

Report to: Environment Committee, 14th March 2023

Report of: Deputy Director, Corporate Policy and Strategy

Subject: BUSINESS CASE FOR THE INSTALLATION OF ELECTRIC VEHICLE CHARGE POINTS

1. Recommendation

That the Committee

- 1.1 accepts the offer of grant funding arising from the bid to the ORCS fund as detailed within this report.**
- 1.2 approves a spend of up to £55k from the allocated capital programme to install six dual charge points in Tallow Hill car park (to charge 12 vehicles simultaneously) and four dual charge points in King Street car park (to charge eight vehicles simultaneously).**
- 1.3 delegates authority to the Deputy Director, Corporate Policy and Strategy to undertake the procurement and award the contract in consultation with The Chair and Vice Chair of the Committee.**
- 1.4 approves that a market rate tariff should be applied for use of electric vehicle charge points as outlined within this report and delegates authority to the Corporate Director - Operations, Homes and Communities and the Corporate Director – Finance and Resources to implement a market rate tariff and to keep it under review annually.**
- 1.5 authorises the Corporate Director - Homes and Communities to make amendments to the relevant Car Parking Order as required to implement the proposals within this report.**

2. Background

- 2.1 The City Council's Policy and Resources Committee agreed on 8 February 2022 to make an allowance within the capital programme of £200K to install more electric vehicle (EV) charge points in the Council's car parks. This was subsequently agreed by Council.
- 2.2 Further to this, the Council's Environment Committee on 1 November 2022 approved the core proposals to install electric vehicle charge points at Tallow Hill and King Street, subject to preparation and approval of a business case.
- 2.3 The proposal to submit an external grant funding application to the On-Street Residential Charging Scheme (ORCS) was also approved by the Environment Committee on 1 November.

This application has now been approved and an offer has been received for 60% of the capital costs of the proposals within this report up to a maximum of £68,560.

- 2.4 The ORCS scheme is targeted at providing long stay charging for residents without off street parking. Council owned car parks qualify for this scheme, subject to location close to appropriate residential areas.
- 2.5 The November report proposed installation of up to 10 dual units at Tallow Hill and 6 dual units at King Street. Discussions with Government regarding the ORCS criteria, and more significantly further investigation into the costs of power network infrastructure required to facilitate the number of chargers proposed in the November report, indicate that this would be ineligible for ORCS support. This proposal is therefore for 6 dual units in Tallow Hill and 4 dual units in King Street.
- 2.6 Each of the charge points to be installed is a dual headed unit, capable of charging two vehicles at the same rate simultaneously. This investment builds upon the provision of six 50kw rapid and three 22kw fast charging points at St. Martin's Gate (SMG) car park, which continue to be extremely successful and well-utilised.
- 2.7 Following go-live of these charge points in October 2021, there have been over 12,000 individual charging sessions at the site, collectively powering EV vehicles to drive over 888,550 miles. Petrol or diesel cars would have released over 171 tonnes of CO₂ for an equivalent distance. The financial summary for the existing chargers at SMG including a projection for the next 10 years is set out in **Appendix 1**.
- 2.8 In line with Government policy to ban the sale of new petrol or diesel vehicles by 2030, the sales of EVs has been steadily increasing. In January 2023, the market share for EVs was already at 14%, with hybrids (plug in hybrids and 'mild' hybrids) representing a further 38% market share¹.
- 2.9 Providing more EV charge points in Worcester is a key element of the Council's Environmental Sustainability Strategy and a specific action within the Sustainability Action Plan.
- 2.10 Whilst many EV owners will charge their vehicle on their driveways the vast majority of the time, or only use public charge points on long distance journeys, 33% of households in Worcester do not have access to a driveway, and therefore have no opportunity to install their own EV chargepoint².
- 2.11 Data provided by Experian shows there are many households within the city with a high propensity to own an EV but without a driveway for installation of a home chargepoint. Mapping of this data indicates that there is a significant number of residents within walking distance of King Street and Tallow Hill car park that have a propensity to own an EV but are without off street parking. Ensuring that these residents are still able to switch to an EV, through the provision of readily available and accessible public charging, will increase the proportion of EVs in the City and reduce emissions.
- 2.12 The evidence presented above is a key eligibility criteria for the ORCS funding.

¹ [New UK EV and AFV Registrations - SMMT monthly data](#)

² [On Street Charging \(acceleratedinsightplatform.com\)](#)

2.13 An EV Charging Strategy for Worcester is currently being drafted by officers and will be brought to the June Environment Committee meeting. This proposal is in line with the proposed Strategy.

3. Procurement of the charge points in Tallow Hill and King Street

- 3.1 SWARCO was appointed to provide EV charge point technology to Worcester City Council for the SMG installation in 2021, following procurement using the ESPO 636-21 framework.
- 3.2 Several suppliers were evaluated for value, reliability, quality and customer service, amongst other factors. SWARCO performed highly across all areas and were awarded the contract to provide and install the charge points at SMG.
- 3.3 As a supplier on the above framework, with a track record of successful delivery for the Council, SWARCO can be appointed for the proposed work at Tallow Hill and King Street under the Council's procurement process.
- 3.4 Officers report that the existing contract is performing well. Officers have access to an on-line portal that gives details of performance including income, downtime, reported faults and resolution of these cases. Downtime of the units is low, at less than 4% overall, and faults and customer requests are dealt with efficiently by SWARCO.

4. Capital spend for the proposed charge points

- 4.1 SWARCO will be contracted to supply and install the charge points, along with all associated works, including the provision of bay marking, signage and protective bollards. They will also project manage the installation on behalf of the Council.
- 4.2 The only cost outside of SWARCO's scope is the works required from National Grid to provide the necessary power to the site.
- 4.3 All of the capital costs except the cost of the project management from SWARCO, are 'in scope' for the On Street Residential Chargepoint Scheme (ORCS) grant funding. This fund will provide up to 60% of the total capital costs of the project.
- 4.4 The table in **Appendix 2** shows the breakdown of costs and funding.
- 4.5 The award from OCRS is for £68,560. The Council would be required to fund the remaining £51,160.

5. Revenue spend for the proposed charge points

- 5.1 There are a number of ongoing revenue costs to facilitate the use of the charge points and ensure their operation and reliability. These charge points will be added to the maintenance schedule with SWARCO. This provides an annual maintenance visit and unscheduled maintenance as required.
- 5.2 The charge points will also be added to SWARCO's E-Connect service, as with the St Martin's Gate charge points, providing a payment platform for ease of use. SWARCO also provide a dedicated, 24/7 helpline for users should they encounter any difficulties with the charge points or payment platform.

- 5.3 The capital sum and interest will need to be paid back over 10 years at a rate of £6,256 p.a.
- 5.4 The total fixed revenue costs are expected to be £17,0448 p.a., covering maintenance, insurance of the units, the e-connect service and minimum revenue provision (MRP – provision for interest plus capital repayment) for the amount borrowed. These fixed costs represent the total liability to the Council annually of the charge points.
- 5.5 The Council currently pays electricity at a rate of 18p per kWh (day rate).
- 5.6 There is a potential loss of parking income at King Street as the EV bays will replace well used pay and display bays. Whilst customers using the bays will pay the standard cost of parking, and parking is free between 21:00 and 07:00, there may be occasions when the EV bays are empty when previously occupied by petrol- or diesel-powered vehicles. There will naturally be some displacement of this custom into other Council car parks. An estimated allowance of a loss of £10k per annum is included in the break-even calculations later in this report.
- 5.7 There is not thought to be any cost from a loss of parking income at Tallow Hill car park, due to the current spare capacity of this car park.

6. Revenue from the proposed charge points

- 6.1 The Council's current charge per kWh for the use of fast chargers at SMG (7-22kW chargers) is 39p/kWh. This rate is used in the business case for the charge points being proposed for Tallow Hill and King Street.
- 6.2 The Council's agreed policy is to apply a market rate for EV charging. Setting the rate for SMG is delegated to officers and this delegation is proposed for the new chargers at Tallow Hill and King Street.
- 6.3 Prices will be revised subject to market conditions.
- 6.4 Any surplus income can be invested back into the service and support expansion of the service where capital grant funding is not available.

7. Break-even point.

- 7.1 The table in **Appendix 3** details the fixed and variable costs associated with the charge points and gives a minimum number of charging sessions per chargepoint in order to ensure the fixed costs can be paid from the income taken.
- 7.2 The project is presented as a whole, and the two car parks are also presented separately.
- 7.3 For Tallow Hill each chargepoint needs to be used an average of just under 3 times per week (for an average usage of 30kWh), in order for the break-even position to be reached. Tallow Hill currently has spare capacity at all times and therefore there is no allowance for loss of revenue from standard pay and display parking in the 15 spaces that will be replaced by the EV bays.
- 7.4 The break-even point for King Street will be achieved with an average of under 7 uses per charger per week.

- 7.5 For the project as a whole break-even will be achieved with 4,500 average sessions per annum which equates to 86 sessions per week or 4.3 sessions per charger per week.
- 7.6 Usage of SMG is not directly comparable as most of the chargers are used for shorter stay rapid charge. However, the current rate of usage current usage at SMG is at a run rate of over 300,000 kWh p.a. compared to the breakeven point of the proposed project at 134,500 kWh.
- 7.7 Considering the rapidly increasing number of electric vehicles in the city, the data on local propensity to purchase electric vehicles, and the anecdotal requests Councillors have had from local residents without driveways for public charging, it is this is a reasonable expectation that the break-even usage will be exceeded.

8. Parking Charges

- 8.1 Whilst charging, customers will be required to pay the standard parking charge for the respective car park.
- 8.2 There is no charge for parking between the hours of 21:00 and 07:00.
- 8.3 Customers may only park in EV bays whilst actively charging between the hours of 07:00 and 21:00.
- 8.4 A maximum stay of four hours will apply to the EV bays between the hours of 07:00 and 21:00.
- 8.5 The Car Parks Order will be varied to accommodate EV charging in these two additional car parks.

9. Alternative Options Considered

- 9.1 The report to Environment Committee in November 2022 outlined the options which had been considered and gave the rationale for the choice of Tallow Hill and King Street.
- 9.2 There are many variations which could be considered, although the proposals that support the business case within this report are predicated on successful award of the ORCS grant.
- 9.3 Other car parks and locations would not attract ORCS funding which is crucial to providing a return on the Council's investment. Further experience of operating in this market will enable business cases to be developed for additional locations.
- 9.4 Doing nothing and not installing any more charge points would not be in line with our commitments in the adopted Environmental Sustainability Strategy.

10. Implications

- 10.1 Financial and Budgetary Implications
Calculations for a financial break-even point are presented within the report.

The principle of using a market rate fee to use the charge points was approved in July 2021 by Policy and Resources Committee. The current rate for the fast chargers is 39p/kWh. It is proposed that this fee will apply to the charge points proposed in this business case.

The allocation in the capital programme is for up to £200k to fund charge points across the city. This capital spend will come from borrowing, which for this project will be £6,256 per annum.

The total ongoing revenue liability to the Council is £17,066. This is the cost of the required maintenance, upkeep, insurance and MRP (minimum revenue provision for borrowing) of the charge points, if they are not used at all and therefore there is no contribution towards these fixed costs from the income taken. It is expected that the chargers will instead provide a small surplus to the Council which can be invested in the Council's EV network.

10.2 Legal and Governance Implications

The terms of the grant offer require the Council to ensure the charge points remain active and available for use for a minimum of seven years.

The charge points will be managed internally following the same approach as for the charge points in St Martin's Gate, by a multi service project team led at Deputy Director and Head of Service level.

Implementation of the proposals within this report requires a variation to the Car Park Order, which can be delegated to officers. The variation process requires a statutory notice period of 21 days during which the variation will be advertised in relevant car parks, on the Council's website and in the local media.

10.3 Risk Implications

There is a financial risk if usage is lower than the minimum required to break even. This risk is assessed as low given the evidence of propensity to own an EV in the immediate area and the national trend in increasing EV ownership.

10.4 Corporate/Policy Implications

This business case is in line with corporate commitments to increase the number of EV charge points in the city and the provision of a funding allocation in 2022 to do this.

An EV Charging Strategy for Worcester is currently being drafted and will be brought to the June Environment Committee. This report is in line with the proposed Strategy.

10.5 Equality Implications

An equality impact assessment has been carried out for this proposal and no significant adverse impacts have been identified. The charge points will be accessible to those with mobility difficulties.

10.6 Human Resources Implication

There are no identified human resource implications from this business case.

10.7 Health and Safety Implications

No significant implications arise from this report.

10.8 Social, Environmental and Economic Implications

Encouraging and facilitating residents, businesses and visitors to Worcester to transition to an EV is in line with the Council's commitments within the Environmental Sustainability Strategy. EVs will reduce the carbon emissions from transport in the city and also improve air quality by removing tailpipe emissions such as nitrous oxides and particulate matter.

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Background Papers: None

Appendix 1

Appendix 1

EV Chargers at SMG	Year									
	1	2	3	4	5	6	7	8	9	10
	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32
Income	74,234	112,236	123,459	135,805	149,386	164,324	180,757	198,832	218,715	240,587
Variable costs	-52,647	-58,163	-63,663	-69,712	-76,367	-83,687	-91,739	-100,596	-110,339	-121,056
Fixed Costs	-23,099	-23,099	-23,099	-23,099	-23,099	-23,099	-23,099	-23,099	-23,099	-23,099
Surplus/Deficit	-1,512	30,973	36,697	42,994	49,920	57,538	65,919	75,137	85,278	96,432
Notional Cost of borrowing	-46,500	-46,500	-46,500	-46,500	-46,500	-46,500	-46,500	-46,500	-46,500	-46,500
Net Surplus / Deficit	-48,012	-15,527	-9,803	-3,506	3,420	11,038	19,419	28,637	38,778	49,932

Costs

	Tallow Hill	King Street	Total
Number of dual charge points to be installed	6	4	10
Cost per chargepoint	£9,746	£13,945	
SWARCO cost	£51,753	£41,775	£93,528
National Grid cost	£6,721	£14,005	£20,726
Total cost eligible for ORCS funding	£58,474	£55,780	£114,254
ORCS contribution (60%)	£(35,084)	£(33,468)	£(68,552)
SWARCO project management cost (not eligible for ORCS contribution)	£3,820	£1,638	£5,458
Total net capital for Council to fund	£27,209	£23,950	£51,159

Break even calculations

Appendix 3

WHOLE PROJECT			Notes
Fixed costs (annual)	Maintenance	£4.2k	Provider charges
	System and call centre costs	£4.1k	Provider charges
	Insurance	£2.5k	Estimated addition to Council Policy
	Cost of borrowing	£6.3k	Interest and Capital repaid over 10 years
	Estimated loss of parking revenue – King Street	£10.0k	
	Total	£27.1k	
Variable costs	Electricity	£0.18p/kWh	Current supplier contract price, ends 31/03/23
	Card transaction costs	20p/transaction	Provider Charges
Income	Fee to use the charge points	39p/kWh	Current charge to customer
Contribution towards fixed costs from each kWh (Income less variable costs)		Approx 20p/kWh	Calculated as 39p/kWh income less cost of electricity 18p/kwh less transaction processing costs approx. 1p/kWh = 20p per kWh
Minimum kWh usage required to break even		Approx. 134,500 kWh p.a.	Fixed cost £27.1k divided by the 20p per kWh contribution.
Average kWh drawn per charge session		30 kWh	St. Martins Gate EV chargers are currently averaging 25 kWh per session, 7kW chargers are targeted at local residents for overnight and long stay, plus some shorter usage
Minimum number of charging sessions to break even		4,500 p.a.	Calculated as 135,500 kWh divided by 30 kwh per session
Minimum number of charging sessions to break even		12.3 average charging sessions per day or 50 hours charging per day across 20 charge points This equates to 86 average sessions per week or 4.3 sessions per charger per week	4,500 sessions p.a. divided by 365 days

BY CAR PARK		Tallow Hill	King St.	Notes
Fixed costs (annual)	Maintenance	£2.5k	£1.7k	Provider charges
	System and call centre costs	£2.5k	£1.6k	Provider charges
	Insurance	£1.5k	£1.0k	Estimated addition to Council Policy
	Cost of borrowing	£3.8k	£2.5k	Interest and Capital repaid over 10 years
	Estimated loss of parking revenue	-	£10.0k	Capacity in TH means no loss of revenue, does not take displacement into other car parks into account
Total		£10.3k	£16.8k	
Variable costs	Electricity	£0.18p/kWh	£0.18p/kWh	Current supplier contract price, ends 31/03/23
	Card transaction costs	20p/transaction	20p/transaction	Provider Charges
Income	Fee to use the charge points	39p/kWh	39p/kWh	Current charge to customer
Contribution towards fixed costs from each kWh (Income less variable costs)		Approx 20p/kWh	Approx 20p/kWh	Calculated as 39p/kWh income less cost of electricity 18p/kwh less transaction processing costs 11pprox.. 1p/kWh = 20p per kWh
Minimum kWh usage required to break even		Approx. 51,500kWh p.a.	Approx. 83,000kWh p.a.	Fixed cost divided by the 20p per kWh contribution.
Average kWh drawn per charge session		30 kWh	30 kWh	St. Martins Gate EV chargers currently average 25 kWh per session, 7kW chargers are targeted at local residents for overnight and long stay, plus some shorter usage
Minimum number of charging sessions to break even		1,720 p.a.	2,770 p.a.	Calculated as minimum break even kWh divided by 30 kwh per session
Minimum number of charging sessions to break even		4.70 average charging sessions per day or 22	7.58 average charging sessions per day or 30	

	hours charging per day across 12 charge points This equates to 33 average sessions per week or 2.7 sessions per charger per week	hours charging per day across 8 charge points This equates to 53 average sessions per week or 6.6 sessions per charger per week	
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