

Subject:	Progress and proposals for Ultra-Low Emission Vehicles		
Date of Meeting:	7 July 2015		
Report of:	Executive Director - Environment, Development & Housing		
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Ward(s) affected:	All		

FOR GENERAL RELEASE**1. PURPOSE OF REPORT AND POLICY CONTEXT**

- 1.1 This report outlines a number of future proposals that are required to maintain, update and expand the infrastructure required to support and facilitate the greater uptake and use of Ultra-Low Emission Vehicles [ULEVs] in the city, especially electric vehicles. This is explained in the context of the progress that has been made in recent years following the introduction of the first, publicly-available electric vehicle charging points in the city in 2009.
- 1.2 Reducing carbon emissions from transport contributes towards tackling the environmental effects of climate change, and addressing air quality problems (especially those within the city's two Air Quality Management Areas [AQMAs] where European Union [EU] thresholds for Nitrogen Dioxide [NO₂] are exceeded), by reducing emissions from road traffic in the city are two of the council's main objectives within its Local Transport Plan [LTP] and City Plan. These actions also support the wider objectives of the council and city.
- 1.3 The LTP states that the council aims to provide information and choices for people to enable them to travel more sustainably on a regular basis; promote and enable greater use of zero- and low-emission forms of transport; and use new technology to maximise reduction of carbon emissions.
- 1.4 Greater use of ULEVs, especially electric vehicles, is one way in which the city's local transport objectives will be fulfilled. It will contribute towards local and national targets to reduce carbon emissions by 3.5% per year to 2020 and by 80% by 2050 (based on a 2005 baseline), and reduce air quality levels closer to, or below, the threshold of 40 micrograms/cubic metre for NO₂.
- 1.5 The government's Office of Low Emission Vehicles [OLEV] was established in 2009 with the objective of positioning the UK at the global forefront of ULEV development, manufacture and use so as to contribute to economic growth and to help reduce greenhouse gas emission and air pollution on the UK's roads. OLEV has set itself the target that by 2040 every new car will be a ULEV.

2. RECOMMENDATIONS:

- 2.1 That the Committee welcomes the progress that has been made in the city to increase the use of ultra-low emission vehicles, especially electric vehicles.
- 2.2 That the Committee agrees to the continued investment in Ultra-Low Emission Vehicle [ULEV] technology and infrastructure to upgrade and increase the availability of on-street charging for public use, including:-
 - i) an initial upgrade of up to four of the existing eight on-street electric vehicle charging points;
 - ii) a second phase of upgrades to the remaining, existing on-street electric vehicle charging points; and
 - iii) the installation of new on- and off-street electric vehicle charging points across the city between 2015/16 and 2018/19.
- 2.3 That the Committee approves the dissolution of the existing Brighton & Hove City Council Electric Vehicle Charing Point Registration Scheme and the transfer of the administration and use of all current and future charge points to an established national charging network.
- 2.4 That the Committee authorises officers to continue to work together with partners and stakeholders to identify and pursue opportunities to install equipment and bid for external funding to support the upgrade and expansion of Ultra-Low Emission Vehicle [ULEV] technology and infrastructure within the city.

3. CONTEXT/ BACKGROUND INFORMATION

Progress

- 3.1 There are a number of factors that can influence the growth in ownership and use of ULEVs. These can include the rate at which technology is developed within commercial, private sector markets; the cost to a consumer of purchasing a vehicle; and the ability to charge the vehicle conveniently. The council cannot increase ULEV use in the city by itself, but it can play an important role in doing so. Recognising the need to accommodate expected growth in the need for, and use of, ULEVs within the city, the council has already introduced electric vehicle charging points [EVCPs], and is aware the demand for more infrastructure in local neighbourhoods.
- 3.2 Since 2009, the council has installed a number of public EVCPs at locations across the city. These are summarised in Appendix 1. Points were also installed in the Trafalgar Street and Regency Square public car parks when they were refurbished in 2013. The on-street locations were installed and part-funded (50%) by the council as part of the European-funded CIVITAS Archimedes project. The location of these points was limited by the study boundary of the CIVITAS project which included the city centre and the A23 and A270 corridors.

- 3.3 Information on the uptake and ownership of EVs in the city is not readily available from the government, but recent data from OLEV show that there have been over 9,000 new ULEV registrations in the UK from January to March 2015, which is an increase of 366% from the same period in 2014. The council's Electric Vehicle Registration Scheme currently has 109 members, and has increased by almost 70% between November 2014 and June 2015. Annual usage of the on-street EV charging sites varies across the city. The greatest use occurs at the site by The Level in Ditchling Road and the Madeira Drive site is used the least. Analysis of usage has concluded that their introduction would have achieved a 55% reduction in CO₂ emissions, if the electric vehicles using the parking bays had replaced a petrol- or diesel-fuelled vehicle using the same parking bay. Research has also shown that a shortage of charging points was a factor that registered users of the council's scheme liked least about using electric vehicles.
- 3.4 The existing on-street charge points are 'first generation' 13 amp 'slow' charge points. Advancements in EV technology and infrastructure during the last two years means that the 13 amp charge point has now been superseded by a more powerful model, called a 32 amp 'Type Two' 'fast' charger. The 32 amp charger can halve the time it takes to typically charge an EV to approximately 3-4 hours, and is currently regarded as industry standard, and new EVs are supplied with a 'Type Two' charging cable.
- 3.5 To further encourage the use of ULEVs, the council offers a 50% discount on the price of a resident's parking permit. This applies to vehicles that have been registered after 2001 and which have CO₂ emissions of no more than 120g/km.

Securing additional funding

- 3.6 The council has continued to maintain the CIVITAS-funded charging points that have been installed from within existing, available budgets, and has also sought to secure additional, external funding when it has become available. The council is participating in the EV South East 'energise' Network, led by Lewes District Council, which is described more fully in Appendix 2 of this report. The 'energise' network has successfully secured £2.4million from the government to invest in between 30-40 strategically located, off-street, 'rapid' EVCPs across the south-east of England. Withdean Stadium will be the first location in the city to offer this facility for EV drivers.
- 3.7 Funding bids have been submitted to a number of sources to secure investment in ULEV technology and infrastructure. These include the successful bids which secured nearly £1million from the government's Clean Bus and Clean Vehicle Technology Funds (approximately £750,000 for investment in buses, and £195,000 for taxi minibuses respectively). The council also applied for funding from the government's Go Ultra-Low City Scheme in early 2015, following the submission of an initial expression of interest in December 2014. The second phase bid was submitted to OLEV for part of a £35 million fund to increase the uptake of ULEVs, but was unfortunately not successful. The bid is attached as Appendix 3 of this report, and outline possible future opportunities in the city.

Upgrading infrastructure

- 3.8 Upgrading (up to) four of the existing eight sockets on on-street EVCPs will enable users to benefit from faster recharging times and also increase turnover, therefore enabling greater use to be made of the points by different drivers. The 'Type two' charge point is also regarded as a 'future proof' (5 years +) option because it has capacity for an additional 32 amp reserve should a 64 amp output be required in the future for even faster recharging times. The upgraded parts can be installed and operational in approximately four weeks.

Improving administrative procedures

- 3.9 The council's existing EVCP Registration Scheme was developed as a bespoke arrangement for the CIVITAS project in 2009. Since then, new national provisions to manage such schemes have been developed and adopted in the surrounding areas. It is therefore proposed to dissolve the existing Brighton & Hove registration arrangements and transfer all Brighton & Hove City Council charge points to the CYC ('Charge Your Car') national network. This will create a consistent and linked EVCP network across Sussex and beyond, and provide mutual access to all charging points. This means that any electric vehicle owner (registered to the same national network) will be able to use the council's public charge points, no matter where they live in the country.
- 3.10 It is also proposed that the council's existing 'no cost to charge' policy for EVCPs will remain as this approach is in line with both East and West Sussex County Councils. It is also expected that EVCP bays will continue to have a maximum electric vehicle charge time of three hours, and further consideration will need to be given to if, or how, the use of the bay when charging would be paid for.
- 3.11 The introduction of a parking legislation contravention code means the council will no longer be required to issue electric vehicle permits to those registering to use the charge points once the charge points have been transferred to a national network. Registration to the national network is a quick and easy online process; making EVCP access virtually instant.

Increasing access to charging facilities

- 3.12 The council recognises that the increased availability and distribution of EVCP options is key to increasing the uptake and use of electric vehicles, and will help address the growing interest and requests for residential on-street charging points. Government initiatives, such as the OLEV scheme to provide grants to local authorities to respond to individual requests for residential on-street and paid EVCPs, have not proved to be popular outside London. The council has not signed up to it as the additional commitments required, in terms of funding and resources, are not considered to provide value for money currently.
- 3.13 However, it is proposed to increase the overall availability of EVCPs in the city for use by wider communities and it is proposed to install further charge points in the city over the next four years. Decisions on locations will involve a consistent process of evaluation and consultation, in order to maximise the benefits to expected and potential users within the wider neighbourhoods they could serve.

- 3.14 EV owners in the city that have access to a driveway or off-street parking facilities can take advantage of a 75% discount (capped at £700) off the total capital cost of a charge point and its associated installation costs through the Government's Electric Vehicle Homecharge Scheme. Owners that do not have a driveway or access to off-street parking where they live are reliant on using the public on-street EVCPs in the city to recharge their vehicle. Officers have therefore also been considering ways in local owners could legally and safely access their domestic power supply, without obstructing the highway with the cable, or causing a trip hazard.
- 3.15 In line with the council's approved City Plan Sustainable Transport policy (CP9), the council has recently prepared and consulted on revised, draft guidance for Parking Standards for New Development (known as Supplementary Planning Document 13 [SPD13]). Within the draft SPD13, proposals to secure electric vehicle charging points as part of planning applications for certain land-uses, such as residential and employment, have been included for the first time.

4. ANALYSIS & CONSIDERATION OF ANY ALTERNATIVE OPTIONS

- 4.1 The only feasible alternative options would be to either continue with the council's existing EVCP registration scheme and not upgrade or install further EVCPs in the city, or remove the infrastructure. The former point would mean that the use of the city's EVCPs would be inconsistent with that of the rest of Sussex and parts of the south-east of England, which could be confusing or discouraging to EV drivers. The latter point would mean that, over time, the current charging infrastructure would become obsolete, and therefore discourage residents from purchasing, or people visiting the city in, an electric vehicle. Given the Government and motor industry's clear commitments to increasing the uptake and use of ULEVs, removal of the city's existing EVCPs is not considered appropriate. It is therefore recommended that the city's registration scheme is made more compatible with that used within the region, and that investment in upgrading and increasing the availability of EVCP infrastructure is supported.

5. COMMUNITY ENGAGEMENT & CONSULTATION

- 5.1 No community engagement or consultation has been carried out so far. Members of the current registration scheme will be notified of the proposed changes for the scheme and upgrades to existing charging points, and decisions on locations of new charging points will involve a consistent process of evaluation, prioritisation and consultation, particularly for any Traffic Regulation Orders, prior to the in order to maximise the benefits to both expected and potential users within the wider communities that they could serve.

6. CONCLUSION

- 6.1 The proposed improvements to the administration of the use of EVCPs in the city and a gradual upgrade and increase in the numbers of points over a wider area through continued and additional investment, alongside policy development, will contribute to an increase in choice and uptake associated with ULEVs in the city,

therefore contributing to a range of wider objectives that exist within the city that benefit local residents, neighbourhoods, businesses and visitors alike.

7. FINANCIAL & OTHER IMPLICATIONS:

Financial Implications:

- 7.1 Although the costs vary dependent on site, the approximate cost of upgrading an EVCP point is £9,000, and the approximate cost of introducing a new EVCP is £11,000. The capital costs of upgrading and increasing availability of EVCPs will be funded from the Local Transport Plan [LTP] capital programme. The 2015/16 LTP capital programme has allocated £55,000 towards EVCPs as approved at Policy & Resources Committee in March this year. Future years' capital allocations are subject to future Policy & Resources Committee approval.
- 7.2 The annual cost associated with the maintenance and administration of the existing EVCPs is approximately £10,000, and has been met from within existing budgets. These costs are expected to remain the same if the registration process is changed to the national arrangement. Current electricity costs are approximately £1,000/year. The impact of reduced parking availability and discounted permits on parking revenue income is not considered to be significant.
- 7.3 Officers will continue to identify opportunities to maximise external funding sources. External funding is potentially an important source of income, but funding conditions need to be carefully considered to ensure that they are compatible with the aims and objectives of the council.

Finance Officer Consulted: Steven Bedford

Date: 22/06/15

Legal Implications:

- 7.4 The existing EVCP Registration Scheme in Brighton & Hove allows the Council to alter or terminate the scheme and therefore there are no legal implications arising from the report.

Lawyer Consulted: Elizabeth Culbert

Date: 23/06/15

Equalities Implications:

- 7.5 Continued investment in EVCPs to increase the uptake of ULEVs will increase the opportunity for local people to consider using, or benefit from the use of, such a vehicle, and is not expected to materially disadvantage other road users.

Sustainability Implications:

- 7.6 Investment in additional and more powerful EVCPs will encourage wider ownership and usage of electric vehicles, which will result in local air quality improvements if such vehicles replace more polluting ones. The charging points are powered solely by electricity from sustainable sources and therefore will continue to help with a reduction in carbon emissions.

Any Other Significant Implications:

- 7.7 Greater uptake and use of ULEVs as a result of increased investment in infrastructure will help improve air quality, especially if they replace petrol- or diesel-fuelled cars which are driven on a regular basis. Reductions in exhaust-pipe emissions will therefore also be beneficial to public health. Engine technology also means that noise from electric vehicles is far less than that generated by other vehicles using a normal combustion engine.
- 7.8 Continued investment in ULEV infrastructure is consistent with the aim within the Environmental Sustainability section of the council's Corporate Plan to 'increase the choice and safety of sustainable, low-emission transport options through the Local Transport Plan and EU funding'.

SUPPORTING DOCUMENTATION

Appendices:

1. Location of publicly available charging points in Brighton & Hove
2. EVSE Network/Partnership
3. Funding Application submitted in February 2015 for Department for Transport "Go Ultra Low City" (GUL) Scheme

Documents in Members' Rooms:

1. None.

Background Documents:

1. Brighton & Hove City Council's Local Transport Plan 2015

7.7.15 ET&S Committee Report – Agenda item 11

Appendix 1

Location of publicly available charging points in Brighton & Hove

The council has installed 10 publicly available electric vehicle charging points in the city. These are in 6 locations:

1. Withdean Stadium A (Eldred Avenue)
2. Withdean Stadium B (Eldred Avenue)
3. The Level A (Ditchling Road)
4. The Level B (Ditchling Road)
5. Bartholomews A
6. Bartholomews B
7. Madeira Drive A
8. Madeira Drive B
9. Trafalgar Street Car Park
10. Regency Square Car Park

The charge points provide electricity at no cost to members of the Brighton & Hove City Council EV registration scheme.

Parking at the on-street charge points (1 to 8 above) is free whilst charging during the maximum 3 hour, enforced charging limit time period.

Users of the off-street charge points in Trafalgar Street and Regency Square public car parks are required to pay the standard car park charge.

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Appendix 2

EVSE Network/Partnership

In 2014, the council participated in a joint bid by the EV South East [EVSE] Network Partnership for grant funding from the Government's Office for Low Emission Vehicles [OLEV] to install Rapid and Fast Charging Points in the south-east of England.

The bid was successful and the EV South East Network Partnership (now branded as 'energise') was awarded £2.4 million to develop a network of linked up rapid chargers, capable of recharging an electric vehicle in 20 minutes, at key strategic locations/destinations across the region.

The project has secured funding for 30 - 40 rapid chargers locations across the south-east, one of which is Withdean Stadium car park in Brighton. The rapid charge points are expected to be installed and operational by July 2015.

The rapid charger locations have:

- Good access to major routes
- 24/7 public access (i.e. no barriers/ restrictions).
- Safe and well lit access.
- Access to 3 phase power.
- Access to amenities (refreshments etc.)
- Provision for 1 or 2 parking spaces.

The rapid chargers charge at the rate of 43kW or 50kW per hour, compared to a traditional charging point which usually delivers 3kW per hour. The rapid chargers can recharge an electric vehicle to 80% from flat in approximately 20 minutes.

The grant funding is for the supply and installation of 75% of the cost, and the remaining 25% funding will be provided by Elektromotive/Charge Your Car, who are the commercial partners in the bid. Therefore, there is no cost for the supply/installation of the charging points to the local authorities involved in the bid.

The energise website address is :-

<http://www.energisenetwork.co.uk>

Funding Application submitted in February 2015 for Department for Transport “Go Ultra Low City” (GUL) Scheme

Annex C - Screening Phase Pro-forma

Who is involved in your bid?

The following businesses and organisations have been formally approached and show an interest in compiling a bid and being project partners:

- Charge Your Car Network (CYC)
- City Car Club
- Elektromotive
- EV South East (Energise) Network
- Ricardo Engineering
- Southern Rail
- The Sussex Air Quality Partnership (Sussex-air)
- University of Brighton

Local electric car dealerships / manufactures would also form part of the project team.

What are the key elements you plan to deliver?

Brighton & Hove City Council and its project partners will bring about step change and transform the future of electric mobility by introducing a combination of different elements to the city.

ULEV Uptake

Public Electric Car Hire: Explore a) introducing public electric car hire and its linkages with Park & Ride locations within the city, b) introducing additional car club bays for electric vehicles, c) setting up a grant top-up for car club operators to upgrade new vehicles to ULEV's; and d) purchasing car club ULEV fleet vehicles for Brighton & Hove City Council pool car use. *N.B: City Car Club in Brighton and Hove has 100 hire cars and over 3000 members.*

Publically Accessible Charge Points / Electric Vehicle Hubs: Increasing a) publically accessible charge points in shopping centres, public car parks and residential developments; and b) publically accessible charge points in residential areas through residential / community electric vehicle charging point hubs, to provide car charging facilities within a 5 / 10 minute walking distance from home. The electric hubs would be accessible to private and business users. The ability to reserve an electric vehicle bay or car using real time functionality, including community hub registration login / personalisation would be made possible by the introduction of electric vehicle charging and parking by smartphone.

Open Access: Maximise access to charge points in the city by having an open network (e.g. accepts a variety of charge cards).

Incentives: Continue incentives to encourage more people to drive electric cars e.g. continue the availability of free electricity and parking at charge points, 50% reduction off the cost of a residents parking permit (to include greater promotion to local residents); and explore reduced parking fees and designated parking bays for electric vehicles.

ULEV Taxis: Explore a) setting up a grant top-up for PHV / Taxi owners to upgrade new vehicles to ULEV's; and b) the opportunity to introduce EVCP Hubs at Brighton and Hove train stations. The infrastructure would support uptake of ULEVs (taxis) in and around the city. (Linked to the BHCC Taxi bid)

1) Expected Impact

A minimum 55% overall reduction in CO2 emissions (compared to the same usage with non-electric vehicles); and an increase in the number of electric vehicle users.

2) Supporting Evidence

Eight electric vehicle charging points were installed and part-funded through the Brighton & Hove City Council Civitas project in 2009 which concluded a 55% reduction in CO2 emissions (compared to the same usage with non-electric vehicles) and that the shortage of charging points was the factor that registered users liked least about electric transport.

Exemplar Status

Brighton & Hove is at the forefront of creative and innovative transport schemes. We have a reputation as a market leader in transport policy and putting it into practice. E.g. the council led the way in electric vehicle charging infrastructure by becoming the first city outside of London to install public on-street charging points, through the European CIVITAS Initiative in 2009; and in 2014 the council was awarded CIVITAS City of the Year 2014 status for successfully implementing ambitious sustainable transport policies. The city is also the world's first designated One Planet City and has achieved international Biosphere status. Brighton & Hove City Council will build on its existing reputation by:

- Linking into the South East 'Energise' Network to explore/maximise wider connectivity between this and Surrey County Council's bid. Using the 'Energise' brand and drawing on its established regional / South East partnerships to deliver a joined up / cohesive regional wide scheme.

The Energise Network will work with both public and private sector partners to a) promote business use of ULEV's, b) enable private and public sector fleet uptake by promoting the available infrastructure and benefits of ULEV's; and c) highlight the economic benefit to business, tourism and private users of ULEV's.

- Delivering 'Energise' Network events to share learning with other local authorities / transport professionals.
- Disseminating project information to a world-wide audience (through new and existing international networks) via audience specific offline and online communication channels e.g. workshop, webinars, and online content / newsletters. This includes maximising on the opportunity to gather data and communicate / disseminate findings world-wide to increase the understanding of electric vehicle user behaviour.

Air Quality

The existing Local Air Quality Management Strategy for Brighton & Hove is linked with the Local Transport Plan and is associated with the Sussex Air Quality Partnership.

The City has two Air Quality Management Areas (AQMAs) for non-compliance with Nitrogen Dioxide. Both were declared in 2013. The two AQMAs are a quarter the size of the previous one (2008) and include all exceedance of Nitrogen Dioxide at relevant receptors.

The council is developing a renewed 2015 air quality action plan targeting the 2013 declared AQMA; and it is recommended that it will promote alternatives to diesel in the new air quality management area (for example methane, low emission petrol, hybrid and electric vehicle use).

Proposals:

- Changing local planning. - All new offices and major residential developments to have 10% of spaces with charging provision and 10% passive charging provision.
- Running a city-wide association dedicated to promoting, educating, supporting and accelerating the adoption of plug-in electric vehicles in Brighton & Hove.
- Opportunity to explore a) the implications of Low Emission Zone (LEZ) bus lane access for ULEVs; and b) extending the vehicle type of the current Low Emission Zone (LEZ) to include taxis.

Encouraging the uptake of ULEV's in Brighton and Hove will also benefit the wider region of Sussex and the South East by reducing emissions of vehicles that travel across the whole region. As a result other Air Quality Management Areas across Sussex will benefit.

Innovation

Research & Development: Explore a) solar power electric vehicle charging, b) electric vehicle batteries e.g. battery swapping and portable electric car batteries for easy in-door charging, c) demonstrating strategic thought on grid impact by carrying out a managed electric vehicle charging trial using Power Electronics Devices (PEDs) to distribute/share power between neighbouring substations/charging points; and d) the introduction of ULEV parking bay sensors for real-time information.

Linking with Other Schemes

Linking with the:

- EU-funded CIVITAS project (2015 – 2020) (pending bid outcome)
- Energise Network*
- BHCC Vehicle Technology Fund to retrofit taxis with emission-reduction equipment.
- Clean Bus Transport Fund, the Clean Vehicle Transport fund; and the Green bus fund for electric hybrid buses.
- The 2015 B&H Bus Low Emission Zone (LEZ)
- Ultra-Low Emission Vehicle Taxi Scheme (Dec 2014) (pending bid outcome)
- Low Emission Bus Scheme (Dec 2014) (pending bid outcome)

*The Energise Network was developed from the OLEV funded eV South East Network Project (2013-15). It is a public sector led partnership including Kent, Surrey and Sussex authorities and Southern Rail. The network has established a joined up network of rapid electric vehicle charge points across the region; and is working with partners to promote and raise awareness of eV charging and benefits of going "electric". For more information go to:

www.energisenetwork.co.uk

Monitoring

The following areas will be monitored to analyse the impact of the scheme and the increased uptake of electric vehicles. External factors and their potential impacts will also be analysed.

- **Electric Vehicle Usage:** Comparing baseline electric vehicle usage in Brighton & Hove before and after the introduction of the scheme.
- **Health:** Brighton and Hove Public Health includes the (Public Health England) public health indicator for particulates (PM2.5) in its' [Joint Strategic Needs Assessment](#) (JSNA). This has a [local health burden which impacts on 5.4% of BHCC population](#). This equates to 115 deaths in the city per year. The bid will assess health improvements through population health impacts assessment.
- **Air Quality / Emissions Levels:** Use of air quality monitoring data and historical data on emissions levels. Plus, carbon Dioxide emission calculations and comparisons based on actual charge point usage figures using National Energy Foundation Co2 Calculator.
- **Social Acceptance / Awareness Levels:** Conducting awareness and acceptance surveys to explore people's attitudes before, during and after the scheme to monitor how opinions and behaviour change over the course of the project.
- **Energy / Fuel Consumption:** Compare a) fuel efficiency of electric vehicles with non-electric vehicles; and b) fuel costs to battery charge costs.

How are you going to deliver those key elements?

We'd maximise opportunities:

- Through partnership, business and community engagement.
- Through joint, packaged and linked bids.
- Through successful joint project working.
- By applying learning & innovation.
- With political sign up.
- Through promotion to raise awareness and encourage behaviour change.
- By having 2 – 3 dedicated project officers.

