

Public
Key Decision - Yes

HUNTINGDONSHIRE DISTRICT COUNCIL

Title: Electric Vehicle Charging

Meeting/Date: Cabinet – 11th February 2021

Executive Portfolio: Executive Councillor for Operations and Environment, Councillor Marge Beuttell

Report by: Head of Operations, Neil Sloper
Operations Manager – Parking and Markets,
George McDowell

Ward(s) affected: All

Executive Summary

This report sets out a proposal to enhance Electric Vehicle (EV) charging in the Council's off street car parks. EV technology (charging and vehicles) is rapidly progressing, so what is proposed will not be a final solution but a best fit recommendation based on the constraints of existing electrical infrastructure and the results of an EV resident survey.

This report presents for decision, the alternative options for:

- the location and number of EV charging points within off-street car parks, and
- the associated fee for the use of electric charging points.

The Council's Off Street Parking Strategy 2018-2023 agreed a Parking Vision including 'Promoting environmental sustainability by supporting alternative fuel and travel methods'. The strategy set an action by 2020 to survey all our car parks to establish technical feasibility for electric vehicle charging and undertake user surveys to assess local demand and best fit options for the operation of electric charging bays. These have been concluded and are presented with recommendations for an EV implementation that maximises the benefit across our towns.

Recommendations:

Cabinet is RECOMMENDED to agree:

- the locations proposed & phasing of the installation of EV charging points
- the type and number of charging points at a given site
- a fee from the options presented, or alternative based on the evidence presented.

1. PURPOSE OF THE REPORT

- 1.1. To enable the delivery of Electrical Vehicle (EV) charging points within Huntingdonshire in line with the Council's Off-Street Car Parking Strategy 2018-2023.
- 1.2. To present the feasible options and customer preference for EV points within Huntingdonshire.
- 1.3. To establish an appropriate fee for the use of EV charging points.

2. BACKGROUND

- 2.1. A capital provision of £37k was made for EV charging in 2020/21, to implement the actions of the Off-Street Parking Strategy.
- 2.2. The Off-Street Parking Strategy committed Huntingdonshire District Council (HDC) to:

A Vision: Promoting environmental sustainability by supporting alternative fuel and travel methods

Specific actions by 2020 to:

- survey all our car parks to establish technical feasibility for electric vehicle charging and
- undertake user surveys to assess local demand and best fit options for the operation of electric charging bays

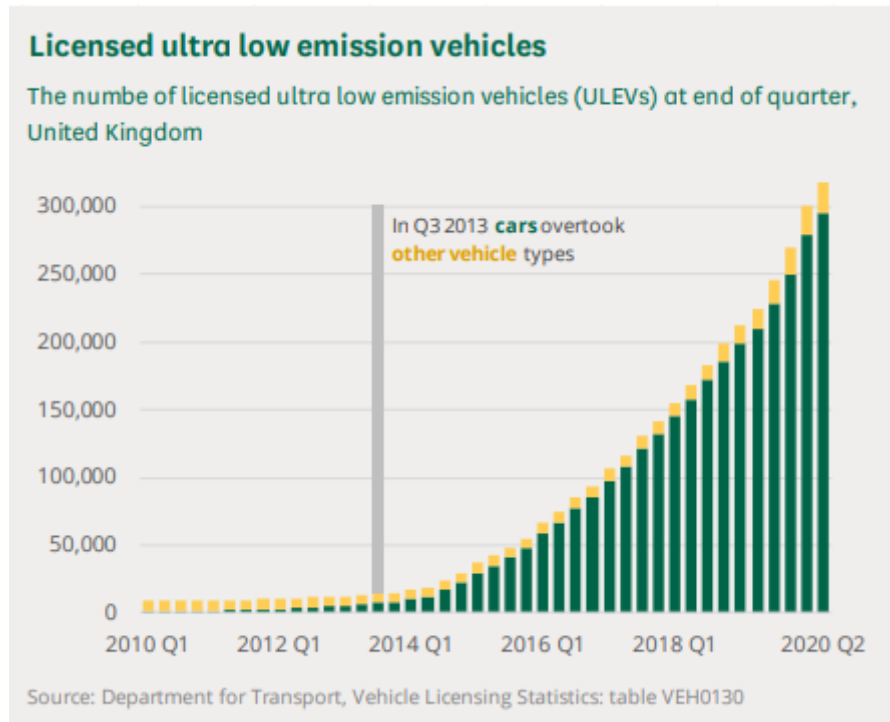
- 2.3 EV cars and charging continues to develop rapidly and with it the number of vehicles, their battery range and the rate of charging. It is likely that as technology continues to develop the way in which people charge their vehicles will continue to change. (see Appendix 3 Commons Briefing EVs and Infrastructure) Currently:

- EV users charge their vehicles fully at home.
- Electric car ranges are sufficient to cover daily short trips to shop, to work and for leisure without the need to charge at their destination.
- Where charging is available electric car users will take the opportunity to 'top up' their charge.
- when not at home and especially when traveling further distances, the preferred locations for charging are car parks at destinations, where they may be parked for an hour or more.
- Challenges do exist when charging an EV vehicle at your home (e.g. blocks of flats) so the ability to charge an EV in a long-stay parked location may be required.

- 2.4 In 2019 around 58.5% of licensed cars were petrol, 39.1% diesel and 0.8% were either a plug-in-hybrid, battery electric, range-extended electric, or fuel cell electric car.

- 2.5 The number of Ultra Low Emission Vehicles in the United Kingdom has increased from just under 9,000 at the end of Q1 2010 to 317,000 at the end of Q2 2020. This is an increase of 3,427%. At the end of Q3 2013 the number of

licensed ULEV cars overtook the number of vehicles of other types. Currently cars account for around 93% of all licensed ULEV vehicles. Other ULEVs include vans, scooters, HGVs and buses etc.



- 2.6 Ending the sale of petrol and diesel vehicles by 2030 The Government's **Road to Zero Strategy** set the "ambition" that by 2050 almost every car and van will be zero emission. The Government has since moved its planned date for ending the sale of petrol and diesel vehicles from 2040 to 2030 and for hybrid vehicles to 2035.
- 2.7 There is no duty on local authorities to provide electric charging points, it is up to them to decide, based on local priorities, whether to do so.

3. CONSIDERATIONS

3.1. Customer Survey

- 3.1.1 A customer survey was undertaken to capture the views of current EV users and understand the barriers of those who have not yet invested in this technology (Appendix 1).
- 3.1.2 The responses identified short and long stay car parks as: the most important locations for EV charging equal in importance three times more important as a location than retail and hospitality venues (the next most popular location).
- 3.1.3 87% of all respondents thought it was fair to pay to use EV charging points (83% of just those owning an EV).
- 3.1.4 86% of all respondents thought that EV point would increase EV use.

3.1.5 The second primary barrier to EV ownership after cost of the vehicle was '*the availability of charging points at my destination*'.

3.2 EV Charging Points

3.2.1 There are two standards of EV charging points which relate to the rate of electricity able to be passed, either 3.5 kilo watts per hour or 7 kilo watts per hour.

3.2.2 The commonly available EV charging points:

3 kW

Provides vehicles with up to 15 miles per hour plugged in.

Compatible and fully utilisable by more than 87% of Plug-In Electric Vehicles including Plug-In Hybrid Electric Vehicles.

7kW

Provide vehicles with up to 30 miles per hour plugged in.

Compatible and fully utilisable by ~87% of Plug-In Electric Vehicles.

22kW

Provide vehicles with up to 90 miles per hour plugged in.

Compatible and fully utilisable by ~11% of Plug Plug-In Electric Vehicles.

These charge points are not suitable for installation in HDC car parks due to the power supply requirement – a three phase supply (most cars are unable to use this).

3.2.3 The Council engaged an industry specialist to determine the technical feasibility for installation of EV points within off street car parks including:

- which car parks can support EV charging
- the maximum capacity of the power supply
- the options for charge points at a given site

3.2.4 The outcome of the feasibility study (Appendix 2) presents an option A or B for car parks in St Neots, St Ives and Huntingdon where there is an electricity supply that will support charging. Where the power supply will only support a single option, that is presented as Option A. This will maximise charging points across our car parks, but to do so will require the approval of an additional capital bid (£88,000) submitted for 2021/22.

Option A: Delivers quicker charging where possible, but delivers less charging points (9 less).

Option B: Delivers a higher number of charging points, compromising on the charging speed.

The recommended approach is Option A:

- use 7kwh EV points where possible (Option A), 3.5 kwh where it is not.
- split installation into two phases – using the existing budget provision (£37,000) by 31st March 2021 and a second phase by June 31st 2021 subject to a supplementary capital bid submitted for 2021/22.

This proposal will:

- maximise early delivery focussing on sites requiring less physical works
- provide fast charging where it is possible to do so (14 x 7kwh and 13 x 3kwh, 27 EV point in total)
- balance provision and cost as more EV points incur more cost
- is the best technology widely available now and usable by the current set of electric vehicles in use.

Option A – Maximising 7kwh EV points

		7 kwh sockets	3kwh sockets	Approximate Cost
St Neots	£35,500			
Phase 1	Tebbutts Road	2		£12,500
	Riverside	2		
Phase 2	Tan Yard	2		£23,000
	Priory Lane West		2	
	Brook Street		2	
St Ives	£28,000			
Phase 1	Cattle Market	2		£6,000
Phase 2	Darwoods Pond	2		£22,000
	Globe Place		1	
Huntingdon	£44,000			
Phase 1	Princes Street		2	£12,500
	Ingram Street		2	
Phase 2	Multi-Storey	4		£31,500
	Mill Common		2	
	Great Northern Street		2	
TOTAL	£107,500			
Phase 1		6	4	£31,000
Phase 2		8	9	£76,500

3.2.5 Where sites cannot support the installation of EV points, or where it is desired to install more charging points than is currently possible, a new/improved supply will be required for the site. Whilst the Council has not sought quotes at this time, the cost published from UK Power Network to:

- Install a new supply at a site where current infrastructure in the area supports this from £10,250 (ex vat) upwards depending upon the available connections.
- Upgrade the existing supply at a site where current infrastructure in the area supports this can range from £5,500 upwards.

These costs do not include hardware such as meters, required to use the supply. Costs are also subject to chargeable site surveys which may determine in that new/improved supplies are not possible where energy demand in the area is high.

Timescales from point of confirmation from receipt of the quote to undertake the survey to the completion on installation of the supply are upwards of 10 weeks.

3.3 Alternative Option – Maximising EV Points

3.3.1 The alternative option for implementation of EV points is to maximise the number provided by focussing on 3kwh charging. This increases the budget required by £20,000 to £127,500 but delivers an additional 9 charging points (36 EV points in total). Only 4 7kwh E points will be installed.

Option B

		7 kwh sockets	3kwh sockets	Approximate Cost
St Neots				
Phase 1	Tebbutts Road		4	£11,500
	Riverside		4	£11,000
Phase 2	Tan Yard		4	£11,000
	Priory Lane West		2	£11,000
	Brook Street		2	£6,000
St Ives				
Phase 1	Cattle Market		4	£11,000
Phase 2	Darwoods Pond		2	£10,000
	Globe Place		2	£12,000
Huntingdon				
Phase 1	Princes Street		2	£7,000
	Ingram Street		2	£5,500
Phase 2	Multi-Storey	4		£17,000
	Mill Common		2	£7,000
	Great Northern Street		2	£7,500
TOTAL	£127,500			
Phase 1		0	16	£46,000
Phase 2		4	16	£81,500

3.4 Charging

3.4.1 As part of the in installation and commissioning of the E.V. Charging Points, the Council is required to set the kilowatt hour (kWh) tariff which can be amended in the future. This can be set at any point from zero, where the Council is fully subsidising EV users.

3.4.2 The resident EV Survey 2020 (Appendix 1) identified:

- 87% of all respondents think it is fair for electric vehicle users to pay to charge.
- 83% of EV users think it is fair for electric vehicle users to pay to charge.

3.4.3 The Off-Street Parking Strategy adopted Financial Principles of Parking to ensure the Council has a fair, transparent and consistent approach to car park charging which include:

- We will seek to introduce a “pay for what you use” system to ensure that customers only pay for the time they spend in our car parks.
- We will ensure that our car parking fees are lower than the average index of car parking charges of our comparator authorities

3.4.4 EV charging is generally charged for but the cost of public EV points varies:

- Podpoint at Tesco £0.24 per kWh
- Podpoint at Lidl £0.23 per kWh
- Tesla £0.26 per kWh (where not priced per minute)
- Ecotricity £0.30 per kWh (+ £3 fee for 45 minutes)
- Shell Recharge £0.39 per kWh

3.4.5 Typical unit costs paid for energy are:

- Average UK domestic provisions £0.147 per kWh
- Average HDC provision £0.165 per kWh

3.4.6 Alternative options for tariffs taking account energy cost and the cost of infrastructure provision are:

Option 1: £0.00 per kWh – full EV user subsidy

It is estimated that a 'zero' tariff would incur following revenue growth expenditure:

- Year 1 £15k
- Year 2 £30k
- Year 3 £45k

Option 2: £0.22 per kWh

This is a cost neutral option covering the power used and the typical £0.05 per kWh charge added by EV suppliers covering the processing of funds.

Option 3: £0.29 per kWh

This would generate income above the ongoing revenue expenditure. This surplus would fund the capital hardware costs (£123.5k) by end of year 5 of operation.

Option 4: £0.35 per kWh

This would generate a surplus that will repay the capital hardware costs (£123.5k) by end of year 4 of operation.

The options make the following assumptions:

- That the utilisation of the charging points is:
Year 1 @ 5%; Year 2 @ 10%; Year 3 @ 15%; Year 4 @ 20% and maintaining at 20% for subsequent years. These assumptions are considered realistic following discussion with suppliers.
- That the Council can continue to purchase electricity at the same/similar rates to the current rate.
- The Council may choose to revise tariffs up or down based on the cost of electricity.

3.4.7 It is recommended, based on the Financial Principles of Parking, Residents' EV Survey, comparator cost analysis and level of capital expenditure that option 3, charging £0.29p per kWh is adopted. This will provide an operating surplus that repays the capital investment within 5 years. It is anticipated that an updated charging infrastructure is likely to be required after this time.

4. COMMENTS OF OVERVIEW & SCRUTINY

- 4.1 The comments of the relevant Overview and Scrutiny Panel will be included in this section prior to its consideration by the Cabinet.

5. RISKS

- 5.1 Project procurement may be done using an existing supply framework.
- 5.2 As with any engineering project some difficulties may be encountered meaning the estimated costs based on the survey work may increase by up to 10% so a contingency figure is included within the associated budget bids.
- 5.3 The project is unlikely to be impacted by COVID 19 as the works are outdoors and may be undertaken in a COVID secure way by the appointed contractor.
- 5.4 The costs of electricity may change meaning the Council may choose to revise its tariffs accordingly keeping in line with the Financial principles of parking established within the Off Street Parking Strategy.
- 5.5 EV charging and the development of EV's is a rapidly changing technology so there is a risk that in committing now to low charging, more advanced EVs may need greater power. This is a solution for now based on the current restrictions of electrical supply. Once implemented a further strategy to look at the emergent options for development of EV charging will be advisable within the next Parking Strategy to run from 2023.

6. TIMETABLE FOR IMPLEMENTATION

- 6.1 HDC Capital Funded

Phase 1 installation to be complete by mid-April 2021

Phase 2 installation to be complete by end-July 2021 (subject to budget approval)

- 6.2 Combined Peterborough and Cambridgeshire Authority (CPCA) Funded

A funding bid is being submitted to the CPCE as part of the 'Market Town Funding Programme' to fund the accelerated implementation of EV charging infrastructure to support town recovery and economy using sustainable transport. The outcome of the funding application is expected to be known by end Jan 2021. If the CPCA supported, the requirement to install in 2 phases will not be required. The project will then be a single phase of installation to be complete by end-April 2021

7. LINK TO THE CORPORATE PLAN, STRATEGIC PRIORITIES AND/OR CORPORATE OBJECTIVES

- 7.1 This project links to the Council Corporate Plan:

Vision: We want to support a safe and healthy environment

People: We want to make Huntingdonshire a better place to live, to improve health and well-being.

7.2 This project delivers the Council's Off Street Parking Vision & Strategy:

- Promoting environmental sustainability by supporting alternative fuel and travel methods.
- To survey all our car parks to establish technical feasibility for electric vehicle charging.

8. CONSULTATION

8.1 A public survey was undertaken (Appendix 1) in line with our Parking Strategy objective to 'assess demand and incorporate support for alternative sustainable travel methods within our car parks'. The aim of this survey was to capture the views of current EV users and understand the barriers of those who have not yet invested in this technology.

8.2 The survey ran for a period of 4 weeks from 6th April 2020 gathering over 400 responses from residents. Of the responses received:

- 151 responses were from owners of 'plug-in' capable vehicles (19% of the estimated number within the district).
- 119 responses were from Battery Electric Vehicle Owners (38% of the estimated number within our district)
- 32 responses were from Plug-in Hybrid Electric Vehicles (7% of the estimated number within our district)
- 87% of all respondents think it is fair for EV users to pay to charge. (83% of EV users think it is fair for EV users to pay to charge.)

9. REASON FOR THE RECOMMENDED DECISIONS:

9.1 The recommendations made in this report:

- are based upon the outcomes of customer and site feasibility surveys
- ensure that approximately equal spend is allocated to each St Neots, St Ives & Huntingdon during Phase 1.

9.2 The recommended tariff is based upon the Financial Principles of parking established within the Off Street Parking Strategy.

10. LIST OF APPENDICES

Appendix 1: Electric Vehicle Charging Survey 2020

Appendix 2: Hardware Feasibility Outcome

Appendix 3: Briefing Paper – House of Commons – EVs and Infrastructure
4/12/20

11. RESOURCES

11.1 The capital funding available to this project for installation of EV charging points is:

- 20/21 (Phase 1) £35.5k
(£37k for project with £1.5k spent on feasibility works)
- 21/22 (Phase 2) £88k
(subject to approval during the budget setting process)

12. BACKGROUND PAPERS

- HDC Parking Strategy – Cabinet 18th October 2018
<https://applications.huntingdonshire.gov.uk/moderngov/documents/s98295/Strategic%20Review%20of%20Parking%20-%20Off-Street%20Car%20Parking%20Strategy.pdf>
- HDC Parking Vision - Cabinet 12th October 2017
<http://moderngov.huntsdc.gov.uk/documents/s88617/Item%205%20-%20%20Strategic%20Review%20of%20Parking%20Report.pdf>

13. CONTACT OFFICERS

George McDowell (Operations Manager)
george.mcdowell@huntingdonshire.gov.uk

Neil Sloper (Head of Operations)
neil.sloper@huntingdonshire.gov.uk