

Cabinet Report



Report of Head of Acting Deputy Chief Executive – Transformation and Operations

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Wards affected: All

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To: CABINET

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Oxfordshire Electric Vehicle Infrastructure Strategy

Recommendations

- (a) That Cabinet adopts the recommended policies and key actions for the Oxfordshire Electric Vehicle Infrastructure Strategy (2020-2025).
- (b) Cabinet is further invited to consider a recommendation to support measures that would reduce the negative environmental impacts of EV battery production, through for example, responding to any relevant government consultations and backing research and innovation in new technologies.

Purpose of report

1. The government has proposed an end to petrol and diesel vehicles by 2030. To support Oxfordshire residents to make the change from petrol and diesel to electric vehicles (EVs), Oxfordshire's councils have worked together to develop an operational strategy for increasing and managing EV charging across the county. This strategy supports the reduction of transport emissions as part of a hierarchy of sustainable transport; encouraging uptake of EVs by enabling the development of a high quality, accessible and convenient EV charging network.
2. Our vision for EV charging in Oxfordshire is:
 - *Residents, businesses and visitors in Oxfordshire will be confident they can recharge EVs conveniently, and in a manner appropriate for their needs.*

- *Oxfordshire's EV charging provision will develop to meet the needs of users now and in the future, and in doing so support Oxfordshire's transition to decarbonising transport and improving air quality.*
3. The Oxfordshire Electric Vehicle Infrastructure Strategy (OEVIS) provides an operational approach to enabling and deploying charging infrastructure in Oxfordshire for cars and car-based vans. In the short-term (2020-2025), our objectives are to:
- Enable and deliver public EV charging strategically across Oxfordshire
 - Adopt a common approach to managing EV charging in Council car parks
 - Enable residents without access to private off-road parking to access a range of options for EV charging
 - Encourage new developments to install high quality EV charging infrastructure
 - Set standards for the quality of public EV charging in Oxfordshire which supports development of a network which is high quality, open, accessible and future-proofed
 - Work with partners to encourage other landowners to install EV charging infrastructure for businesses, residents and other users.

Corporate objectives

4. The strategy addresses and contributes to the following corporate objectives: to become carbon neutral in own operations by 2030 and as a district by 2045.

Introduction

5. The OEVIS has been developed in response to a need identified by officers across the Oxfordshire councils. All of Oxfordshire's councils have declared climate emergencies. Supporting a transition to zero emission road transport is a key component in Oxfordshire's councils achieving their net zero carbon targets. Comprehensive, accessible and efficient charging infrastructure is essential in enabling the rapid adoption of electric vehicles. This strategy sets out the policies and plans to realise this goal.
6. It is proposed that the OEVIS is adopted by all six collaborating councils in Oxfordshire, and work is underway at each of the district and city councils to present the strategy to their own cabinets for adoption.
7. To support the drive to reach net zero carbon emissions by 2050, the UK government has set out its ambitions for all new cars to be electric by 2030. Socio-economic factors mean Oxfordshire is likely to have faster growth in EV sales than the national average; University of Oxford predictions indicate that by 2025 there could be over 25,000 EVs on Oxfordshire's roads, and over 44,000 by 2027. Local measures such as the upcoming Zero Emission Zone (ZEZ) pilot starting in August 2021 may also stimulate additional uptake of EVs, not just within the zone, but also across the county, from where journeys into the zone may originate.
8. The forecast increase in EV uptake makes the need for adequate EV charging infrastructure urgent – we need to plan now for action to be taken on EV charging within the coming 3-5 years. This is particularly acute for the 30 – 40% of households across the county with no off-road parking who are unable to install their own EV charger. Residents already contact Oxfordshire County Council and

the districts on a regular basis with requests for support with EV charging and on-street EV chargers.

9. Current public EV charging provision in the county is limited and most is focussed in Oxford City. As demand increases, the councils are each looking into deploying their own infrastructure, and a lack of coordination could result in inconsistency across the county, and loss of opportunities to collaborate to reduce resource demand on the councils and share learning.
10. Oxfordshire has not previously had any detailed operational strategy or policy for the deployment and management of EV charging infrastructure. A shared strategic approach across all six of Oxfordshire's local authorities will ensure we meet customer needs and expectations, and co-ordinate activity across Oxfordshire to ensure a complimentary offering, consistent strategy and policies, and take best advantage of external funding opportunities.

Background

11. The OEVIS provides an operational approach to enabling and deploying charging infrastructure in Oxfordshire in the short-term (2020-2025). The strategy covers the administrative area of Oxfordshire County Council and includes the administrative areas of each of the five district councils. It focusses on EV charging for cars, car-based vans, and taxis (hackney carriage and private hire vehicles) for three user groups with differing needs for EV charging:
 - a) Oxfordshire residents
 - b) Local businesses and their employees, taxis, logistics operations and car clubs
 - c) Visitors to Oxfordshire.
12. The OEVIS strategy has strong links with the emerging Connecting Oxfordshire Local Transport and Connectivity Plan (LTCP), and aims to complement and support the LTCP vision, by:
 - a) reducing emissions from shared transport through promoting EV infrastructure for shared transport
 - b) reducing emission from private road transport where active and public transport is not an option.
13. The OEVIS will act as a supporting strategy for the LTCP.
14. The strategy has strong ties with the Oxfordshire Energy Strategy, the Oxfordshire 2050 Plan, each of the collaborating Councils' Climate Emergency declarations and net zero carbon targets, and Oxfordshire County Council's Climate Action Framework (CAF). The OEVIS will act as a supporting strategy to the CAF to facilitate delivery of recommended actions and support the drive to meet local and national emissions reductions targets.
15. Oxfordshire County Council and Oxford City Council are proposing to create a ZEZ pilot in Oxford city centre, starting in August 2021, and based on a road user charging scheme. This pilot, and any future implementation and expansion, may generate additional need and demand for EV charging for road user groups travelling through or located in the ZEZ.

Recommended Policies

16. The following policies are proposed for the OEVIS and will supported by ‘Key Actions’ which can be seen in the full OEVIS document (**Appendix 1**)

Policy Area	Policy
Targets for EV charging	Policy EVI 1: The Councils will seek to enable and encourage deployment of public EV chargepoints in Oxfordshire towards meeting predicted demand by 2025 in line with national and European directives.
Funding public EV chargers	Policy EVI 2: 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.
Public Charging in local authority car parks	Policy EVI 3: The Councils will seek to achieve an aspirational target of converting 7.5% of local authority managed public car park spaces, to fast or rapid EV charging by 2025.
	Policy EVI 4: The Councils will manage parking bays for EV charging in local authority car park s 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.
Charging at Council sites	Policy EVI 5: The Councils will support staff and visitors to access electric vehicle charging at Council premises where appropriate
Charging without off-road parking	Policy EVI 6: 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 without access to a driveway, prioritising off-street charging hubs, and other solutions which avoid generating additional street clutter or surrounding maintenance and management challenges.
Charging in New Developments	Policy EVI 7: 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.
	Policy EVI 8: The Councils will benchmark nationally, and between themselves, each seeking to set minimum standards for the quantity of EV charging to be provided in developments in their planning requirements.
	Policy EVI 9: The Councils will seek to provide support and guidance on EV charging provision to Town and Parish Councils, and other groups writing Neighbourhood Plans.

EV Charging in Historic Areas	Policy EVI 10: In order to manage the impact of EV chargers 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.
Commercial car parks	Policy EVI 11: The Councils will seek opportunities to encourage organisations, businesses and other owners of commercial and public car parks to deploy public EV charging infrastructure where it is appropriate.
Communal residential car parks	Policy EVI 12: The Councils will seek opportunities to encourage owners and managers of housing stock of all types of tenure to deploy public EV charging infrastructure where it is appropriate.
Workplace Charging	Policy EVI 13: The Councils will explore opportunities to encourage uptake of EV charging at workplaces where it is appropriate.
Rapid charging on strategic roads	Policy EVI 14: The Councils will seek to improve the availability of rapid and super-rapid EV charging on and near the strategic road network and important link roads across Oxfordshire.
Charging standards for Oxon	Policy EVI 15: The Councils will encourage the deployment of a high quality, reliable, open, value for money, and truly instant access EV charging network for Oxfordshire by setting high standards which seek to reach 'above and beyond' minimum legal requirements.
Managing Energy Impacts	Policy EVI 16: 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.
Promoting EVs & Infrastructure	Policy EVI 17: 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.

Communications

17. The public has not been consulted on the EV Infrastructure Strategy – this decision was made by the project board on the basis that the strategy is a technical and operational document, and that broader issues on reducing transport emissions will be consulted on through the LTCP.
18. The strategy has been developed collaboratively with significant subject matter expert input from each of Oxfordshire’s five district and city Councils. External stakeholder groups including parish and town Councils have been engaged, as have the EV charging industry and developers of social housing.
19. A member steering board made up of representatives from each of the councils has been engaged in the development of the strategy:

Name	Council Role
Cllr Yvonne Constance	Oxfordshire County Council Cabinet Member for Environment (including Transport)
Cllr Dan Sames	Cherwell District Council Lead Member for Clean and Green
Cllr Tom Hayes	Oxford City Council Cabinet Member for Zero Carbon Oxford
Cllr Caroline Newton	South Oxfordshire District Council Climate Emergency Advisory Committee Member
Cllr Catherine Webber	Vale of White Horse District Council Cabinet Member for the Climate Emergency and the Environment
Cllr David Harvey	West Oxfordshire District Council Cabinet Member for Climate Change

20. It is planned that the EV Infrastructure Strategy will be promoted as part of the councils’ Climate Action Plans and supporting communications and engagement strategies and plans. It will be important to manage expectations and to align communications to the capacity of the councils to deliver EV infrastructure improvements in Vale.

Options

21. The options are to (a) adopt, or (b) not adopt the strategy.
22. The benefits of adopting the strategy include economies of scale, sharing of expertise and learning, greater access to external funding opportunities and increased viability to engage with the private sector. Working in partnership with the County council is advantageous given their duties with regard to transport.
23. The potential benefit of not adopting the strategy would be the ability to develop an alternative strategy that more precisely addresses the distinct characteristics and needs of our district.

Climate and ecological impact implications

24. Reducing carbon emissions and improving air quality are central to the strategy's purpose and vision.
25. *As stated: Supporting a transition to zero emission road transport is a key component in the Councils achieving their net zero carbon targets. Comprehensive, accessible and efficient charging infrastructure is essential in enabling the rapid adoption of electric vehicles, accelerated by the 2030 date for the end of petrol and diesel car sales in the UK.*
26. It should be noted that the level of life cycle carbon emission reductions of EVs are linked to the decarbonisation of the electricity grids both where the EVs are manufactured and where they are used.
27. There are negative ecological impacts associated with the mining activities to obtain the rare earth elements (REE) like lithium, nickel, cobalt or graphite which are used to produce EV batteries. Lithium mining requires huge amounts of groundwater to pump out brines from drilled wells, and some estimates show that almost two million litres of water are needed to produce one ton of lithium.

About half the world's lithium reserves are in Chile, predominantly in the arid Atacama Plateau, which straddles the border with Argentina and is home to herders worried about the pollution and water shortages that tend to accompany the mining process, as well as the potential damage to sites they consider sacred. According to UNCTAD, the UN Conference on Trade and Development, lithium and other mining activities have consumed 65% of the water, causing groundwater depletion, soil contamination and other forms of environmental degradation, forcing local communities to abandon ancestral settlements.

Nearly 50% of world cobalt reserves are in the Democratic Republic of the Congo, which accounts for over two-thirds of global production of the mineral. About 20% of cobalt sourced from the central African nation comes from artisanal mines, where some 40,000 children work in extremely dangerous conditions, according to UNICEF, the UN's children's agency. Cobalt mine sites may contain sulphur minerals that can generate sulfuric acid when exposed to air and water. This process, known as acid mine drainage, can devastate rivers, streams and aquatic life for hundreds of years.

Both investing more in sustainable mining techniques and technologies that can recycle more effectively the raw materials found in spent lithium-ion batteries and finding ways to reduce the need for mining in the first place are needed. For example, scientists are testing the possibility of replacing graphite in the batteries with widely available silicon.

<https://www.bloomberg.com/graphics/2017-lithium-battery-future/>

<https://unctad.org/news/developing-countries-pay-environmental-cost-electric-car-batteries>

28. The recycling or repurposing, e.g. for use with solar PV systems, of EV batteries is an area that will require increasing attention to minimise waste and pollution and to extend life-cycle benefits.

29. An assessment of the carbon reduction impact of the transition to EV vehicles for the South and Vale districts alongside other changes, including e.g. increases in active travel, will form part of the climate action scenario modelling exercise currently taking place.

Financial implications

30. Any council decision that has financial implications must be made with the knowledge of the council's overarching financial position. For Vale, the position reflected in the council's medium-term financial plan (MTFP) as reported to Full Council in February 2021 showed that the council is due to receive £2.6 million less in revenue funding than it plans to spend in 2021/22 (with the balance coming from reserves including unallocated New Homes Bonus).
31. This funding gap is predicted to increase to over £5 million by 2025/26. As there remains no certainty on future local government funding, following the announcement of a one-year spending review by government, and as the long-term financial consequences of the Coronavirus pandemic remain unknown, this gap could increase further. Every financial decision made needs to be cognisance of the need to eliminate this funding gap in future years.
32. Oxfordshire's councils will use their best endeavours to deliver on the commitments made in the strategy, using existing project funding, future Government funding opportunities and partnerships with the private sector which deliver an EV charging network for Oxfordshire with minimal impact on existing council budgets.
33. Policy EVI 2 sets out the councils' ambitions to seek external grant funding from government, along with private investment to deliver EV charging infrastructure projects and the ongoing management of EV charging. The policy also sets out our ambition to continue our current exploration of self-sustaining business models for EV infrastructure.
34. Project funding for public EV charging from central government is available through two main routes:
- a) The Office for Zero Emission Vehicles (OZEV) ON-street Residential Charging Scheme
 - b) Innovate UK (IUK) EV infrastructure schemes
35. Oxfordshire County Council have had considerable success in winning government funding for EV infrastructure projects from:
- a) IUK – winning over £1.3m funding for the Council over the past 3 years
 - b) OZEV (in partnership with Oxford City Council) winning over £1.2m in 2017
36. Charge Point Operators (CPO) frequently offer investment via a concession model, whereby local authorities can 'host' chargers operated and managed by the CPO at little or no cost to the local authority, while revenue from charging is retained by the operator or shared with the host.
37. The County Council and Oxford City Council have engaged with the private sector to bring in funding for EV infrastructure and charger operation in several projects via similar models in addition to government grant funding.

38. Management of a licensing scheme for on-street EV charging will have budgetary implications which are yet undefined. Our objective in developing the future licensing scheme is to charge a licensing fee to cover the costs of resourcing.
39. EV charging spaces may generate less income for councils than internal combustion engine (ICE) spaces in the short term. A financial model for EV charging in council car parks has been generated and demonstrates that over five years the councils will expect to see usage of spaces and income levels increase. The 5% target for EV charging spaces in council car parks has been consulted on with parking teams and the risk of loss of potential income, and potential for minor additional resourcing requirements in regard to enforcement was considered acceptable at this level.

Legal implications

40. Adoption of the strategy is not considered to raise any significant legal implications.

Risks

41. Risks associated with the adoption and delivery of the strategy have been considered throughout its development. Key risks are summarised as:

Risk	Mitigation
Financial or resourcing constraints mean actions are delayed or not delivered.	<ul style="list-style-type: none"> Discussed under heading 'Financial and Staff Implications'
Ongoing licensing, management and maintenance of EV charging infrastructure generates additional revenue burdens.	<ul style="list-style-type: none"> Discussed under heading 'Financial and Staff Implications'
Parking spaces for EV charging generate less income than ICE spaces in the short term	<ul style="list-style-type: none"> Discussed under heading 'Financial and Staff Implications' para 30.
Councils are liable for incidents involving EV infrastructure	<ul style="list-style-type: none"> Oxfordshire EV Standards will require owners and operators of EV infrastructure to have appropriate public liability and other insurances
Over supply of EV infrastructure, or installation in the wrong places means chargers are not well utilised	<ul style="list-style-type: none"> Analysis of likely demand across Oxfordshire has demonstrated key hotspots where need for support with EV charging and likely early mass uptake intersect and where deployment should be targeted. Ongoing monitoring of demand is recommended during the delivery of EV strategy projects to reduce the risk of over supply
EV chargers do not meet the right standards or are unreliable	<ul style="list-style-type: none"> Oxfordshire EV Standards and the proposed on-street EV charging policy will require all EV infrastructure installed or licensed to; Meet relevant national and international standards, and the higher Oxfordshire Standards designed to ensure reliability and quality.

	<ul style="list-style-type: none"> • Be operated and maintained appropriately by a competent CPO to best practice SLAs.
EV chargers are not 'future-proofed' for advances in technology, assets become obsolete	<ul style="list-style-type: none"> • Councils can avoid investing in technology which is likely to be rapidly replaced by and focussing on enabling market led provision of EV charging. • Strategy promotes concessions and licensing options which leave the charger asset the responsibility and property of the CPO and avoid adoption or ownership of EV charger assets by councils. • The Oxfordshire EV charging standards set out a requirement for CPOs to demonstrate a renewal plan for assets at the end of their useful life.
The high technical and operational standards proposed in the strategy put the industry off investing.	<ul style="list-style-type: none"> • Engagement with the EV charging industry during development has indicated no major challenges arising from the technical and operational standards proposed for EV charging infrastructure in Oxfordshire.

42. Opportunities and Benefits to the council are summarised as:

Opportunities and Benefits
<ul style="list-style-type: none"> • Encouraging drivers to switch from petrol/diesel to EV will benefit local air quality through reduced exhaust emissions of NO_x and help decarbonise transport as energy generation progresses from fossil fuels to renewable sources.
<ul style="list-style-type: none"> • Strategic analysis allows the councils to focus delivery on areas where need for EV charging will be greatest, in particular where other policies and strategies such as the upcoming ZEZ pilot may stimulate increased uptake.
<ul style="list-style-type: none"> • Demand for chargers in Oxfordshire is likely to be higher than other regions
<ul style="list-style-type: none"> • Providing chargers may attract EV users to an area and stimulate nearby shops and the local economy
<ul style="list-style-type: none"> • District Councils' car parks are often located close to businesses and residential properties without off road parking –opportunities to support these with EV charging.
<ul style="list-style-type: none"> • CPOs offer concession contracts for chargers operated and maintained by the operator at little or no cost to local authorities and may provide a revenue opportunity in the future.
<ul style="list-style-type: none"> • A co-ordinated strategy will enable Councils to take better advantage of government funding opportunities for EV charging infrastructure
<ul style="list-style-type: none"> • Increased EV usage will stimulate the EV technology sector in Oxfordshire which has a rich science and engineering base, and strong links with the vehicle industry.

Other implications

43. The EV Infrastructure Strategy will help Vale to identify:

- The opportunities and challenges for the EV charging network in the Vale district
- The likely uptake of EVs across the district and the centres of demand for EV charging
- How we will contribute to and accelerate local deployment of EV charging infrastructure to ensure high quality EV charging is accessible in our county

- A framework of EV charging options for residents without access to private off-road parking
 - Opportunities to work with landowners and businesses to further increase EV charging provision
 - Opportunities to further support the decarbonisation of road transport and manage the impact of EV charging on the grid.
44. While many areas of the Vale district are affluent, and likely to be among the first to see early mass adoption of EVs, there are significant areas of where income is low. Lower income households are often disproportionately affected by poor air quality, and also the sector of society least able to adopt EVs early. There may be a perception of unfairness in access to EV charging if chargers are only installed in wealthy areas where people have been able to afford brand new technology.
45. While the council is limited in the actions it can take to support low income households with the purchase of EVs, the second hand EV market is growing, providing more people with access to electric vehicles. The strategy enables the council to take a strategic approach to delivering EV charging based on likely future need, rather than consumer demand from more affluent early adopters of EVs. This will allow steps to be taken to ensure equitable access to EV charging. Car club vehicles may also provide a more affordable alternative to private EV ownership, with the potential to give wider access to EVs, and support reductions in private vehicle ownership in line with the aims of Connecting Oxfordshire. Electric car clubs and the chargers needed to power them are therefore included as a valuable measure to improve social inclusion in Oxfordshire's EV ready future.
46. The strategy sets out the approach to supporting drivers without off-street parking, while prioritising those solutions which avoid installing infrastructure on the pedestrian footway, and where that is not possible selecting options which avoid or minimise obstructions for pedestrians and consider inclusive mobility.

Conclusion

47. Cabinet is invited to adopt the Oxfordshire EV Infrastructure Strategy.
48. Cabinet is further invited to consider a recommendation to support measures that would reduce the negative environmental impacts of EV battery production, through for example, responding to any relevant government consultations and backing research and innovation in new technologies.

Appendix 1

Draft Oxfordshire Electric Vehicle Infrastructure Strategy 2020-2025.