EVs

ELECTRIC VEHICLES by REA

RENEWABLE ENERGY ASSOCIATION

TAKING CHARGE:

How Local Authorities can champion electric vehicles

A guide to tax, grants, and good practice for local government, developers, and individuals

An REA publication sponsored by Alfa Power
June 2018

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RENEWABLE ENERGY ASSOCIATION

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EXECUTIVE SUMMARY

The Government's announcement of the ban of the sale of new purely diesel or petrol cars and vans by 2040 is a milestone event in the history of electric vehicles (EVs) in Britain. The UK ban, announced in summer 2017, comes amid record breaking electric car sales with all manufacturers bringing new EVs to the market over the next 2 years and strong forecasts for rapid future sales growth. This growth is significantly ahead of UK Government predictions only 2 years ago hence the speed of the changeover of transport.

Some in the industry believe car manufacturers could well be aiming to stop diesel car production by 2023 and petrol before 2030, well ahead of Government policy. Whether its 2023, 25, or 27, one thing is clear EVs are here to stay and all stakeholders need to have plans to cater for rapidly rising numbers in our towns and cities across the globe.

While the drivers may be global, the impacts will be local and UK Local Authorities will be on the front lines of managing this change. The expectation that a reliable, accessible, and affordable charging infrastructure will be in place is, in the eyes of much of the public, the responsibility of local government. We believe that councils need to be well prepared for this historic shift in transportation and look to benefit from the opportunities this will bring.

Much of the charging of EVs will happen at home or at daytime place of work, but those who park in streets will also need access to charging points within the towns and cities. Longer journeys will require EV charging stations at motorway and trunk road service stations. Councils could operate the charging infrastructure which will provide them with long term revenue, much in the same way that the oil companies built their fortunes with the support of a petrol station network in the past. To gain the full benefits of EVs the electricity used to charge the vehicles must be clean and that means from renewable sources.

Understanding the requirements of EVs, the anticipated growth, charging systems, payment and funding mechanisms, as well as learnings from best practice both in the UK and overseas is key to providing the solution and allowing Local Authorities (LA) to plan and roll-out solutions. This guide is designed to ensure Local Authorities are equipped to understand the support that is available to them and to seize the opportunities

Is your Local Authority ready for the challenge?

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INTRODUCTION

Demand for electric cars reached a record high in 2017 as almost 120,000 alternatively-fuelled vehicles were registered for UK roads, a nearly 35% increase on the previous year, according to the SMMT[1]. Currently, across the UK there are over 13,500 charge point connections and the UK has the largest rapid charge point network in Europe. However, research carried out by Ipsos MORI has shown that one of the main deterrents to owning an electric vehicle is the lack of charge points available. The UK is currently third in the 'Electric Car Index' ranking behind only France and Norway[2] in Europe. This highlights the good progress made in the UK to date, but also indicates that there is potential for more to be done, particularly as the Committee on Climate Change (CCC) estimates that by 2030, 60% of new car and van sales will need to be EVs and that they should make up 30% of the fleet to meet the UK's Carbon Budgets. This is a major shift in the history of our transportation system with significant impacts and opportunities for local government.

The UK is going to need an affordable, accessible, and reliable charging network that includes home, workplace, on-street, destination, and ultra-rapid chargers along major motorways. This is in addition to privately-owned charging hubs for fleets.

The creation of such a network is absolutely within reach. CCC commissioned analysis found that only a small increase in publically accessible rapid chargers are needed along major motorways, for example, from 460 in 2016 to 1,170 in 2030. This was due to the significant improvements to EV range that should occur over the next decade, and the fact that unlike refuelling at a petrol station, rapid charging along a motorway is but one of a mosaic of means to recharge your car - with home charging expected to be the backbone of EV fuelling.

Changing technology and charging habits are highlighted by the fact that in 2016, 27% of journeys required a charge on route, but by 2030 it is expected that this number will be less than 1%. According to the CCC, the additional infrastructure needed includes an extra 25,000 public non-rapid chargers by 2030 to match the increase in demand. The analysis found that these chargers, with a mix of private and public money, would cost around £530m, with additional costs associated with power grid upgrades.

In this report information about tax grants and incentive schemes available from the Government in the UK are summarised. The schemes include those set up for the public to install charge points at home or receive money off the upfront price of an EV, others are set up for local authorities to both install charge points and incentivise EV use, and for private businesses to install charge points for staff. The report then identifies certain regions of the UK which have been particularly successful at improving EV charging infrastructure and promoting EV uptake. These regions will then be analysed to find out why they have been successful and look at their most effective schemes.

Following this analysis the report concludes with concise and clear actions that Local Authorities can take to encourage EV uptake, including the development of an 'EV Plan' which lays out resources and a strategy for which initiatives to take.

1 Current Grants Provided

1.1 Electric Vehicle Homecharge Scheme (EVHS)

Evidence from the Go Ultra Low campaign suggests that 90% of EV charging occurs at home. This is corroborated by preliminary data from the Electric Nation project which indicates that in their trial of 700 EV drivers, 87% of charging occurs at home (with 8% at work, 4% at service stations, and 1% at destinations such as shopping centres). This is partially due to convenience and partially due to a not fully developed public charging network infrastructure across the UK. This evidence shows that the cost of charging at home needs to be kept low to encourage the use of EVs. Therefore the Office for Low Emission Vehicles (OLEV) introduced the 'Electric Vehicle Homecharge Scheme (EVHS)' in April 2015. This scheme provides individuals with a grant which is a 75% contribution towards the cost of a charge point up to a maximum of £500 for each household/individual vehicle.

Eligibility
The grant can only be claimed by authorised installers from an approved charge point manufacturer to install their accredited equipment. The date of installation must not be more than 4 months ahead of the date of delivery or start date of vehicle use. EVHS is limited to one installation at a domestic residence per eligible vehicle, up to a maximum of two charge points at a single residence. 3-pin socket installations are not eligible.

Only individuals who can prove that they have ordered an eligible EV and the vehicle was received on or after 1st April 2015 are eligible. The scheme is also eligible for people who are assigned a company car for at least 6 months and individuals who lease a vehicle as part of a salary sacrifice scheme. Customers must provide evidence of keepership, lease, be named as the primary user of an eligible EV or have a vehicle on order in order to be able to qualify for the grant. The vehicle cannot be borrowed, hired or leased for less than 6 months and the residence must have off-street parking and must be in the UK.

In Scotland there is more support through the Energy Saving Trust (EST). They provide an extra £500 on top of OLEV's £500 grant. The list of approved installers is shorter however, and still has to be one of OLEVs approved vehicles. This extra grant is provided on a first come first serve basis.

A full list of eligible vehicles can be found at:
https://www.gov.uk/government/publications/electric-vehicle-homecharge-scheme-eligible-vehicles

A full list of eligible installers can be found at:
https://www.gov.uk/government/publications/electric-vehicle-homecharge-scheme-authorised-installers

Issues
REA and member analysis indicates that while the scheme is overwhelmingly successful several issues have arisen, including companies who have experienced delays in receiving OLEV grants several months after installation was complete.

1.2 On-Street Residential Chargepoint Grant Scheme (ORS)

Introduction

From January 2017 LAs were invited to submit applications for the On-Street Residential Chargepoint Grant Scheme (ORS). The scheme aims to increase the availability of charging points on the street where off-street parking is not available. Currently the EVHS provides support for individuals who have off-street parking. The ORS, however, provides individuals without off-street parking the opportunity to realise the benefits of owning an EV. The Energy Saving Trust (EST) is administering the scheme.

Funding

Up to the 31st March 2020 £4.5 million of funding is available to local authorities. OLEV allocated £2.5 million for 2016/17 and 2017/18, £2 million for 2018/19 and £2.5 million for 2019/20. The funding is available for 75% of the capital costs of procuring and installing the charge point and an associated parking bay. The local authorities need to prove that they can source the other 25% through other means.

The maximum amount of funding available per charge point is £7,500; however most charge points should be significantly cheaper than that. The project management and estimation of costs is solely the local authority's responsibility. The items that are eligible to claim for include; the cost of a charging unit, the cost of electrical components relating to the charge point, the civil engineering costs relating to the installation and the hardware costs of installation. The funding limit per project is capped at £100,000 and is paid in arrears.

Eligibility

To claim the funding the Local Authorities must be based in the UK and must have secured explicit support from the relevant highways agency prior to applying for the grant. Applications from multiple authorities joined together can be made. The funding is available on a first come first served basis. Other eligibility criteria are listed below:

- The charge points must be in residential areas
- They must be areas without off-street parking
- The proposed infrastructure must meet current/future demand as planned
- Accessible to local residents
    - Residential parking permits
    - Potentially arranging a dedicated bay
    - Must be added to National Charge point Registry (NCR)
- Adhere to OLEVs technical specifications
- Delivery should take 3-6 months from making an application to installing and commissioning the charge points

Implementation - issues

It has been reported that only 5 councils across the UK have taken advantage of the ORS[3] (as of 15th January 2018). The scheme was introduced in 2016 and therefore this has been described as a relatively disappointing uptake. This means that there is around £4.5 million still available in funding which could pay for thousands of new installation points.

Implementation - case study of the North East Combined Authority

The North East Combined Authority brings together 7 councils; County Durham, Gateshead, Newcastle, North Tyneside, Northumberland, South Tyneside, and Sunderland. This combined authority won funding from OLEV via the ORS. To implement the funding the combined authority targeted areas based on previous EV sales. The chosen area for implementation was Gosforth.

Two locations were chosen for a trial, the results of these trials are laid out in Table 1. As can be seen in the table the High Street was the more popular location. The trial also concluded that even at the high street location the charge points were being used by the same people indicating that the users were residents. The differing transaction times indicate that people are more wary of spending too long charging at the high street location, or that they do their activities around the high street while the vehicle charges.

The North East Combined Authority intends to install over 500 charge points.

Table 1 - Two sites trialled at Gosforth

Site	Location Description	Transactions per month	Transaction time	Average power drawn per transaction (KWh)	Distribution across the day
High Street	Local car park but within residential area	85	2hrs 40	5.63	70% Days 6% Evenings 24% Nights
The Grove	Residential area 5 minutes from High Street	11.5	5hrs	8.49	72% Days 22% Evenings 6% Nights

1.3 Plug in Car Grant (PiCG)

The plug in car grant (PiCG) is a £100 million pledge from OLEV to offer grants at the point of purchase on selected EVs until 2020. The original grant was set up in 2011 and offered £5,000 for all eligible vehicles. The scheme has now been changed to offer variable grants on different categories of EVs up to £4,500. The UK Budget in November 2017 then extended the grant with another £100 million. Table 2 shows the different categories of vehicles and the grants that are offered.

The grant has been a major driver of EV sales to date in the UK.

Table 2 - Categories of vehicles eligible for PiCG

Category	Requirements	Grant
Category 1	• CO_2 emissions of less than 50g/km • Travel at least 112km (70 miles) without any CO_2 emissions.	• 35% of the purchase price • Maximum of £4,500.
Category 2*	• CO_2 emissions of less than 50g/km • Travel at least 16km (10 miles) without any CO_2 emissions.	• 35% of the purchase price • Maximum of £2,500.
Category 3	• CO_2 emissions of 50 to 75g/km • Travel at least 32km (20 miles) without any CO_2 emissions	• 35% of the purchase price • Maximum of £2,500.
Motorcycles	• No CO_2 emissions • Travel at least 50km (31 miles) between charges	• 25% of the purchase price • Maximum of £1,500.
Mopeds	• No CO_2 emissions • Travel at least 30km (19 miles) between charges	• 25% of the purchase price • Maximum of £1,500
Vans	• CO_2 emissions of less than 75g/km • Travel at least 16km (10 miles) without any CO_2 emissions	• 20% of the purchase price • Maximum of £8,000.

*Category 2 cars which are over £60,000 in value are not eligible

1.4 Workplace Charging Scheme (WCS)

The Workplace Charging Scheme (WCS) was introduced in November 2016 by OLEV.

The WCS is a £7.5 million voucher-based scheme to fund 25,000 charge points across the UK. The fund is open to businesses, charities and public sector organisations.

The grant is designed to provide eligible applicants with the upfront costs of the purchase and installation of charge points. The contribution per charge point is limited to £300 with a maximum of 20 charge points per application. The administrator of this scheme is the Driver and Vehicle Licencing Agency (DVLA). If applicants are successful they are issued with a voucher via e-mail which is valid for up to 4 months. Authorised installers must submit the grant claim before midnight of the expiry date of the voucher.

The process for applying is laid out in Figure 1 on the next page.

Figure 1 - Process of applying to and receiving the WCS (OLEV Guidance Report)

Eligibility

The applicant must be a registered business, charity, or public sector organisation and must be located in England, Wales, Scotland or Northern Ireland. The applicant must have dedicated off-street parking and either own the property of have written consent from the landlord. The applicant must also declare either the need for EV charging equipment or the intent to encourage staff to take up EV use. The site must have a minimum power supply of 3kW to each individual socket that is not diminished by their simultaneous use; have no more than one socket installed for each accessible parking space be and solely for staff and/or fleet use. Parking facilities which are for customers are currently not eligible. The applicant must maintain the charge points for at least three years and this must be matched by a three year warranty from installers.

1.5 Go Ultra Low Cities

Introduction

In January 2016 four cities were awarded funding from OLEV. The fund consisted of £40 million for a 'green car revolution'. Cities won the funding through a competitive bidding process. The grant is administered by 'Go Ultra Low' which is a jointly funded partnership between the Government and several major car manufacturers.

The aim of this is to explain the benefits of ultra-low emission vehicles (ULEVs) to drivers and fleets and to improve the EV infrastructure in the winning cities. The key criteria in winning the fund was a step change in ULEV uptake, being an exemplar city, improving air quality, innovation, linking with other schemes and monitoring the scheme. Two examples were provided in the guidance documents; firstly in Oslo, Norway where local incentives have been a key factor in an uptake of ULEVs. ULEVs are allowed to drive in the bus lanes and easy access to dedicated parking spaces has been provided. Secondly in Paris, 2,200 EVs and 4,300 charging stations were provided as part of an EV sharing scheme.

For the 'Go Ultra Low Cities' scheme cities were allowed to implement measures as they chose. The four winning cities were London, Milton Keynes, Bristol, and Nottinghamshire and Derby together. Dundee, Oxford, York and the North East region were also set aside £5 million of the funding.

Figure 2 opposite, highlights some suggestions from OLEV of the schemes which could have been proposed.

Soft Measures:	Supporting Infrastructure:	Community Measures:
* Bus lane access for ULEVs * Free, preferential or discounted parking for ULEVs * Low emission zones	* Increasing publically accessable chargepoints * Changing chargepoint requirements in local planning rules * Demonstrate strategic thought on grid impact * On-street charging for local residents without off-street parking	* EV car clubs * Communications / PR initiatives
Innovation:	**Partnerships with the private sector:**	**Communications:**
* Trials of future technology, such as dynamic charging * Plans for hydrogen infrastructure * R&D * Geofencing	* Rate rebates * Park and Ride initiatives * Workplace chargepoints * Match funding	* Events to share learning with other local authorities * Investment in training / skills in auto-manufacturing areas

Figure 2 - Suggestions of schemes that could have been included from the guidance document provided by OLEV.

Winning Cities in the Go Ultra Low Cities Programme

City	Proposals
London	• Awarded £13 million to create 'Neighbourhoods of the future' prioritising ultra-low emission vehicles (ULEVs) in several boroughs: o Hackney - Car charging street lighting and more infrastructure o Harrow - Development of a low emission zone, parking and traffic priority for ULEVs o Westminster - Already free parking for ULEVs, aim for 70,000 by 2020 & 250,000 by 2025
Milton Keynes	• £9 million to open a city centre EV Experience Centre - a 'one stop shop' providing consumer advice and short-term vehicles loans • Proposal to have free EV parking in all 20,000 parking bays • Open bus lanes to EVs and the same priority at traffic lights
Bristol	• £7m to offer free parking for ULEVs • Access to carpool lanes • 80 rapid and fast chargers • Leasing EVs for up to 4 weeks to show the benefits
Nottingham and Derby	• £6 million to install 230 charge points and offer ULEV owners discount parking and access to over 13 miles of bus lanes along key routes across the city • Try before you buy offer to businesses

Implementation

City **Implimentation**

Milton Keynes

- EV innovation hub opened August 2017
    - Offering test drives and a showroom for EV cars
- First electric charging points have now been installed as part of the project
- Four chargemaster 7kw charge at Carlton Packaging
- Chargemaster contract £2.3m
    - 50 public chargers
    - 200 onstreet charging units
    - 30 bays for electric car club vehicles
    - 2 EV charging hubs in the centre of MK
- 15,000 free parking spaces for EV cars

Nottingham

- Chargemaster have won the contract to install charging points in Nottingham, Nottinghamshire and Derby over the next 3 years
- Around 230 points to be installed

London

- 25 of 32 boroughs chosen
- £300,000 for each borough
- The Greater London Authority (GLA) and Transport for London (TfL) have allocated £4.5m to 25 London boroughs to roll-out 1,500 new charging points for EVs across the capital
- Wandsworth to install at least 50 charging points in street lighting columns and a further five free-standing charging points.
- Funded by the scheme (£187,500) and Wandsworth (£62,500)
- Streetlights to be trialled as EV chargers in Kensington and Chelsea

Oxford

- Install 100 EV charging points
- £800,000 grant from OLEV for this as part of the go ultra-low funding
- Pilot phase will install 30 points
    - 10 for individual homes
    - 10 for public
    - 10 for co wheels car club - part of a pay as you go low emission scheme
    - Electricity to come from renewable energy company 'Good Energy'

1.6 Other Tax Benefits

OLEV also announced that drivers of ultra-low emission vehicles (ULEVs) will receive a number of tax benefits, for both private and business users. A ULEV is defined as a vehicle which emits less that 75g of CO_2 for every kilometre travelled.

Table 3 opposite, describes the various tax breaks which are available and whether it is available to private users, businesses or both.

Table 3 - The various tax benefits offered to businesses and private users of ULEVs

Tax Breaks - Private and Business users	Description
Fuel Duty	Electricity is not subject to fuel duty, the current rate of fuel duty tax is 57.95 pence per litre.
Vehicle Exercise Duty (VED)	All vehicles pay VED dependent on gas emissions, any car under 100g/km CO_2 emissions will pay £0. Zero emission vehicles registered after April 2017 will pay £0 in the first year and the flat rate of £140 per year after.
Value Added Tax (VAT)	Regardless of emissions 20% VAT is paid on vehicles. Through the PiGC this VAT is covered however.
Tax Breaks - Business users only	**Description**
Taxation of Company Cars (CCT)	Provision of a vehicle by a business is treated as a Benefit in Kind (BIK) and therefore is subject to income tax. CCT varies based on the emissions of the vehicle.
Salary sacrifice for the provision of Benefit in Kind	If ULEVs are purchased through a salary sacrifice programme than they are eligible for tax benefits. In 2020/21 Benefit in Kind rates will fall from 16% to 2%.
Car Fuel Benefit Charge	The car benefit fuel charge is not applied to electric charging. Usually this is paid by employees who receive free fuel from employers and use it for personal use.
Van Benefit Charge	A flat rate of £3,230 is charged is levied when a van is provided to an employee for private use. The employee pays income tax on this. Zero emission vans currently only pay 20% of this charge.
Van Fuel Benefit Charge	A flat rate of £610 is currently charged, however as electricity is not treated as a fuel zero emission vans are exempt from this.
Advisory Fuel Rates (AFRs)	Employees reimburse fuel used for private consumption via AFRs. These do not apply to EVs.
Enhanced Capital Allowances (ECAs)	'An ECA allows a business to write off the whole cost of an asset against taxable profits in the year of purchase'. Any car with less than 75g/km CO_2 emissions qualifies for a 100% first year allowance (FYA). Vans are not eligible for the PiGV and the FYA.
Approved Mileage Allowance Payment (AMAPs)	For vehicles owned by the employee but used for business mileage. HMRC provide pence per mile rate which allows employers to reimburse the employee without liability to income tax. EVs are treated the same as other vehicles.
Mileage Allowance Relief (MAR)	Employees not benefitting from AMAPs who own an electric car are allowed to apply for MARs.

2 Bills and Directives

2.1 Automated and Electric Vehicles Bill

As of May 2018 the Bill is unamended and has completed Committee stage in the House of Lords. The first half of the Bill is based around autonomous vehicles and the liability of insurers. For EVs, definitions for 'charge point', 'hydrogen refuelling point', and 'operator' are agreed.

The Bill states that regulations may be enforced on operators of public charging points in terms of payment and the components. This is important as payment methods will need to be standardised if a successful roll-out of EV infrastructure is to be realised.

Charge points may have to cater for different types of electric car so enforcing regulations on the components e.g. the plug and socket vehicle/charger, would remove the chance of operators setting up points solely for one type of manufacturer.

Regulations may also be imposed on large fuel retailers or service area operators to install public charge points.

The Bill also gives power to government to impose regulations relating to the 'smartness' of charge points, implying that they will be able to reduce their power draw when necessary.

The operators may also have to provide information about the charge points including but not limited to; the location point, operating hours, method of payment, whether the point is in working order and means of connection to the point.

The seller or installer of a charge point must also adhere to regulations which may relate to, providing information about the point, monitoring the point and storing the data, to comply with security requirements and others. Penalties can be enforced if regulations aren't adhered to however there can be exceptions in certain circumstances.

2.2 EU Alternative Fuels Infrustructure Directive - AFID

On 22nd October 2014 the European Parliament introduced the Alternative Fuels Infrastructure Directive. A Directive from the EU requires member states to achieve the result of the Directive but does not state how the member state should manage it. The aim of this Directive is to enhance competition, improve energy security with a more efficient use of energy and resources.

In relation to EVs in the UK, the Directive has now been transposed into UK law and requires that public charging networks are "ad-hoc" accessible by the 1st of November 2018. All new public charging points from the 1st November 2017 must also be "ad-hoc" accessible. This will mean that companies can no longer offer 'subscription only' access on public networks. This is an important step forward towards the development of a more interoperable public charging system.

The Directive states that member countries should ensure that there are an adequate number of charge points for densely populated areas, which are accessible to the public.

Whilst the technology is growing fast, the Directive states that members should keep innovating and looking for step-change improvements, i.e. researching wireless charging and battery swapping. The charging of EVs should make use of intelligent metering systems which can limit the instability of the electricity system. At charging stations where fuel prices are shown, not only should the price of electricity be highlighted but equivalence between the different fuels should be made.

EU Funding and the AFID
Funding from the European Union is available for new technologies or innovation which contributes to the decarbonisation of the transport industry. A framework programme called Horizon 2020 is also available to support research and innovation for alternative fuel transport and the related infrastructure.

3 Local Authority and Devolved Government Examples

Introduction

This section is informed by informal and formal primary research in addition to secondary research.

Local Authorities have a mixed record on promoting and improving EV infrastructure. Policy uncertainty and significant budget cuts from central Government have curtailed the amount of time and money many LAs require to improve the infrastructure to a level needed to drive EV growth. Many authorities are relatively risk averse and are potentially hesitant to invest in long term technologies in place of short term plans which may be conceived to be 'safer bets'.

Many LAs have bought EVs to add to their own fleet. However, there is a wide range in the number of EVs bought for fleets and the effectiveness of their use. For example, in one council, due to lack of training and availability of charging points, two council employees ran out of charge. After this other employees were not willing to use the EVs.

On the other hand, many councils and LAs are taking major steps to improve their EV infrastructure and encouraging the uptake of EVs. Examples of this include Lancashire installing 100 charge points, Lewisham starting a pilot study into EV infrastructure and Falkirk installing a 'charge hub' next to the football ground.

With LAs adding EVs to their fleet there is a huge potential to build depots with an extensive charging infrastructure. If there are either solar panels or wind turbines installed at the depot, particularly when also combined with an energy storage technology (see the BRE Solar Carpark Guide for further information) then there will be less demand on the grid and the council or LA can get a return on their investment by charging a small fee to the public to use the charge points.

3.1 Oxfordshire

The basis for encouraging the uptake of EVs in Oxfordshire is laid out in the 'Air Quality Action Plan', the 'Low Emission Strategy' and 'Low Carbon Oxford'. The 'Air Quality Action Plan' published in December 2013 declared that Oxford would not meet the targets for air quality in certain areas. Therefore the council was duty bound to prepare a written plan to achieve the targets in all areas. Pollution from transport was identified as one of the key issues that needed solving within the city.

One effective measure that the council created was a 'Low Emission Zone (LEZ)' in the city centre. This included moving bus stops, reducing the number of buses in the city centre and changing some of the fleet to hybrids.

The 'Air Quality Plan' was developed alongside the Local Transport Plan which aims to reduce the amount of emissions from the transport network in Oxfordshire. One of the key themes of the plan was to 'Support the uptake of low and zero emission vehicles'. To encourage uptake the council planned to improve the infrastructure by installing charging points, continue to invest in ULEVS for the Council's own fleet, promote low emission car clubs, and work with taxi companies to reduce emissions and more.

As of January 2018, the Oxfordshire City Council website currently lists 8 council owned charge points which are operated by the POLAR network. North Oxford E-car club currently charges £4.50 an hour including insurance and power. The cars are available 24/7, 365 days a year and are placed in convenient locations. The range for the north Oxford car is 75 miles which is sufficient for local journeys. The car is based in a secure car park next to a leisure centre.

In the future the LEZ that is proposed will start in 2020 with banning non-zero emitting vehicles on a few

streets in the centre. By 2035 the plan is to ban all non-EVs from the city centre in the creation of a 'zero-emission zone'[4]. The introduction of this zone could see Nitrous Oxide (NO2) air pollution fall by in some areas up to 75% by 2035. To support this zone £800,000 funding from OLEV is being used to install 100 charge points for residents and £500,000 for charge points for taxis[5]. The council also owns 17 EVs, 9 electric bikes and 22 hybrid vehicles which are reportedly popular with employees.

REA analysis indicates that to improve uptake of EVs there must be more visibility in any improvements to infrastructure. Individuals and businesses will check the council website to see whether there are any pending developments which will incentivise them to buy. As of January 2018 there was no mention on the Oxfordshire county council website of any planned improvements to EV infrastructure, despite a significant amount of new development taking place.

Despite the lack of information on the Oxfordshire county council website there is significantly more on the Oxford City Council website. A whole section of the website under Environment is dedicated to EVs. Consistent clarity around the location and pipeline of charging infrastructure is crucial if mass EV adoption is to be achieved, and we would recommend replicating such data to the Oxfordshire County Council website. Alternatively/additionally charge point locations should be integrated into the ZapMap API.

3.2 Manchester

2017 was a significant year for transport in Greater Manchester, with Andy Burnham elected as the first mayor with a focus on transport and The Greater Manchester Transport Strategy for 2040 being published.

The principal aim of the strategy is to shift journeys Into sustainable modes of public transport by improving, train, tram, cycling, and walking with an understanding that highway travel will remain important. The aim is to move to an emissions-free smaller vehicle fleet and to work with heavy vehicles to try and increase the number of electric heavy goods vehicles, as well as increase the number of other alternatively-fuelled vehicles (such as biomethane or hydrogen-powered).

Manchester is one of the leading Local Authorities in promoting the uptake of EVs. The council has some of the most ambitious targets and is promoting and funding pilot projects. The 'Green Summit' for Manchester in March 2018 proposed a series of significant policies, including "radical proposals that include building zero carbon homes, an emissions-free bus fleet, doubling the provision of charging points for electric vehicles, a Greater Manchester energy company, and a plastic-free city-region campaign.[6]"

Greater Manchester is also highlighting a new model (which is presently in the early stages of development) called SCATTER. The 'Setting City Area Targets and Trajectories for Emission Reduction' model will be a UK wide Greenhouse Gas (GHG) modelling tool to assess interventions which have been adopted. The tool will give a 'high level, intervention specific, indication of relative social and economic impacts' which will inform policy and decision making within Local Authorities including EV infrastructure schemes.

Greater Manchester Electric Vehicles (GMEV) is a programme led by Transport for Greater Manchester (TfGM). The aim of the programme is to create an effective EV charge point network across Greater Manchester. For transparency a comprehensive map has been produced with all the charge point locations across Greater Manchester, including the type of charge point and the power output. The charge points are also integrated into the 'Charge Your Car' app. This app has an extensive list of publically accessible charge points across the UK, with information about the type of point, the power output, whether they are in use, and whether the point is in service. The app also acts as a 'pay as you go' scheme. The GMEV access card can also be used to pay for top ups from any charge points on the scheme, not limited just to Greater Manchester.

Ensuring national funding is allocated across the regions

Criticism of the Go Ultra Low Funding scheme has come from the head of innovation at TfGM[7]. It was claimed that the funding, with the exception of London, had left larger cities further behind in developing EV infrastructure. A strategic national plan to be developed alongside the tax breaks and grants which are provided has been suggested by various parties from Manchester. This, they argue, would help smaller cities instigate their ambitious plans whilst allowing larger cities to continue to try increase the EV charging infrastructure. The potential of larger cities to increase the number of EVs is high and therefore needs support to propel the industry.

Other schemes set up in Manchester include:

- On the 22nd September 2017 Manchester introduced its first electric bus.
- In November 2017, to increase the understanding of the advantages of EVs and to showcase the range of vehicles that are available Manchester held a two day event. It was aimed at potential drivers, SMEs and stakeholders.
- Over 300 charge points are currently in operation across Greater Manchester.

3.3 Scotland

A Scotland plug in vehicle report published in 2013 envisaged that by 2050 cities in Scotland would not have any petrol or diesel cars. Since then Nicola Sturgeon has announced that by 2032 the sale of new diesel or petrol cars will be phased out. This compares to a nationwide target of 2040 for the phase out of 'conventional' new petrol and diesel car and van sales, which was announced by the Environment Secretary Michael Gove in July 2017.

Transport is a devolved power in Scotland and many initiatives are run or coordinated by Transport Scotland.

Ownership and use of EVs has been growing fast in Scotland. In August 2017, public charge points across the country were used 37,433 times, compared to 26,119 times the year before, a 43% increase (according to the RAC Foundation). The commitment to EV infrastructure in Scotland has been highlighted by recent news that at a new housing development near Perth where all 3,000 houses will have EV charging infrastructure[8].

In June 2017 the 'Switched on Scotland Phase Two: An Action Plan for Growth' was published by Transport for Scotland. The plan was published on the back of the 'Cleaner Air for Scotland', the 'Draft Climate Change Plan' and the 'Draft Scottish Energy Strategy'. The plan focusses on the 2017-2020 period which is envisaged to be a period of growth and increased uptake of EVs (Figure 3, overleaf). Some key incentives which put Scotland ahead of the rest of the UK include business loans which are available up to £100,000 for businesses (£35,000 for cars and vans and up to £10,000 for motorcycles and scooters). Up to £100,000 to replace black cabs which are over 8 years old, with interest free loans once the new ultra-low emission taxi is commercially available.

Additionally, an interest free £35,000 EV loan for consumers and up to £10,000 to cover the cost of a new electric motorbike or scooter. The EVHS scheme is also topped by up £500 if the EV is eligible. All these schemes are being administered by the Energy Savings Trust.

The June 2017 Action for Growth published contains 10 focussed actions for the 2017-2020 time period.

These 10 actions collectively aim to deliver three impacts:

- Reducing the cost of owning and driving an EV;
- Making EVs a convenient fit with the needs and lifestyles of drivers; and
- Promoting a change in culture whereby EVs are widely recognised as a preferred alternative to fossil fuelled vehicles.

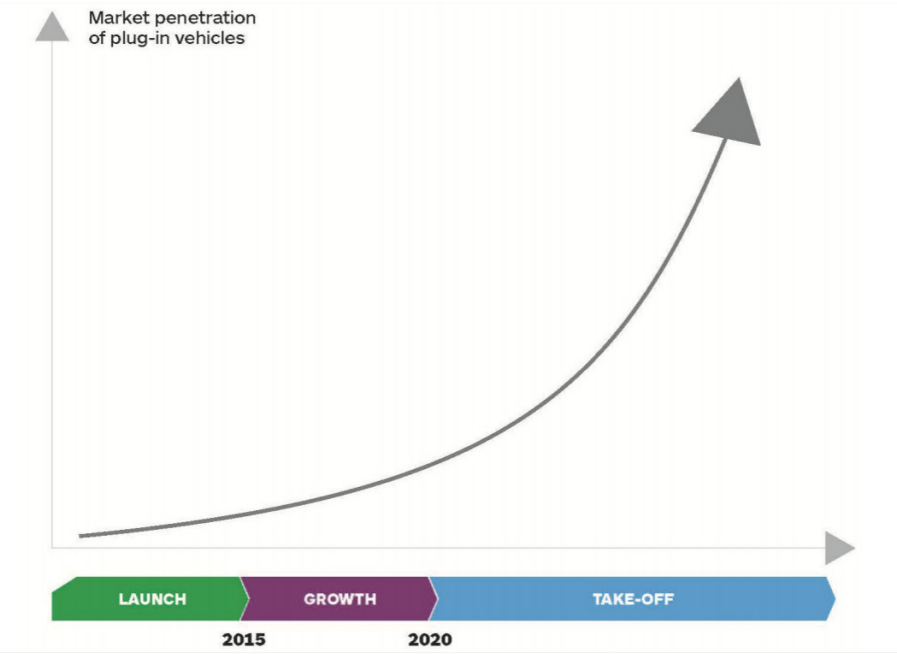

Figure 3 - Three phases of market penetration of EVs (Switched On Scotland Phase Two: An Action Plan For Growth)

Generally speaking, schemes in Scotland are split into three categories:

1. Business and Operating models
   - Vehicle and battery leasing
   - Parking services
   - Energy storage
   - Car clubs etc.
2. Technologies
   - Wireless charging
   - Smart ticketing
   - Mapping and journey planning
   - Real-time availability etc.
3. Incentives
   - Access to bus lanes
   - Low emission zones
   - Preferential parking etc.

Some examples of the progress that has been made to date:

- At the beginning of 2017 there were over 600 publicly available charge points (equating to over 1,200 charging bays). This includes over 150 publically available 'rapid' charge points.
  - The network of EV charge points is funded by Transport Scotland and run by ChargePlace Scotland.
- The Energy Saving Trust (EST) has invested £3.7 million of funding from Transport for Scotland to support the installation of charge points at over 1100 homes and around 350 workplaces.
- Further investment has provided 350 new EVs for public sector
- The Scottish Green Bus fund has invested £14.8m of funding to introduce 315 low carbon buses.
- EVs are now incorporated into the majority of local transport strategies, energy strategies and clean air plans.
- Charge Your Car
  - In August 2016, Charge Your Car was appointed as the operator of the ChargePlace network in Scotland. In the contract they committed to provide 24/7 telephone helpdesk and an improved customer service interface, dedicated social media platforms, an enhanced problem management system and a dedicated ChargePlace Operations Manager based in Scotland.

- Car Clubs in Scotland Programme
    - Set up by Transport for Scotland in 2016 and run by Carplus. The programme had already supported the introduction of 82 EVs to car clubs which was more than the rest of the UK combined at that time. Investment to provide charge points at hubs for multi-modal journeys including installations at Park & Ride sites and 11 ferry sites has also been provided.
    - As part of the ScotRail franchise agreement, Abellio and ScotRail are committed to providing charging facilities at 50 stations across Scotland by the end of 2017.
- The Low Carbon Travel and Transport Pre-Application Support Fund
    - Transport for Scotland provided £332,000 in 2016/17 to 32 public and private sector organisations to review opportunities to deploy low carbon travel and transport hubs.
- The Switched On @Work programme
    - Set up by the EST in 2016 to encourage employers to highlight the benefits offered by EVs and to generate evidence to better understand future demand for EV charging at workplaces.
- Dundee
    - Dundee received £1.86m from Go Ultra Low cities scheme
    - By May 2017 taxi firm, '203020', reported that its drivers were saving between £120 and £130 a week on fuel and had driven over 2.5 million electric miles.
    - In May 2017, the Council had 83 EVs in its fleet that had driven over 1 million miles and compared to diesel vehicles had delivered an estimated 70% saving on fuel costs.
    - In April 2018 Dundee additionally opened a £330,000 charging hub with four 50kw and three 22kw chargers for use by the public and the taxi sectors, funded by the Go Ultra Low Cities project.

The 10 forward actions plans for Scotland are listed below:

1. Improve Public charging infrastructure
    - Keep investing until at least August 2019, whilst looking at ways to encourage private sector investment.
    - Further support for investment at private sites, including workplace, taxis, leisure facilities etc.
2. Provide financial support for purchasing EVs and installation of private infrastructure.
    - Interest free loans up to £35,000 towards cost of purchasing a new EV
        - All through EST
3. Work with partners on procurement approaches that encourage investment in EVs
    - Work with partners on increasing public, private and third party investment
4. Continue to work with partners to promote EVs as an alternative to fossil fuelled vehicles.
    - Education and transparency about the advantages of EVs
5. Embed support for EVs in strategies for transport, energy, climate change, air quality and the built environment.
6. Improve the user experience of the ChargePlace Scotland network
    - Enhancing the charging network
    - use of social media and stakeholder engagement to improve driver experience
7. Support the development of innovative EV charging hubs across Scotland
    - Enhance user experience
    - Innovative hubs
    - Cluster charging points to reduce wait times
    - European Regional Development Fund Low Carbon Travel and Transport Programme, Transport

Scotland as Lead Partner, has been awarded £7.6 million to December 2018 to invest in the development of low carbon travel and transport hubs across Scotland, which includes EV charging facilities.

8. Support local authorities in deploying measures that encourage adoption of EVs.
9. Consider the impact of emerging technologies and business models on EV adoption and infrastructure deployment.
10. Support improvements in the collection, analysis, interpretation and dissemination of data and evidence on the economic, environmental and social benefits of EVs.

3.4 London

As of November 2017 there were approximately 10,500 EVs in London. The Mayor of London's signature transport focus, set out in the London Plan 2017, is that 80% of all trips in London will be made by foot, cycle or public transport by 2041. The decarbonisation of the remaining journeys is a priority, and the Mayor's Transport Strategy regards the uptake of EVs as an integral part of improving the air quality in the city and reducing the carbon footprint. One of the running themes of both the London Plan and the Transport Strategy is the introduction of 'Ultra Low-emission Zones (ULEZs). Whilst the primary focus of these zones may be to promote travel by foot, cycle or public transport it leaves the potential to incentivise buying EVs by allowing them access to these zones.

One of the main aims of the Transport Strategy is that all taxis and Private Hire Vehicles (PHVs) should be zero emission by 2033. Currently studies have shown that 25% of NOx emissions in London come from black cabs, which highlights the importance of electrifying the fleet. Taxis currently have an age limit set of 15 years, therefore if no more non-zero emission taxis are purchased then it could be possible to have a zero emission fleet by 2033.

Barriers to the electrification of the taxi fleet remain. The current rapid charging infrastructure is a major concern for taxi drivers who are thinking or purchasing an electric taxi. Transport for London (TfL) have stated that they are pleased with the progress of installing rapid chargers and believe that they can install up 150 rapid chargers by the end of 2018 and up to 700 rapid chargers by the end of 2022. TfL are currently trying to collect the data on the charge points across the capital, however, this is proving difficult as there are issues related to data sharing amongst London Boroughs.

The second major concern for taxi drivers is the upfront cost of an electric taxi. Currently the TX4 (diesel) car costs £46,000. The TX5 (electric) will cost £65,000, although including grants from the Government this could come down to around £52,000. The additional upfront cost remains a barrier.

A major focus of the London Plan is based around car parking, with the most significant statement being that every space in a newly built residential car park should have passive provision for charging facilities and that 20% of the spaces should have active charging facilities. The plan also states that Commercial, Hotel and Leisure parking requirements include having to provide EV charging infrastructure. There was no mention of the need for EV charging facilities for Retail car parks. However, the plan goes onto state that *'Where car parking is provided in new developments, provision should be made for infrastructure for electric or other Ultra-Low Emission vehicles'*. These planning regulations are a major potential step to to improving the EV charging infrastructure in London. However, this seems to be a potential step back from the 2016 London Plan which stated that '*In addition, developments in all parts of London must: ensure that 1 in 5 spaces (both active and passive) provide an electrical charging point to encourage the uptake of electric vehicles'*. The new London Plan is currently in draft format.

Another project which could have a profound effect on the charging infrastructure of London is being carried out by an EU Horizon 2020 project called ELIPTIC (Electrification of Public Transport in Cities). This project is researching whether the electricity distribution from the London Underground could be used to support the charging of EVs, including electric buses and vans. This project has already identified

several locations across the Underground's electricity network where there is a suitable connection point and there is electrical capacity.

This research has led to a pilot study at TfL's Lillie Bridge depot, supplying power to a proportion of TfL's electric fleet. At the depot six 7kW chargers have been installed and testing is currently being undertaken. If there is no detrimental effects on the running of the London Underground's operations and sufficient power is being drawn to charge the vehicles then this project could rolled out across more of London to Bus Depots, Taxi Ranks, and other TfL depots.

Other important schemes and implementations in London include:

- The Neighbourhoods of the Future Programme is providing £2.5m for London Boroughs to test whether street lamps can be converted into charge points and whether these points could be used for EV parking only.
- Zipcar are hoping to be the first 100% electric vehicle car club in Greater London, the time scales they have set for this goal are around 5-10 years. They have already introduced the first EVs to their range. At the moment Zipcar have to pick up the EVs periodically. Additionally, there are presently 56 dedicated plug in hybrids with dedicated bays which are mainly based in Westminster.
- There have been purchases of hybrid and electric buses which is an important high level political statement.
- UPS is planning on electrifying all 170 of its London-based truck fleet in the coming years.[9]

3.5 Key takeaways - four things Local Authorities can do

Note: you can find a supplementary two-pager summarising 18 actions Local Authorities can take to stimulate EV deployment here.

The following is an overview of ideas and best practice for supporting charging infrastructure in the UK. Before councils embark on the implementation of some of these recommendations we recommend the development of an 'EV Plan' which allocates a budget and identifies key deliverables. Such a plan should be reviewed against deliverables after implementation to ensure that the infrastructure is used to its maximum potential.

1. Install charge points

Charging electric cars is a major concern for potential buyers. Local Authorities can make a real difference in the development of a local market by being proactive in relation to the installation of charge points.

Home charging will be the backbone of EV refuelling, and the 'Electric Vehicle Homecharge Scheme' is currently available to people who have off street parking. This scheme is well-known to developers.

Where LAs can have real impact is by developing demand-led local, publicly accessible, infrastructure. The 'On-Street Residential Scheme' is available to cover a significant portion of the cost of installing chargers for residents who do not have access to off-street parking. It has recently been announced that only five councils have taken advantage of the scheme and nearly £4.5 million of funding is still available (as of January 2018).

Councils can also make the "Milton Keynes Promise" which "is the Council's intention to provide an overnight charging facility within a short walk of a new electric car owner's home." The initiative empowers those who don't have access to off-street parking such as those living in terraced housing, flats or apartments and employs existing funding - the On-Street Residential Chargepoint Scheme. REA member analysis indicates that such a 'Promise' has successfully contributed to the development of a vibrant private company-led EV infrastructure network in the Netherlands.

Other initiatives that councils can embrace to drive the development of public EV infrastructure include:

- Appointing an "Electric Car Czar," a councillor who can serve as a main point of contact for residents' and developers' inquiries and who can aide in the navigation of the council's procedures.
- Looking favourably upon planning requests where charging is integrated into a new development
- Systemically asking for and cataloging resident requests for new charge points. Create a dedicated page on the council website for EVs and have a link to request a charge point, allowing for charge point providers to install points where there is clear demand

2. Make it more convenient to drive an electric car

For many cities across the UK there are major concerns about both air quality and congestion. A scheme that cities have used to reduce both of these issues, with varying success, has been Park and Ride. Park and Ride schemes are based on people arriving to the city leaving their vehicles outside at a designated car park and then using public transport to get to the city centre.

Installing charge points at Park and Ride car parks would be an excellent way of improving EV charging infrastructure. This would incentivise EV owners to use the Park and Ride system and therefore further reduce congestion in the city centre. The space needed to install the charge points should already be there as the car parks are usually out the centre and are relatively extensive. The majority of the charge points to be installed would not have to be rapid as the majority of people parking there will be heading to the city for an extended period of time. This will reduce the capital cost of installing the points. Other infrastructure such as overhead solar panels for clean power generation should also be considered. A side benefit of installing points at a large car park such as this is also the cultural and physiological side effects. The visibility of the charge points and potentially even more so the overhead solar panels immediately indicates to the public and private companies that the council or LA are serious about EV infrastructure. This will then potentially lead to more EV uptake and more investment from private companies into EV infrastructure.

The second large scheme that councils and LAs should consider is starting a 'Car-Club' with EVs. Setting up a car club can be an efficient way of getting more EVs on the road and getting more private investment involved. The most significant commitment to an EV Car club is currently one which was set up by Transport for Scotland in 2016 and is run by Carplus.

The programme has supported the introduction of 82 EVs to car clubs which was more than the rest of the UK combined at that time. Investment to provide charge points at hubs for multi-modal journeys including installations at Park & Ride sites and 11 ferry sites has also been provided. This can be scaled down to a smaller level by LAs. An example of a smaller scheme is in Oxford. The North Oxford E-car club currently charges £4.50 an hour including insurance and power. The cars are available 24/7, 365 days a year and are placed in convenient locations. The range for the north Oxford car is 75 miles which is sufficient for local journeys.

Local government can also set up up-front interest-free loan programmes for EVs, similar to the programme introduced in Scotland and administered by the Energy Saving Trust.[10]

Smaller scale options to promote EV uptake and infrastructure improvements:

- Allow extra incentives for EVs such as, the use of bus lanes, dedicated free parking, and exemption from any potential city centre charges.
- Set up one off 'workshops' to spread EV knowledge and promote uptake. This can be done in conjunction with private companies to showcase new EVs/new car club/overhead solar panels for EV charge points etc.
- Produce an 'EV plan' stating how the LA will aim to improve EV infrastructure and improve EV uptake

in the future. This will help reduce uncertainty for both the public who are considering purchasing an EV and private companies who are concerned that there are not enough commitments to invest in large scale improvements.

3. Lead by example

LAs and councils can be at the forefront of EV uptake and infrastructure improvements by leading by example. An example of this is in Leeds where they have added 42 EVs to their fleet which is expected to have fuel savings of around £24,600 a year[11]. However, it is not only the large potential savings which are beneficial, the fleet going electric proves that the city has the infrastructure to support EVs and increases the general visibility of EVs.

With these large fleets charging hubs will need to be set up which can support the charging of the vehicles. This can be combined with solar panels or other clean power generating infrastructure. This improves the green credentials of the council, will reduce long term costs and reduce pressure on local power supply. An example of a charging hub up being set up with solar panels is by the football ground in Falkirk; this is a large expanse which is mainly only used once a week and therefore is an ideal location for a charging hub.

4. Educational

One of the main barriers that is hindering the growth of EV uptake is education. Research has shown that the two main reasons that people don't buy EVs is not cost but range anxiety and worries about recharging. Given the relatively short average journey times and the rapidly improving charge times it is vital that this information is readily available. LAs in areas such as Milton Keynes have set up 'Experience Centres' to try and improve the local knowledge around EVs - albeit with significant funding from central government which can make this initiative more difficult to replicate. This centre is free to use and allows people thinking about buying an EV but who are unsure to learn more and to test drive and EV. The centre also provides all the information about the schemes and grants that are available to reduce the upfront cost of owning an EV. The centre is partnered by several private companies from major car manufacturers to promotional green companies.

Major awareness campaigns can also be used to promote the use of EVs within an LA. These campaigns can be simply promoting a new scheme that has been introduced whether it is from the Government or the LA, or can be promoting the use of EVs as a way of reducing personal costs and contributing to improving air quality within their area. Numerous of LAs are doing substantial amounts of work improving the EV infrastructure but if people don't know then the uptake will not follow. A major example of this is the installation of on-street charge points, if these charge points are not heavily promoted and visible for the public to see then the benefits of installing the points are reduced.

An additional policy that is pragmatic and tangible is the integration of council webpages with the ZapMap API. ZapMap is the most extensive app in the UK detailing the locations and conditions of charging points. Councils should ensure their infrastructure is listed here and potentially have their maps integrated into their EV webpages.

Numerous consultancies and non-profit bodies are also available to run education sessions on electric vehicles for council staff.

Key takeaways - ideas to support EV deployment

Install charge points

- Make the "Milton Keynes Promise" for those who don't have access to off-street parking. This commits local authorities to operating an 'on-request' charging system to ensure on-street charge points are conveniently located for residents who are owners of EVs
- Local Authorities should look favourably upon planning requests where charging is integrated into a new development.
- Appoint one councillor to lead on electric vehicles, or wider environment issues, and make their position publically known online
- Work with charge point developers to ensure the visibility of charging infrastructure
- Systematically ask for and catalogue resident requests for new charge points. Create a dedicated page on the council website for EVs and have a link to request a charge point, allowing for charge point providers to install points where there is clear demand
- Talk to National Grid about how the roll-out of ultra-rapid charging hubs will impact your area, and develop a strategic transport strategy

Make it more convenient to drive an electric car

- Develop Park N Ride facilities co-located with charging infrastructure
- Initiate a Car Club in your area
- Introduce free parking for EVs
- Introduce Ultra-Low Emission Zones and allow EVs to use bus lanes

Lead by Example

- Deploy EV charging points on council property, potentially co-located with a solar carport canopy and energy storage system
- Install charge points for council staff to use
- Establish an 'Energy Board' that looks at ways of becoming more energy efficient and sustainable, in addition to looking at additional revenue streams from advancing renewable technologies
- Commit to purchasing EVs as part of the council's transport fleet, or work with bus service operators to commit to electrifying the bus fleet (on converting it to renewable natural gas)

Education

- Ensure that residents are easily able to find local charge points, which can be done by listing local charge points on the council website and/or interfacing council websites with the Zapmap app API
- Run an education session on electric vehicles for council staff which both emphasises the exciting changes taking place in the sector as well as technical specifications and examples of what a strategically placed local network looks like
- Organise a travelling road show into schools, potentially offering both vocational links to the industry to the students (in the form of work placements) while also highlighting the benefits of EVs to school authorities
- Secure funding for, and set up an EV 'experience centre' akin to Milton Keynes
- Run a public campaign showing the benefits of electric vehicles and the numerous incentives in place

A handy, two page, summary of these bullet points can be accessed and downloaded here.

CONCLUSION

This report has highlighted the multitude of support structures presently in place to enable the growth of electric vehicles, ranging from up-front grants for vehicles and charging units, to tax benefits, and loan programmes. It also highlights case studies across the UK of Local Authorities that are showing initiative in this critical point in the history of the automotive sector.

While good support structures are in place it is critical that Local Authorities are playing a leading role in thinking through where EV charging facilities need to be located in their constituencies and how they will complement other transportation strategies - be they the encouragement of walking and cycling or the introduction of ultra-low emission zones.

Interviews with leading authorities indicate other issues that need to be resolved. These range from a lack of take-up of UK government support schemes and disparities developing in the standard and provision of EV infrastructure across the country. It has also been noted that there is a cycle of 'good' LAs which have successful bidding teams, these LAs get the funding and the potentially smaller LAs with less successful bidding teams get left behind.

Oxfordshire, Manchester and London were identified as LAs (and Scotland as a devolved administration) which have been leading the way and highlighted as case studies. The approaches of these areas varied from increasing awareness and knowledge, direct investment into their own fleets, installing charge points, setting up EV car clubs and more.

The report concludes with four important recommendations for LAs to increase EV uptake. Whilst these recommendations are ambitious LAs have shown that they are possible with the right approaches. After these recommendations there are several smaller ideas that LAs can promote. A combination of progressive government funding and smaller local scale projects with increasing levels of knowledge and awareness surrounding EVs is necessary to keep increasing EV demand.

We are at a historic juncture in the battle to tackle air pollution, greenhouse gas emissions, and to empower customers with more affordable means of transportation. To prevail, and to maintain our global leadership position, it is more imperative than ever that government at all levels, industry, the third sector and consumers collaborate.

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