

## **ELECTRIC VEHICLE CHARGE POINTS – COUNCIL CAR PARKS**

**Summary:** This report identifies an opportunity for the Council to install Electric Vehicle Chargepoints (EVCs) in Council owned car parks, as part of its Climate Change and Environmental Sustainability agenda.

These will help provide the infrastructure necessary to encourage and enable uptake of Electric Vehicles (EVs) and will benefit both local residents who do not have off street parking and therefore, domestic EV charging options, as well as normal car park users. Such provision also helps support our market towns' economies, by extending dwell times for customers and visitors.

The Government's Office for Low Emission Vehicles (OLEV) is accepting applications for grant funding of up to 75% of the capital full cost of installation of EVCs by local authorities to provide the necessary infrastructure to help the growth of Electric Vehicle (EV) ownership.

Six public car parks across the district are proposed for this project, which could be commenced immediately. In addition, the Council Offices car park at Cromer is also considered, but under a grant different funding scheme.

**Conclusions:** The number of EVs in the UK is predicted to grow very significantly in coming years with a gradual move away from fossil fuels. This gives rise to a need for EVCs and there is little doubt that councils will be expected to provide them on public car parks as part of the enabling infrastructure for low emission vehicles. At this point, the government needs early development of infrastructure, hence the grant scheme being provided.

Whilst there are financial risks associated with such an installation now, mainly around forecasting numbers of EVs and therefore potential usage hours, especially in the early years of operation, the opportunity to obtain funding from central government significantly improves the financial viability and partly mitigates the risks associated with installing the technology.

- Recommendations:**
- 1. Cabinet approves an EVC installation project at six Council owned car parks across the District, with the work being phased if required to enable the maximum grant funding from government.**
  - 2. Cabinet recommends to Full Council the approval of a capital budget of £248,600 to fund the EVC installation project as described in the report. This to be funded from capital reserves and OLEV grant from Government as described in the report.**
  - 3. That, assuming this budget is approved, officers are authorised to:**

- a) **appoint Inspired Renewables on the basis of their experience and involvement to date, to undertake further work to finalise the necessary applications to OLEV, seeking the available grant funding, at a cost of £5,000**
- b) **procure the necessary ground works, cabling and installation of the EVCs**
- c) **procure a contract with a back office payment services provider for the charging mechanism**
- d) **bring forward any necessary changes to the Council's Car Parking Order to allow for EVC spaces**

Reasons:

- 1. Electric Vehicle Charging Points are an important component in encouraging the uptake of Electric Vehicles, with resulting positive environmental benefits.
- 2. To provide the necessary budget for the project
- 3. To provide the necessary arrangements for installation and customer use of the EVCs once installed.

## **1. Introduction**

- 1.1 The Council has committed to moving forward with a work programme based around tackling climate change and protecting the environment and plans to bring forward a theme in the emerging Corporate Plan to underwrite this commitment.
- 1.2 One of the key areas of this work will be reducing the Council's own carbon footprint along with supporting initiatives to enable others to do the same.
- 1.3 The move towards electric vehicles (EVs) is now gathering pace, with approximately 200,000 currently on the road in the UK and this number set to increase to around 6 million by 2030. The Government has set out plans to provide the infrastructure to allow this and the provision of grant funding electric vehicle charging points (EVCs) is a key part of that.

## **2. Background**

- 2.1 Earlier this year, the Government published its strategy "The Road to Zero", outlining steps towards cleaner road transport. Part of this strategy was to highlight their £4.5million investment in support of EV owners and potential owners who do not have facilities to charge at home, such as a garage or driveway. This investment is made in the form of grants awarded to local authorities who are able to offer suitable alternative provision, such as through the use of their public car parks.
- 2.2 Reports from the Independent Committee on Climate Change, and the Department for Business, Energy and Industrial Strategy, show that transport is now the largest sector for UK greenhouse gas emissions at 27%). Road transport is also one of the biggest contributors to poor air quality in our towns.
- 2.3 As well as being an essential provision to support the transition away from fossil-fuelled, internal combustion engines, EVCs can be a win-win; cutting transport costs, improving our environment and quality of life, whilst adding to the local economy and providing an income stream to the Council.

- 2.4 The 200,000 EVs on the roads in the UK, account for just 0.5% of all cars. The number is estimated to reach at least six million vehicles by 2030. By 2040, sales of brand new internal combustion engine vehicles are expected to be virtually zero.
- 2.5 Current Government evidence shows that around 90% of EV drivers do 90% of their charging at home, which poses a real obstacle to people who do not have personal, off street space at their home, where they could install a domestic EV charge point. The market town centres of North Norfolk have a high proportion of properties that do not have appropriate off-street charging space and provision of public charging infrastructure is therefore essential for those residents, if they are to be converted over time to EV use.
- 2.6 In addition, there is already a growing demand from EV owners for EVCs at car parks in popular destinations. Potential visitors to this area are therefore likely to start to make decisions on their preferred destination based upon the availability of EVCs. Local businesses who rely on customers who travel to or around the District by car will also begin to look to the Council for infrastructure that supports EVs.
- 2.7 The Office for Low Emission Vehicles is a team working across government to support the early market for ultra-low emission vehicles and is administering the Charging Investment Infrastructure Fund. Public car parks are seen as an essential part of the required mix of sites for EVCs and as such, the OLEV grant scheme allows for 75% funding over the coming three financial years, ie 2019-2022, although there is some concern that the scheme will not run for that long.

The grant criteria, likely EV owner behaviour and the need to provide best value, all drive the type of EVCs to be adopted; essentially pointing to the use of 22kw "Type 2 Fast" Chargers, which provide an average EV with full charge in around ninety minutes. In terms of public car parks, this allows an EV to be charged within the average national shopping stay of two hours. However, it is anticipated that over time, drivers will 'top up' charge wherever an EVC is available.

Applications for funding are being accepted by OLEV for EVC installation work in the current year, of grant value up to £100,000 in the financial year, and this may be repeated in two future years. Whilst it is not possible to front load an application for more years of the programme, it is possible that grant funding may be approved at a higher level for work that can be completed in this financial year. If the fund is used up in earlier years, potentially leaving nothing for later applications, the scheme may close. Discussions on this point are continuing however.

- 2.8 Quite clearly, the proposed project fits well with the Council's commitment to climate change and environmental sustainability and, although public car park chargers will not reduce the Council's carbon footprint, this should be seen as the council providing community leadership by enabling others to make the move to EVs by providing the facilities to charge in public places. There is however, a proposal within the report to provide the Cromer office car park with EVCs, primarily for Council owned vehicles, as these are changed to EVs, and also for staff, as uptake increases.

### **3. Progress to Date**

- 3.1 Officers commissioned some preparatory work by local consultants, Inspired Renewables, in March of this year, to consider a number of the Council's car parks, which might be eligible for the OLEV grant; ie close to housing with no off street

parking provision.

Initially, sites were also considered where enabling works can be undertaken relatively easily or as part of wider works. The Cromer office car park was also considered under a different funding scheme.

The work already undertaken included submitting applications to UK Power Networks, in order to help identify the best sites and provide cost estimates for the work that is required to bring a suitable power supply into each car park. In addition, the options for electricity charging and payment mechanism were also considered. An initial financial case was provided by the company and this has been the subject of some sensitivity analysis by the Council's Finance Team at Appendix 1.

The OLEV application process will also require an appropriate procurement process to be followed, to ensure the Council obtains best value, which would be undertaken within our normal processes, using existing contracts, frameworks and tender processes. In addition, the formal application process will be required and it is recommended elsewhere in this report that Inspired Renewables are appointed to further support the application process and associated work.

- 3.2 The provision of EVCs at the Cromer offices, will be eligible for a separate Workplace Funding Scheme. A separate costing has been sought for these works which are estimated at £28,540 after grant funding.

This would allow council and staff owned EVs to charge on site. Whilst initial income would be low, it is recommended that this installation is undertaken as part of the same programme. This will minimise costs and help enable staff to take up EVs and also the purchase of EVs for the small fleet of vans the Council uses. It may be possible to use electric pool cars for some staff duties and this will be subject of later consideration.

- 3.3 As this infrastructure is relatively new, there is very limited information available on existing use patterns which does give rise to an associated financial risk. Importantly however, this project should be seen as enabling behaviour change (ie moving to EVs) rather than a purely commercial exercise. That said, it will help commercially, in futureproofing our car parks for the rise in EV numbers.

A number of assumptions were therefore made at an early stage of the project development work to ensure any installation gives best value and potential growth options for the future. These are detailed below:

- provision of EVCs across larger car parks in both inland market towns and tourist areas, thus providing support for both local and visiting customer demand, as well as residents' needs for charging points where off street parking does not exist
- as far as possible, future proofing initial installations to allow efficient installation of subsequent EVCs to respond to predicted increased uptake
- EVC numbers to best match the electrical supply at each of the six car parks under consideration, thus minimising connection costs as far as possible
- electricity costs based on government estimates for future prices
- estimated rates of usage based on anticipated EV numbers and some very limited use and charging patterns from other Councils.

- 3.4 Whilst the overall project is planned to provide EVCs for all six car parks as well as the main office, the project may need to be split across the two years of the OLEV funding scheme if the Council is to take advantage of the grants available. Officers

are still in discussion with OLEV regarding the possibility of a single programme of works with funding guaranteed up front.

The initial proposal is to undertake EVC works at Cromer Meadow car park in autumn 2019 to coincide with the refurbishment of the North Norfolk Information Centre, along with Stearman's Yard Wells and New Road, North Walsham, both to coincide with toilet refurbishments.

The other car parks (Albert Street in Holt, Queens Road, Fakenham and Morris Street Sheringham) would then follow, depending on the availability of the OLEV grant funding.

- 3.5 Initial discussions have taken place between key members and officers and the initial costings identified. This project will be used as a pilot for the new project governance regime currently being introduced for all council projects.

#### **4. Financial Implications**

##### 4.1 Capital budget

- 4.1.1 Whilst the cost of purchase and commissioning of EVCs is relatively fixed per unit, the cost of installation of EVCs in the Council's car parks varies. This is mainly due to the fees charged by UK Power Networks (UKPN) for connecting to and, where necessary, upgrading, the local electricity supply infrastructure. This is dependent on the distance from an existing three phase supply and also the size of that supply. Therefore, standardised costs have been assumed for small civils works and meter boxes, cabling, etc. with UKPN estimates obtained specific to each site. The Council's Property Services Team have advised that the civils costs estimates obtained are appropriate for this proposal.

- 4.1.2 The proposed project budget sheets are contained within Appendix 1 and cover the capital costs of delivering across all six proposed public car parks and the Cromer Offices, at a total estimated cost of £248,600.

It is assumed that £150,000 of this cost is then provided by the OLEV grant and £3000 from the Workplace EVC Grant. However, there is a risk that, in each year of the OLEV scheme, the grant funding may be oversubscribed with nothing further then being provided by Government. As noted above, whilst this may change positively, the scheme as written, will only fund a grant up to £100,000 in each of the three years of its proposed availability.

Members therefore have a number of options:

- commit now to all sites being delivered as soon as possible dependent on government grant funding being available. This is recommended, as it appears to represent least risk.
- commit to all locations for the project and immediately deliver those, assuming the current year funding at the lower level only will be available, thus losing £75k of potential grant funding for the later works
- as above, but splitting delivery over two years to better align with other improvement works on some car parks, but in the knowledge that grant funding may not be available in future years,
- or to make a decision on each year's spend, assuming the grant fund opens each year
- in addition, it is possible to take a lower level of provision on some sites, with fewer EVCs and resulting less infrastructure cost from UKPN, but this would

not protect our supply for further EVCs in future years, making future extensions to EVCs much more expensive

- 4.1.3 It is assumed the programme would prioritise infrastructure provision at the Meadow car park in Cromer, Stearman's Yard in Wells and New Road, North Walsham. These would match up best with building refurbishments that are already planned on these sites and could be completed within the current financial year.

The second phase would then be Morris Street car park in Sheringham, Queens Road, Fakenham and Albert Street in Holt which would be brought forward as soon as grant funding was confirmed.

It would be possible to consider additional installations at other car parks where the off street parking issue allows an OLEV grant application, either initially or for later years of the OLEV scheme depending on availability of grant funds, and Members' views are sought on this point.

- 4.1.4 The full cost of installing the EVCs and related infrastructure is estimated at £248,600, broken down by site as follows:

- Six EVCs at Meadow Car Park, Cromer - £31,540
- Six EVCs at Stearman's Yard, Wells - £37,540
- Four EVCs at New Road, North Walsham - £30,360 (lower UKPN capacity)
  
- Six EVCs at Albert Street, Holt - £31,540
- Six EVCs at Queens Road, Fakenham - £48,540 (Higher UKPN costs)
- Six EVCs at Morris Street Sheringham - £37,540
  
- Four EVCs on the Cromer Office car park - £31,540

Assuming an OLEV grant at £150,000 and a Workplace Chargepoint Grant of £3000, this would result in a estimated net capital cost to the Council of £95,000.

- 4.1.5 The Council's Finance team have undertaken a financial appraisal for the EV Chargepoints programme including a sensitivity analysis, which is attached at Appendix 1. A number of scenarios are considered as part of the analysis.

The analyses show a return on capital employed, discounted pay back and NPV. It is considered the pay back is considered reasonable and that the NPV figures are positive, which is usually an indication, in financial terms, that a project is worth undertaking.

It should be noted that there are some small differences between the figures analysed by the Council's Finance team, as further clarification from OLEV was not provided until after that analysis had been undertaken. However, this does not alter the substantive business case for the project, which is based on estimated costs in any case.

## **4.2 Revenue Budget**

- 4.2.1 A charging mechanism to allow users to pay for the use of the EVCs is allowed for within the proposals. This will involve procuring one of a handful of potential suppliers of this technology, for which a recommendation is contained elsewhere within this report. A contract with the supplier would cover all back office functions required,

which would then form an ongoing revenue cost, typically taken as a small charge for each transaction.

- 4.2.2 This would be based on a digital, card based system, where users register their credit/debit card to a payment services provider, who then manages the payment for the amount of electricity used and passes all payments through to the Council, with the Council paying its electricity bills as normal.

Various payment methods are available but it is recommended that the council uses a credit/debit card based system, which complies with the Open Card Point Protocol (OCPP). This enables a much wider use of EVCs, rather than a closed or “club” system, where customers can only use specified EVCs.

- 4.2.3 The customer pays a known rate for each unit of electricity used for charging, with the Council buying electricity at its normal rate and charging a higher rate to customers. It is anticipated that the Council would operate a lower tariff for evening charging to encourage use by local residents with no off street parking and a higher, daytime rate for visiting car park users.
- 4.2.4 The Council will retain full ownership and control of the assets and determine the fee structure for recovering its costs from EV drivers using the charge points. It is expected that the fee structure will evolve over time as electricity prices change and EVCs become more commonplace.
- 4.2.5 It is anticipated that EV drivers will pay for parking in accordance with the tariff in force at the car park and that the EVC spaces will be time limited for the more expensive, daytime charging period, which again is a requirement of OLEV funding. This eliminates the likelihood of EV drivers plugging in their car just to obtain free parking, or significantly overstaying after charging is completed.
- 4.2.6 By retaining full control over the fee structure and income process, the Council can choose to align it closely to the structures in place for parking, so that all existing car park income controls and performance monitoring can easily be applied to EV charging.

### **4.3 Likely Payback**

- 4.3.1 The forecast payback time for the Council’s investment in the project is around 4.5 years from installation, assuming the full grant payments of £153,000 are paid. This is based on a cautious estimate from Inspired Renewables of 60 minutes use for each EVC every day at present, but quite clearly, this will rise over time with additional EV ownership.

In addition, the limited information we have gathered from East Suffolk, Southend, South Norfolk and Babergh/mid Suffolk Councils shows a daily range of use per EVC of between 45 minutes and two hours.

## **5. Risks and Mitigation**

- 5.1 Whilst the removal from sale of petrol and diesel engine cars in the UK, is widely predicted to happen during the 2030s; it is not clear how rapidly the EV market will grow in the 2020s. There is a risk that demand for EV charging might be overestimated in the early years. However, current government estimates are that the existing 200,000 or so EVs on the road will double every two years over the next

ten years, to roughly 6 million.

- 5.2 Works in car parks always have a risk of disruption and therefore reputational effects for the Council. To mitigate this, the timing and positioning of the works will aim to minimise any detrimental impact on the service provided by each of the car parks. To avoid the busiest periods, the works on the first phase of the programme will be scheduled across autumn/winter of 2019/20. In addition, as the EVC works are being done at the same time as other works wherever possible, this will reduce disruption to one period only.
- 5.3 There is a risk that OLEV will not approve the grant application. To mitigate this risk, Inspired Renewables have already been in touch with OLEV via its delivery partner, the Energy Saving Trust (EST), to seek their views on the likelihood of success, which have so far been positive. Further contact has been made by officers and this is being maintained with EST in the weeks leading up to the formal submission, to help to ensure that the application has the greatest chance of success.
- 5.4 There is a risk that other providers will install EVCs near to Council owned EVCs, thus reducing demand for the Council's own charge points. This risk is partially mitigated by the Council offering 24-hour access, which is less likely with garages and supermarkets.
- 5.5 There is a risk that other factors may reduce demand for EVCs in future. This risk appears small at the moment, as we face such a significant increase in the number of EVs on our roads in the coming decade. The financial impact of this risk is mitigated now by the use of central government funds to cover 75% of the capital costs.
- 5.6 There is a risk that technological improvements in the available solutions may lead to hardware and/or software becoming obsolete and redundant. For example, the current practice is to use a contactless card for the payment transactions. The next generation of equipment will not require any cards, as it will simply recognise the car itself, when it connects. Planning to accommodate such potential developments will reduce the risk of redundancy and obsolescence
- 5.7 The Council also faces the risk, especially in early years, of the spaces designated for EVCs spaces sitting empty for at least some of the time. This poses a reputational risk which can only be resolved by good communication around the need to provide sustainable infrastructure for the future.
- 5.8 In addition, there is a potential loss of revenue at times of peak car park demand if any spaces are not being used. This is considered relatively small, due to the fact that our car parks do not operate at 100% occupation; also that the provision has to be seen as a necessary part of future proofing our car parking infrastructure.
- 5.9 Finally, there is the issue of scale, where the Council could be criticised for not going fast enough or not providing EVCs at all of its car parks. This could be mitigated by communicating that initially, a more prudent approach has been considered.

All six of the car parks mentioned above could be delivered within the first year of funding, with the only slight negative point being the EVCs would not all then match in with some of the other planned works eg for public toilet improvement.

## **6. Other options**

- 6.1 The option of doing nothing and wait for other providers to install EVCs within our



market towns would lose the strategic initiative our car parks provide.

- 6.2 The provision of lower charge, longer time EVCs, would be unattractive to shorter stay visitors and only benefit local residents.
- 6.3 Likewise, the provision of ultra-rapid chargers would only benefit a small number of users and as such is not covered by the OLEV grant funding
- 6.4 Charging points in other car parks could be considered at this time, whilst the OLEV funding is available. This would show the Council to be taking a bold approach to future proofing its assets and committing to the EV agenda, but needs to be balanced against cost. However, discussions with OLEV officials suggest that a partnership project with Town and Parish Councils and other community groups may also be possible as long as this could be achieved in advance of any grant fund closing. If this was possible, then a separate application would have to be made at a later date.

## **7. Conclusions**

- 7.1 The number of EVs in the UK is predicted to grow steadily in coming years with a gradual move away from fossil fuels. This gives rise to a need for EVCs and there is little doubt that councils will be expected to provide them on public car parks as part of the enabling infrastructure for low emission vehicles. At this point, the Government needs early development of infrastructure hence the provision of the OLEV grant scheme.
- 7.2 Whilst there are financial risks associated with such an installation now, mainly around forecasting numbers of EVs and therefore potential usage hours in the early years of operation, the opportunity to obtain funding from central government significantly improves the financial viability and partly mitigates the risks associated with installing the technology.

