehicles
164,450	52,753	52,753

Charging Hubs

No of each other type of chargers

Total Rapid Posts	Total Fast Posts	Total Home Chargers
264	937	37,586

Solution	No. of Locations (2040)	Additional Locations Needed (2030 – 2040)	Additional Chargers Needed (2030 – 2040) RAPID	FAST
Rapid Hubs	9	5	30	20
Mixed Hubs	105	53	103	106
Gul-e	3,202	640	-	20
On-Street Residential	215	43	-	73
Off-Street Car Park	20	4	-	20
Destination	73	15	-	24

100% Vehicles supported

Policy and Actions

To meet the ambitious targets for Oxford city in terms of Net Zero, Oxford City Council must introduce a range of policies and actions that support the creation of a fair and accessible network, equipped to meet current and future EV demand.

Oxford can currently support up to 11.39% of its vehicles becoming electric. This needs to rapidly accelerate to accommodate at least 24% of cars and vans by 2026, 50% by 2030, then at 100% by 2039 using the medium up take figures.

Oxford City Council recognises the need to lead by example in the transition to EVs and intends for these policy statements and actions to ensure that the city maintains in reputation as a leading EV city. As discussed in "Taking Charge," the future of charging infrastructure is still developing, so the strategy will need to be refreshed at regular intervals to ensure that it is delivering the appropriate pace of change, while meeting the needs of current users.

Broad Policy Objectives

EV Strategy	
Policy Statement & Area	Action
Facilitate a fair and accessible EV infrastructure for Oxford City	Create design and delivery methodologies to support city-wide charging infrastructure.
	Adoption of Oxfordshire's EV Infrastructure Strategy to complement and realise opportunities for consistent and efficient charging deployment.
	Maximise our innovative status to work with commercial sector and devise novel ways to maximise charger distribution, utilisation and balance energy management, bookable solutions, energy storage and mobility hubs.
Create a dedicated EV team to oversee the implementation of this strategy	Maintain EV teams within Oxford City Council/Oxford Direct Services
	Identify funding sources to support the EV delivery team
	Review this strategy at set time intervals 2026, 2030, 2035, 2040 and refresh as appropriate
Continue to promote Oxford City as a test bed innovative mobility technologies	Continue to create relationships with government, innovative suppliers, local partners, and organisations that support the City's net zero ambitions.
Continue to seek funding opportunities that support this EV strategy	Identify key funding initiatives to support the deployment of EV infrastructure
	Identify key land and assets within Oxford that can support future EV Infrastructure bids e.g., car parks, community buildings, lockups, etc.

The following sections consider the three key areas required to deliver Oxford's transition to zero emission transport, as identified in the vision:

Vehicles	Infrastructure	People

Vehicles

Major vehicle manufacturers have made commitments to transition their vehicle fleets to be fully electric to meet the ban on ICE vehicles in 2030 and hybrids in 2035. This section looks at the main groups of vehicles and how they can be supported to transition to zero emission alternatives.

Private Cars

The UK remains a car-centric society—roughly two thirds of Oxford households (67%) own one or more car.[6]

Oxford City Council is looking to develop the optimal way for ensuring those who need to drive cars—in circumstances where cycling, walking or public transport use is not practicable—are supported to do so in zero-emitting vehicles.

50% of respondents have a private petrol vehicle

52% of respondents intend to replace their vehicle that does the most mileage with an EV

Of these, 45% of those with another vehicle also intend to replace that with an EV

As identified, the carbon impact of private car usage is significant, with city-wide initiatives such as the ZEZ looking to dis-incentivise car journeys, especially for those without a zero-emission vehicle.

The delivery of suitable infrastructure for all those that live, work, and visit Oxford will ensure that the 53% people who have said their next vehicle may be electric have no reservations about charging in the city.

Changes in Vehicle Size

According to research in the UK, the size of cars is continuing to grow by an average of almost 3% from generation to generation.[21] As of 2018, 129 car models on the market exceed the standard size of a UK parking space (16ft x 8ft).[22]

The growing popularity of larger-size Sport Utility Vehicles (SUVs) is pushing councils and developers to reconsider the spatial dimensions and environmental impact of vehicle infrastructure, as SUVs emit almost 10% more than the average car.[23]

When considering the impact of increasing car size on Oxford's transition to EVs, the challenge is in finding the right balance of capacity and efficiency within car parks and charging hubs.

Following this strategy's public consultation, Oxford City Council in collaboration with Oxfordshire County Council, will publicise a best practice parking hierarchy which maps out suggested space allotments, from charging hubs to council car parks, building on BSI's forthcoming 2022 PAS standards.

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21 Thisismoney.co.uk (11.2020) One size no longer fits all
22 Which (6.2018) Cars too big for parking spaces – the worst culprits revealed
23 European Environment Agency (6.2020) Average CO2 emissions from new cars and new vans increased again in 2019

Electric Shared Cars

Car clubs are a form of shared mobility that allow for individuals and commercial organisations to access a personal vehicle without the cost of ownership, offering a practical and cost-effective alternative, while reducing congestion and the demand for private parking spaces.

The inclusion of electric shared cars can bring significant environmental improvement to a city. It is estimated that for every shared car in use, 18 private vehicles can be removed as a result. As of 2019, Oxford had more shared electric vehicles per head of population than any other UK city.[24]

A social impact report by Co-Wheels also found that shared cars has decreased transport poverty by 18%, while saving members an average of £1,000 a year.

> "We must move to electric cars, but we also must have less of them on the roads, both when they are driven and parked. Encourage community use of cars!"

Oxford City Council will continue to work with the Highways Authority, Oxfordshire County Council and car club suppliers to ensure that the delivery of these services is geographically and socially accessible, using open data from organisations to identify key areas of interest for new car club locations.

The installation of new infrastructure at both strategic and on-street locations offers the opportunity to solidify car clubs place as part of wider deployment and should be considered at all future sites.

The level of provision for car club vehicles varies with the size and location of the development, however industry analysis has shown that approximately 1 car per 30 properties is a reasonable starting assumption, with membership ranging from 30-15o people per vehicle, depending on activity levels and increases in cars required at 40-50% utilisation rates.

> "I feel there needs to be priority for jointly-owned vehicles such as car clubs, rather than for household-owned vehicles."

Community-oriented projects such as car sharing are valuable assets to the delivery of wider social inclusivity, expanding the reach which EVs can have. Going forward, Oxford City Council will look to commercial EV car clubs and community car-sharing schemes as a transport priority.

Working Drivers' Vehicles

With a growth in home deliveries, self-employed drivers and home starts over the last few years, the number of people taking their vehicles home at night is on the rise. Coupled with the shift towards electric vehicles, this means that more drivers will require access to a convenient or available public charging network.

The use of public infrastructure by working drivers' vehicles helps improve the business case for deploying infrastructure and in certain locations, can dovetail well with public charge points to avoid duplication and additional strain on the network.

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24 Co-wheels (2019) Oxford leads the way for shared electric cars

Park & Rides sites offers an ideal opportunity for shared use, commuters during the day and working vehicles overnight, as well as mini charging hubs in local communities that support residents and local working drivers.

Oxford City Council already has an excellent reputation of engaging with private partners, through activities including becoming DPD's first 'all-electric city.' [25]

Bicester Eco-depot

With the opening of the new state-of-the-art Bicester eco-depot in June 2021, all parcel deliveries by DPD in Oxford will be made exclusively by electric vehicles. This delivery fleet consists of 40 electric vehicles, which transport over 15,000 parcels a week across the city.

Oxford City Council will support organisations that have expressed an interest in developing relationships to utilise public infrastructure and help overcome issues they face in large scale EV adoption.

As well as exploring opportunities for shared public/private infrastructure, the Council will continue to promote the GUL-e initiative and other safe, licensed pavement crossing solutions as a means for enabling affordable home charging access for working drivers without a driveway.

Taxis: Hackney Carriage and Private Hire Vehicles

As of 2022, Oxford has 107 Oxford licensed Hackney Carriages of which 20 are electric. There are 545 licenced Private Hire vehicles. Together with an estimated 101 out of town private hire taxis entering the city, there is a total of some 750 HC and PH vehicles active in the city.

In addition to the requirements for vehicles travelling in Oxford's ZEZ, all new Hackney Carriage Vehicles newly licensed by Oxford City Council must be Ultra Low Emissions Vehicles (ULEVs). The phasing out of emissions standards between 2020-2025 will bring about a fully-zero emissions fleet of Oxford-licensed Hackney Carriages.[26]

There are several taxi-only rapid charging sites already deployed in Oxford, with additional dedicated and shared sites to come, with taxi drivers benefiting from discounted charging rates in some cases.[27]

For high mileage taxi drivers, ensuring that charging infrastructure is available at popular routes or ranks will help maximise productivity, supporting the business case for migration to EV's. Many of these working drivers also live as well as work in the city, often in more densely populated locations, without access to off-street parking. Provision of closely located charging infrastructure is a good example of the equitability of charging provision that OxEVIS seeks to promote.

Providing reliable, affordable e-taxis may be especially important for those who rely on occasional car-based travel. Having a reliable option in these cases aids the larger goal of limiting unnecessary private car ownership.

Oxford City Council will continue to consider the unique use case of taxi and private hire vehicles when rolling out the infrastructure included in this strategy, with an additional

25 DPD Group (7.2021) Oxford becomes DPD's first all-electric city
26 Oxford City Council (1.2020) A Journey to Zero
27 Oxford City Council (9.2021) Rapid EV charging sites for taxis and public go live at Keble Road and Manzil Way

allowance made for the number of public rapid chargers needed to meet the likely future demand of a 100% electric fleet.

Vehicle Policy Objectives

Vehicle Policies	
Policy Statement & Area	Action
Promote shared electric mobility schemes as a priority in Oxford's travel hierarchy	Ensure electric car clubs are deployed at all significant charging developments
	A set proportion of car club membership tariff will be spent on marketing for expansion of car club networks
	Facilitate relationships between car club operators and charge point operators to ensure a seamless experience.
	Develop a monitoring framework to build evidence base for impact of car clubs
	Facilitate joined up solutions for mobility hubs by working with key partners in the City
	Council will deploy electric only pool car fleet at appropriate offices
Lead by example through the decarbonisation of transport in the city	Support ODS in the reduction of carbon emissions from their fleet to support the city's net zero 2030 target Consider City and ODS fleet charging needs for chargepoint infrastructure business case opportunities
Deliver a zero-emission fleet of taxi and private hire vehicles	Monitor the transition of taxis and private hires on an annual basis
	All Oxford-licensed Hackney Carriages (black cabs) to be zero emission by 2025
	All private hire vehicles to be zero emission by 2030.
	Work with all partners to ensure procurement policies promote zero emission taxis and private hire vehicles
Support working drivers to transition to electric vehicles	Work with key organisations, deploying working drivers in the city to create and implement EV infrastructure multi-use solutions.
	Provide charging solutions to meet the needs of working drivers accommodating different vehicle sizes and working patterns

Infrastructure

"Taking Charge" places an obligation on local authorities to be involved in the deployment of infrastructure. This section outlines the key areas of infrastructure deployment required for mass adoption of EVs in Oxford.

This will be achieved by continually reviewing provision in the city against the set targets and identifying and pursuing geographic gaps in commercial and home charging facilities in areas, with a focus on ensuring that there is equal coverage across all city wards.

In delivering the required infrastructure, this strategy aligns with the regional deployment prioritisation framework in OEVIS (shown below).

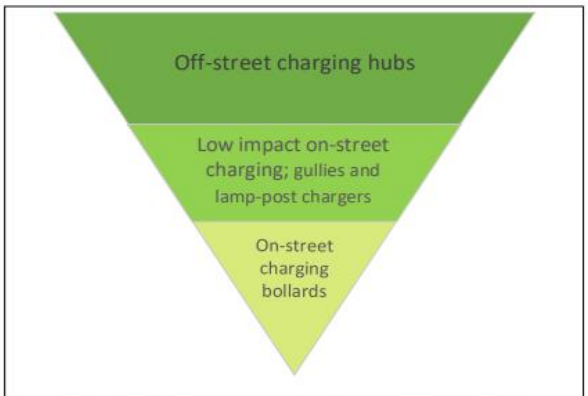

Figure 8 - Priorities for supporting charging without off-street parking

Rapid Charging on Oxford's Strategic Road Network

The UK has one of the largest and most comprehensive rapid networks in Europe, including more than 3,500 rapid chargers.[28]

The development of Energy Superhub Oxford (ESO) will distinguish Oxford's place in this network. This will not only help stimulate the city's visitor economy, but also provide the highest standard of transport service to the local population.

> "Charging facilities need to be more accessible on sites outside of the city."

The strategic placement of ESO, to the south of central Oxford near the A34, is part of the larger ambition to reduce all motor traffic in the city centre.

The Rapid Charging Fund (RCF)[29] will support the installation of at least six rapid chargers at every motorway service area by the end of 2023. This is likely to benefit Oxford and the surrounding region.

By influencing traffic out towards the orbital roads on the Outer Ring Road and along the A34 and M40, active travel and public transport options are more likely to take precedent over increasingly limited car-based options in central Oxford.

28 Zap-Map (2.2022) EV Charging Stats 2022

29 https://www.gov.uk/guidance/rapid-charging-fund

Public Charging in Local Authority Locations

The provision of EV charging in assets owned by the local authority and partners will ensure that those that work at, visit, or live near these locations can make use of charging infrastructure.

Where possible the Council will seek to structure deployment such that the more lucrative EV charging sites provide cross-subsidy to those, initially, less well-used. It should be noted that sites in those areas of the city with higher numbers of commercial vehicles parked overnight may be currently less attractive to the market but may eventually see the highest usage of EV charging sites in the latter years once most vehicles are electric.

Over the longer term, connected EV infrastructure sites are anticipated to become valuable commercial and community energy assets. In the short term, whilst EV charging uptake is still low, the Council may incur revenue costs to subsidise operation and maintenance of equipment, where this is less attractive to the market, to ensure equitable infrastructure delivery.

To manage local authority spaces in the most efficient and effective manner, Oxford City Council will look to:

- Manage parking bays for EV charging to promote both destination and overnight EV charging
- Use enforceable Traffic Regulation Orders (TROs) to reserve parking bays with EV chargers for charging EVs or specific car club vehicles only
- Use consistent EV charging bay markings in line with UK government and industry standards

These steps will ensure that Oxford City is in alignment with neighbouring authorities, providing consistency for the end user.

The deployment of charging infrastructure in council and partner owned parking assets will depend on the size, length of stay, tourist/visitor demand, and forecasted EV uptake in the surrounding area, as well as the long-term strategic priorities for the properties.

The use of car parks can limit the number of on-street locations required, keeping city streets as active-travel-friendly and as clutter-free as possible. This reflects Oxford Local Plan's presumption that vehicle parking will be kept to the minimum necessary to ensure the successful functioning of the city's travel network.

On-street Parking

Oxford City Council will continue to deliver on-street solutions through its Go Ultra Low Oxford project, which is currently projected to install up to 100 further chargers across the city for residents without off-street parking.

Residents who would like a charger to be installed on their street are currently able to register their interest on the GULO website.[30] This feature helps the Council assess the level of demand and ensure that the roll-out of these chargers benefits as many eligible residents as possible.

The Council will look to continue to engage with local stakeholders to create a productive dialogue between residents, businesses, and the council to deliver the required infrastructure in the right locations.

30 Go Ultra Low Oxford (2022) Register your interest

There are currently a number of on-street charging technologies operating in Oxford as part of GULO project, including lamppost chargers and bollard chargers.

The GUL-e solution also offers a significant opportunity to increase the number of properties where a vehicle can be charged directly. The successful trial of GUL-e ended in March 2022 and the product is expected to be rolled out across the city and wider region (hence its inclusion as a possible charging option in the future forecasts).

Current planning legislation means that some EV infrastructure installations will require planning permission. These will be considered on a case-by-case basis. Homeowners without access to off-street parking, would currently need to apply for planning permission to install a charger on their house, if they wanted to use the GUL-e solution.

New Developments Provision

Oxford's high density of housing developments with communal residential parking areas limits the spatial availability for home EV charger installations. In many cases, landowners and housing management companies lack the resources and finances to deliver EV infrastructure in communal parking areas, if appropriate.

Oxford City Housing Limited (OCHL) has committed to building around 1,900 new homes for sale and rent across Oxford over the next 10 years,[31] which can more directly plan for EVs from the onset.

EV charging infrastructure in residential car parking at new developments will be required through the council's planning process, as per the standards set in the Oxford City Council Local Plan (2016-2036) which state that:

- Where parking is to be provided, planning permission will only be granted for developments if:
    - Provision is made for EV charging points for each residential unit with an allocated parking space; and
    - Non-allocated spaces are provided with at least 25% (with a minimum of 2) having electric charging points installed.
- Planning permission will only be granted for non-residential development that includes parking spaces if a minimum of 25% of the spaces are provided with electric charging points.

The development of EV charging at new properties also offers real opportunity to link up with shared electric car clubs. Oxford City Council will look to provide guidance and advice on this opportunity, alongside the planning conditions detailed above, to set the benchmark for new or redeveloped properties.

The updated Building Regulations 2010, published in June 2022, include new requirements for electric vehicles charging infrastructure to be installed. This is covered in Part S. These updates stipulate a requirement for chargepoints to be included in new residential developments and non-residential developments, including those that undergo material changed or major renovation.

> "If we're shifting towards encouraging people to use electric vehicle, they should have electric points fitted as standard on all new houses and flats. There should be more accessible fast charging points in shopping centres & towns."

31 Oxford City Council (5.2021) #OxfordNeedsHomes

Historic Areas Provision

Oxford City Council is dedicated to ensure that the transition from conventional fuel to electric vehicles enhances the character of Oxford as a historic, living city, ensuring that the city's zero carbon targets can be met while minimising negative impacts on the historic streetscape.

Proposals for the introduction of EV infrastructure will follow planning and design guidance. They will also be carefully assessed in relation to travel and infrastructure hierarchy as well as a site's immediate setting and surroundings, including its impact on streetscape quality.

As such, the design of EV parking and charging will adhere to relevant material considerations set out in heritage conservation policy and be weighed in accordance with local planning policies and the National Planning Policy Framework (NPPF).

To ensure appropriate EV charging infrastructure can be delivered in all of the city's neighbourhoods, local and government planning legislation needs to evolve. OxEVIS targets will be considered in the context of local planning legislation changes, and the Council will actively engage with the government to influence and advise it, on the national planning legislation changes needed in this area

To enable this, OxEVIS will provide the umbrella for collaboration with key Council stakeholders, including planning, housing, property services and others to create guidance for developers and homeowners regarding EV installations as well as updating existing Technical Advice Notes (TANs) and/or protocols to support evolution in these areas.

Infrastructure Policy Objectives

Infrastructure Policies	
Policy Statement & Area	Action
Oversee the deployment of a network that meets current and future demand in the city 	On an annual basis, monitor progress of EV infrastructure delivery against trajectory using the modelling tool to ensure provision continues to meet revised demand and takes into account wider ZEZ plans/impact
	Scale-up of GUL-e trial for mass home charger installation
	Seek to leverage efficient use of energy to facilitate charging by partnering with DNO
	Work with private sector to deliver required infrastructure via a set of coordinated programmes and projects, to meet the targets for 2026, 2030 and 2040
Set the minimum standards required for any new deployment within the city 	All new charge points will be required to support interoperability, including contactless payment.
	All new charge points will meet minimum standards set in PAS standards (due 2022) and Government's EV Infrastructure Strategy
	Set minimum standards for network availability as part of any future contracts
	Wherever possible, drive innovation by encouraging suppliers to source materials for deployment that have a lower carbon footprint and are more efficient.
	All tenders/contracts will include a requirement for social inclusion to ensure the provision of accessible, fair and socially equitable EV Infrastructure.

Ensure planning policies reflect the changing needs of EV infrastructure 	Collaborate to define minimum charging infrastructure provision to be provided in new and redeveloped or materially changed developments, where not defined at a national level.
	Electric car clubs to be considered in all new developments
	Updating of the Technical Advice Note (TAN) to support delivery of EV solutions in a heritage context
	Encourage existing non-residential locations to have, as a minimum, 1 in 4 spaces provided with EV charging points
	Any areas of the City Council planning EV infrastructure development to ensure they have consulted with colleagues involved in transport planning, Net Zero targets and wider EV infrastructure planning
Ensure that the future network meets the needs of all 	Continue to test new technologies in the city that support the transition to EVs especially utilising Smart charge points and local energy projects
	Continue to partner and test new innovative products/approaches that support the accessibility of charging
	Infrastructure delivery is prioritised to ensure it is fair and equitable.
Ensure EV infrastructure supports the wider transport goals within the city 	All new charging hubs to consider an electric shared car club vehicle
	Consider links to active and public transport when identifying new sites for charge points

People

The switch to EVs will require marked change in behaviours from drivers, however it does offer the opportunity for refuelling to be more convenient, more accessible, cheaper and part of the wider transition to more sustainable transport.

Influencing City Stakeholders

Oxford City Council acknowledges that the move to EVs will not be possible without the help and contribution of the city's array of stakeholders. The groups who can play a part in the switch to EVs include:

- Local authorities
- UK Government
- Car companies
- Private organisations
- Friends and family
- All public sector bodies

The council will continue its successful record in seeking out funding and resourcing opportunities to enable commercial stakeholders to test out new and innovative products in the city, building delivery partnerships to set standards of best practice, while increasing the number of EV projects on.

Commercial Opportunities

The UK government (as per "Taking Charge") and Oxford City Council believe that leveraging the private sector to help with the delivery of charging infrastructure and supporting services offers a real opportunity for the successful integration into everyday life in Oxford.

Westgate Centre Charging Hub

The EV charging hub with 50 fast EV chargers at the Westgate Centre in Oxford exemplifies the possibilities for large-scale commercial projects. EV charging provided by commercial destinations for their customers is useful for all motorists but especially for users without access to off-road EV charging at home.

While the delivery of the charging network required in Oxford will require significant upfront capital investment, estimated at up to £21.372 million until 2040, it also offers the opportunity for local authorities to generate additional revenue.

Supermarkets, gyms, and hospitality venues continue to deploy charging infrastructure at scale, with several large retailers announcing plans to boost EV charging at their stores across the country over the last 3 years.[32]

Oxford City Council plans to build upon this momentum, with parallel focus on smaller-scale, local businesses that are equally suitable to provide EV charging.

There is significant appetite among fleets to transition to EVs, however this presents the challenge of matching appetite to charging provision.[33] The Council will explore options to share public and commercial charge points.

Turning to established commercial relationships, such as those with Low Carbon Hub and Oxfordshire Greentech, for guidance on outreach strategies that may have significant benefit

32 Oxfordshire County Council (2.2021) Oxfordshire Electric Vehicle Infrastructure Strategy
33 BVRLA (2.2022) Fleet Charging Guide 2022

on Oxford City Council's EV messaging. These relationships are key to expanding the reach of Oxford's reputation as a test bed for innovative technologies.

Workplace and Business Opportunities

The Council is conscious that a large portion of its local population is reliant on private car usage for employment purposes however it views the abundance of free workplace parking within the city as a significant threat to the step-change required to avert the considerable negative impacts of car-based growth.

The Eastern Arc has the highest amount of workplace parking in Oxford, accounting for just under half of commuter car parking spaces.[34] Our policy will look to apply interventions in areas such as this alongside the rest of the City

The Council intends to utilise workplace parking and charging tariffs as a means of encouraging less commuter congestion.

Alongside these schemes, where feasible, workplace charging installed specifically at council premises could serve as EV charging hubs if made accessible to the public overnight. It may also be possible to gain investment from CPOs in concession contracts for these sites.

> "Change is inevitable but it's down to cost for both at home and employer."

Ensuring Open, Accessible, and Reliable EV Infrastructure

Demographically, Oxford's higher levels of affluence increase the likelihood of it being one of the first places to see mass adoption of EVs. Nevertheless, there remain a number of areas with lower income levels, which are less likely to have equitable access to the city's changing transport infrastructure, as well as often disproportionately impacted by poor air quality.

The journey towards EV mobility presents a unique opportunity for Oxford City Council to embed social inclusivity ideals into its transport planning practice, empowering disadvantaged communities, while also reducing the negative impact of vehicle emissions on overall public health and wellbeing.

The Council is committed to ensuring that any future deployment of infrastructure is done in a fair and just manner and does not disadvantage any communities or residents. This will be achieved through a unique approach to identifying the areas that require infrastructure, moving away from high car ownership & income-dependent model to a fairer zoned property & population-based approach.

While the Council is limited in its capacity to assist low-income households in the purchase of EVs, it will direct investment towards the growth of electric car clubs and community car sharing schemes.

This may require pursuing infrastructure projects in locations that are not the most commercially viable, so that the priority can be on extending the benefits of the lower operational costs of driving electric to lower income families who are more likely to park on-street or in shared parking areas.[35]

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34 Connecting Oxford (2022) Workplace Parking Levy
35 Transport Studies Unit, University of Oxford (2.2022) Preferences for Public Electric

Accessibility & Equity

Across the EV industry, accessibility standards are historically underdeveloped. To date, work on inclusive design of EV equipment or infrastructure has been limited to individual projects and councils (e.g. Oxford City Council's accessibility work in the GULO project).

In the summer of 2022, the UK Government, with BSI and Motability, hopes to release a set of industry standards to improve overall accessibility. Appendix II shows the various areas to be considered as part of future deployments.

The challenge is to ensure that EV charging not only meets the needs of a wide range of people and does not intentionally discriminate against communities—whether that's on the grounds of gender, race, disability, age, or socio economics etc.—but also upholds the potential health, wellbeing, and economic benefits that cleaner air and improved access to flexible modes of affordable transport can bring to communities.

Aligning EV infrastructure with existing community interventions and multi-modal travel opportunities as part of a strategic plan that links economic, social, health & wellbeing and cultural opportunities will amplify the positive impact of investment in our communities.

EV-related project's accessibility and equity measures will be managed through contracts and legal agreements between Oxford City Council and commercial stakeholders with an audit process put in place.

> "The majority of the population need public EV chargers to make EVs really viable. So, we need a programme for universal EV charging provision."

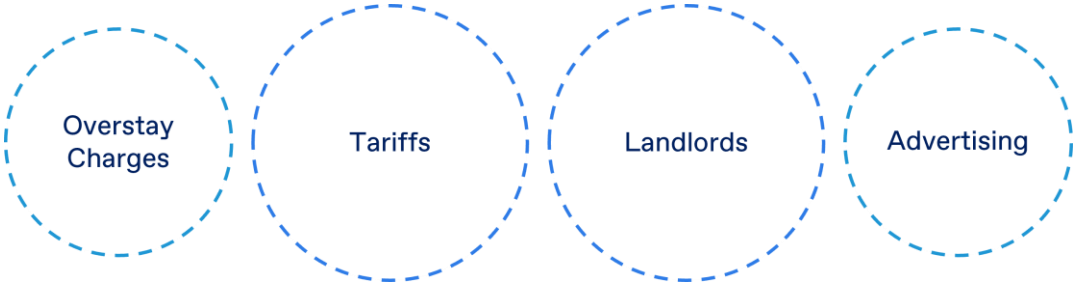
People Policy Objectives

People Policies	
Policy Statement & Area	Action
Ensure the city of Oxford benefits from new commercial opportunities in the EV space	EV Infrastructure will meet the needs of delivery and logistic based services using Oxford
	Actively consider reserved Park & Ride parking for working drivers operating EV delivery vehicles Implementation of EV charging at all Park & Rides for commuters/visitors by day and residents / fleet drivers by night to maximise utilisation
	Look to maximise the business case for EV charge points by exploring, rental, concessions, overstay charges and advertising
Continue to make use of the Go Ultra Low Oxford brand, to help marketing & research	Develop a network of EV champions within the city that represent the public and commercial organisations
	Annual report of demographic usage of EV chargers carried out by Oxford City Council
	Deliver a programme of promotional activities to promote the uptake of EVs across the city building on GULO campaign
	Use funding generated for Oxford City and Oxfordshire County, through the ZEZ, to fund the operation and maintenance of the EV estate and to help businesses and residents in the Zero Emission Zone transition to EVs
Continue to promote Oxford City as an exemplar city and support other authorities in their transition	Pursue funded opportunities to offer services and expertise to other organisations
	Build relationships with future partners and identify upcoming funding to test new products in the city
Provide a fully accessible transport network which meets the needs of all users	Designated accessible bays at every charging hub
	Creation of an Accessibility Audit document to be completed by developers at each new EV site
	Pursue an appropriate programme to electrify disabled bays in the City
Develop relationships with all local stakeholders and partners to deliver a city-wide approach	Provide a joined-up solution by introducing a specific EV working group sprint via ZCOP, which looks, and is accessed in, consistent ways across the city
	Create city EV working group to identify shared assets and opportunities
Ensure Oxford City maximises the environmental and health benefits that electric vehicles offer	Provide and manage a conduit for resident requests for the siting of new charge points
	Measure impact of EV transition on air quality in city

Financial Opportunity

The transition to electric vehicles along with the delivery of a completely new refuelling infrastructure offers the opportunity for cities to play a part in the deployment and generate revenue.

There are a number of options open to hosts of charge points to generate future revenue streams and these include:



Tariffs (Concession) – Generating revenue through the tariffs charged to users either directly or as part of a concession agreement with private companies.
Landlord – This is where the parking space or land is leased or rented to a CPO.
Overstay Charges – Where penalty charges are automatically passed on to customers exceeding time allowed.
Advertising – Selling advertising on screens or charge points or through a naming agreement

Furthermore, Oxford is in a unique position with the introduction of the first UK ZEZ to leverage early carbon reduction initiatives such as this to provide some of the funding for EV charging infrastructure. Other near-future incentives such as Workplace Charging and Polluter Pays models would increase opportunities for further funding.

The level of return for any organisation is linked to the level of initial investment and the ability to generate the required levels of utilisation and the correct levels of tariff. Oxford City Council will continue to seek out the most financially attractive partnerships such as securing additional investment from the private sector, through grant bids, as well as opening up opportunities for ODS/ODSTL to deliver services in this space to expand the network in the city.

Having the OxEVIS Strategy in place offers the best chance of maximising returns.

Summary

As detailed in the Government's new EV Infrastructure Strategy, the UK needs a 10-fold increase in charging infrastructure in the coming years. Local authorities are vital to making this a reality.

The transition to EVs as part of a wider switch to cleaner, healthier travel behaviours not only offers the city the opportunity to ensure an accessible and equitable transition but can also create opportunities for Oxford to identify additional revenue opportunities.

> "We all need to do more to protect our planet and reduce carbon use and pollution through the life cycle. Electric vehicles have a big part to play here, but not the only part."

A flourishing EV infrastructure is essential to Oxford's contribution to national targets on carbon reduction, furthering our reputation as a leader in innovation. This is the beginning of an exciting journey towards a greener Oxford.

Appendix I

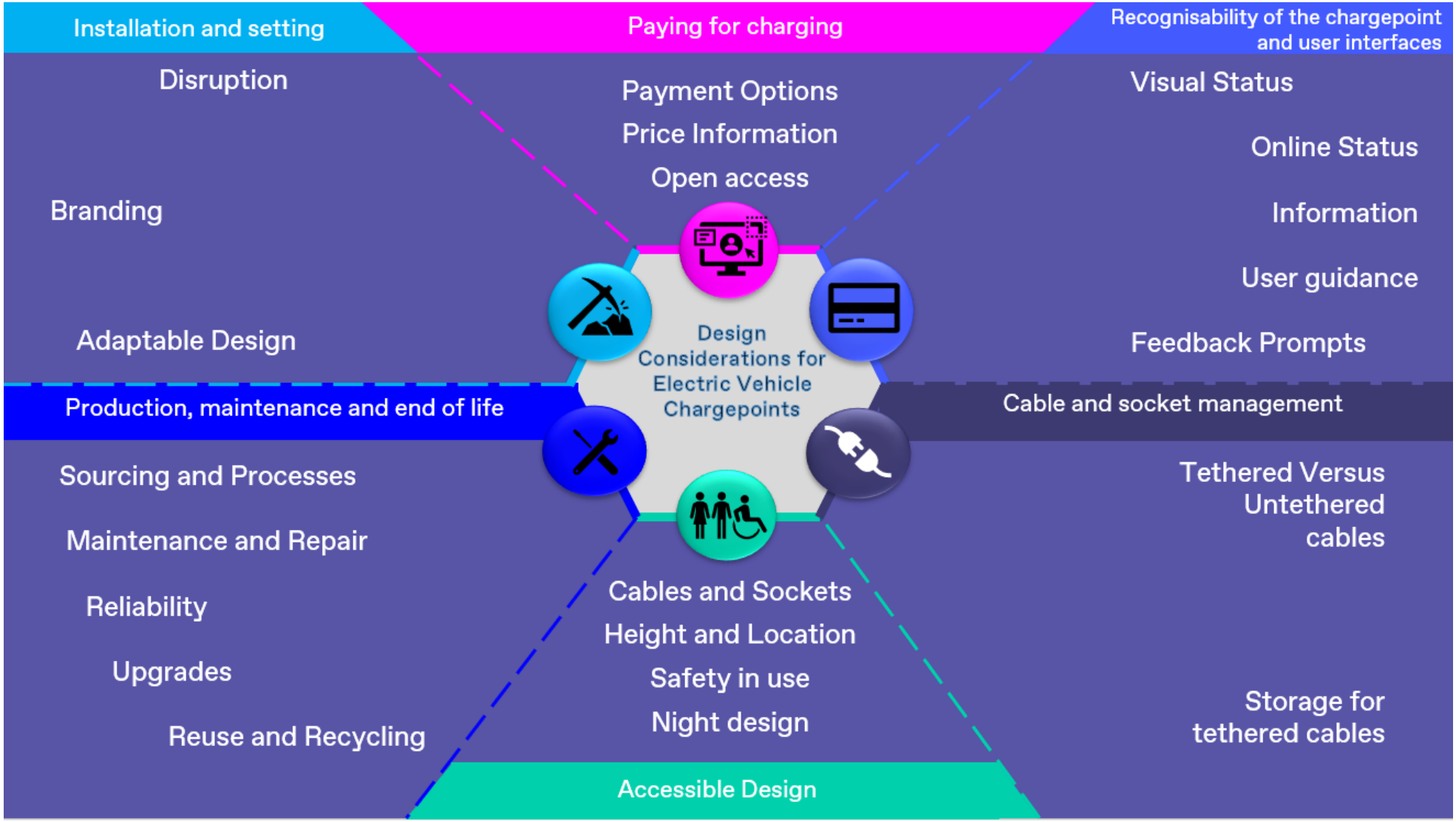
Executive Summary of City-Wide Policy Statements					
1. Oversee the deployment of a network that meets current and future demand in the city 2. Set the minimum standards required for any new deployment within the city 3. Ensure planning policies reflect the changing needs of EV infrastructure 4. Develop relationships with all local stakeholders and partners to deliver a city-wide approach	1. Ensure that the future network meets the needs of all 2. Provide a fully accessible transport network which meets the needs of all users 3. Facilitate a fair and accessible EV infrastructure for Oxford City	1. Continue to promote Oxford City as a test bed innovative mobility technologies	1. Create a dedicated EV team to oversee the implementation of this strategy 2. Promote shared electric mobility schemes as a priority in Oxford's travel hierarchy 3. Lead by example through the decarbonisation of transport in the city 4. Deliver a zero-emission fleet of taxi and private hire vehicles 5. Support working drivers to transition to electric vehicles 6. Continue to make use of the Go Ultra Low Oxford brand, to help marketing & research	1. Continue to seek funding opportunities that support this EV strategy 2. Ensure the city of Oxford benefits from new commercial opportunities in the EV space	1. Ensure EV infrastructure supports the wider transport goals within the city 2. Continue to promote Oxford City as an exemplar city and support other authorities in their transition 3. Ensure Oxford City maximises the environmental and health benefits that electric vehicles offer

Executive Summary of City-Wide Policy Actions					
1. The Council will endeavour to ensure all new charge points support interoperability, meet standards set in PAS standards, Gov EV Strategy and network availability standards, and that new contracts have an element of social inclusion 2. Collaborate to define minimum charging infrastructure provision to be provided in new and redeveloped or materially changed developments, where not defined at a national level. 3. Create city EV working group to identify shared assets and opportunities and work with the private sector to monitor progress each year 4. Updating of the Technical Advice Note (TAN) to support delivery of EV solutions in a heritage context **5.** Work with large organisations in the city to understand requirements to transition fleets to EVs at scale **6.** Alongside the completion of the Energy Superhub in Oxford in 2023 and 100 on-street chargers by 2026, we will actively consider implementing EV charging at all Park & Rides for commuters by day and workplace drivers by night. Additionally, we will continue the GUL-e trial for mass home charger installation and monitor the EV uptake and charger deployment on an annual basis	1. We will continue to test new technologies in the city that support the transition to EVs especially utilising Smart charge points and local energy projects and look to partner and test new innovative products that support the accessibility of charging 2. Ensure electric car clubs are deployed at all new and significant charging developments. 3. Proportion of car club membership tariffs will be spent on marketing for the expansion of car club networks. Additionally, facilitate relationships between car club operators and charge point operators to ensure a seamless experience and develop a monitoring framework to build evidence base for impact of car clubs 4. All new contracts will have element of social inclusion, e.g. 80/20 split of infrastructure (80% commercial and 20% fairness) 5. Provide designated Blue Badge EV parking spaces at every charging hub, create an Accessibility Audit document to be completed by developers at each new EV site, and prioritise the needs of users with mobility/accessibility impairments	1. Continue to create relationships with innovative suppliers, local partners, and large organisations. 2. We will identify projects for future funding bids, especially smart charge point technologies and local energy projects	1. We will set up an EV team and identify funding sources to support the EV team's delivery. 2. We will review this Strategy at set time intervals 2026, 2030, 2035, 2040 and refresh 3. Support ODS in the reduction of carbon emissions from their fleet to help meet net zero 2030 targets 4. Monitor the transition of taxis and private hires on an annual basis with targets for all Oxford-licensed Hackney Carriages (black cabs) to be zero emission by 2025 and private hire vehicles to be zero emission by 2030. Additionally, we will work with all partners to ensure procurement policies promote zero emission taxis and private hire vehicles 5. Adapt all charge points to meet the needs of working drivers, including for size and access 6. Develop a network of EV champions within the city that represent the public and commercial organisations. Deliver a programme of promotional activities to promote the uptake of EVs across the city. 7. An annual report of demographic usage of EV chargers carried out by Oxford City Council and use funding generated through the ZEZ to help businesses and residents in the zone transition to EVs	1. Identify key funding pots to support the deployment of infrastructure 2. Identify key assets within Oxford that can support future funding bids e.g., car parks, community buildings, lockups, etc.	1. We will put in place requirements for all new charging hubs to consider an electric shared car club vehicle and links to active and public transport 2. We will build our relationships with future partners and identify upcoming funding to test new products in the city as well as offering services and expertise to other authorities in UK beginning EV journey and encouraging the implementation of more Zero Emission Zones. 3. Any areas of the City Council planning EV infrastructure development to ensure they have consulted with colleagues involved in transport planning, Net Zero targets and wider EV infrastructure planning

Executive Summary of Regional Policy Statements					
1. The councils will aim for deployment of public EV charge points in Oxfordshire that goes towards meeting predicted demand by 2025 in line with national targets and with reference to European Directives 2. The councils will seek to include statements and policies supportive of EV charging infrastructure and, where appropriate, references to the Oxfordshire Electric Vehicle Infrastructure Strategy in their planning standards and guidance 3. The councils will benchmark nationally, and between themselves, each seeking to set minimum standards for the quantity of EV charging to be provided in development in their planning requirements 4. The councils will seek to improve the availability of rapid and ultra-rapid EV charging on and near the strategic road network and important link roads across Oxfordshire	1. Recognising that lack of off-road parking may be a significant barrier to EV take-up, Oxfordshire County Council will promote a hierarchy of solutions to EV charging for residents, businesses, and shared vehicles without access to off-road parking, which prioritises off-street charging hubs, and other solution which avoid generating additional street clutter or surrounding maintenance and management challenges 2. To manage the impact of EV charger without restricting access to EV charging, the Councils will define and communicate the design features of EV chargers which will have the most positive impact on the character of our cities towns and villages, and ensure that where there are specific heritage conservation needs, these are met by the charging equipment deployed 3. The councils will encourage the deployment of a high quality, reliable, open, value for money, future-proofed and truly instant access EV charging network for Oxfordshire by setting high standards which seek to reach 'above and beyond' minimum legal requirements	1. The councils will seek to increase the emissions reduction benefits of electric vehicles, and mitigate the impact of EV charging infrastructure on the local and national grid by encouraging and promoting the use of renewable energy for EV charging, encourage 'off-peak' use of EV chargers, and exploring technical options to manage grid demand from EV charging infrastructure	1. The councils will aspire to reach or exceed a target of converting 7.5% of local authority managed public car park spaces, to fast or rapid EV charging by 2025 2. The councils will manage parking bays for EV charging in local authority car parks to encourage both destination and overnight EV charging and for all types of EV ownership, including private vehicles, shared or car club vehicles, and business vehicles where appropriate 3. The councils will support staff and visitors to access electric vehicle charging at Council premises where appropriate 4. The councils will seek opportunities to encourage organisations, businesses and other owners of commercial public and customer car parks to deploy public EV charging infrastructure where it is appropriate 5. The councils will explore opportunities to encourage owners and managers of housing stock of all types of tenure to deploy EV charging infrastructure for residents where it is appropriate 6. The councils will explore opportunities to encourage uptake of EV charging at workplaces and business premises where it is appropriate	1. The councils will collaborate to seek funding for EV infrastructure and support the development of a self-sustaining EV charging network for Oxfordshire which relies less heavily on continuing public finance support in the future and minimises the impact on existing and future council budgets	1. The councils will seek to provide support and guidance on EV charging provision to Town and Parish Councils, and other groups writing Neighbourhood Plans 2. The councils will promote information about public EV charging in Oxfordshire, and awareness of the benefits of EVs to the public through their online and other communications channels

Regional Policy actions can be found here.

Appendix II



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