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**Originator:**  
Paul Trott, Chief Executive, OPCC

**Decision number: 32/2018**

**Submitted to: Martin Surl, Police & Crime Commissioner for Gloucestershire**

**Subject: Electric Charging Points**

**Executive summary:**

This paper outlines the options for the installation of additional charging points within the Constabulary estate and highlights issues with the current external infrastructure which restrict the opportunities for staff to use public recharging points.

The options for upgrading the current infrastructure for charging points are raised because the existing points at HQ may become inoperable at any time due to their age.

A decision to install additional points at GTEC and Phoenix House will provide alternatives to the points at HQ, until they can be replaced and will also support the Constabulary's commitment to the Carbon Management Plan by supporting the move towards more electric fleet vehicles.

**Recommendation:**

1. To install three charging posts at GTEC and two charging posts at Phoenix House.
2. To Install two new electric posts at HQ (to replace the two existing points).
3. Consideration is given to replacing the "Rolec" electric post at Compass House with two (22kw) "Chargemaster" posts.
4. That it is noted that using charging points not owned by the Constabulary is currently not an option but that further work is carried out to explore the options available.

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<b>Outcome/approval by:</b>  Signature: <u>MAGI</u>  Date: 27 November 2018
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<b>Public access to information</b>  <i>Information in this form and associated reports is subject to the Freedom of Information Act 2000 and the Elected Local Policing Bodies (Specified Information) Order 2011. Where it has been indicated that this is a decision of significant public interest, all of this form except Part Two will be made available on the website of the OPCC.</i>  <i>Any information that should not be automatically available on request should not be included in Part One but instead on a separate Part Two form.</i>	
<b>Is this a decision of significant public interest?</b>  <i>This includes a decision with any impact on the community, expenditure in excess of £50,000, or any decision that would be of obvious interest to the media or the general public</i>	<b>Yes</b>
<b>Is there a Part Two form?</b> <i>This section should only include information that, if published:</i>  a) <i>would, in the view of the chief officer of the police, be against the interests of national security;</i> b) <i>might, in the view of the chief officer of police, jeopardise the safety of any person;</i> c) <i>might, in the view of the chief officer of police, prejudice the prevention or detection of crime, the apprehension or prosecution of offenders, or the administration of justice; or</i> d) <i>is prohibited by any enactment.</i> e) <i>breaches commercial sensitivity</i>	<b>No</b>
<b>Originator checklist (must be completed)</b>	<b>Comments including who has approved the report if applicable</b>

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Has legal advice been sought on this submission if required?	Yes, no comments to add
Has the Chief Finance Officer been consulted, if required?	Yes, no comments made
Have equality, diversity and human rights implications been considered, as appropriate?	Yes, no comments made
How is the recommendation consistent with the objectives of the Police and Crime Plan?	The recommendation supports the PCC's commitment to a "green and pleasant county".
Has consultation been undertaken with people or agencies likely to be affected by the recommendation?	Yes.
Has communications advice been sought on areas of likely media, community, staff or partner interest and how they might be managed?	Yes, no comments received
Have all relevant implications and risks been considered?	Yes.

**Part One – For publication**

**1. Purpose of the report**

This paper is submitted to bring to the Board's attention to issues with charging electric vehicles on Constabulary premises as the numbers of staff and operational electrical vehicles increase and to seek a decision on the organisation's appetite for additional charging points.

**2. Background**

The charging points at Headquarters were grant funded by the County Council. They made £4,000 available for these charging points, which is a relatively modest amount, meaning that funds only allowed for the purchase and installation of relatively primitive equipment which wasn't designed with longevity in mind.

The units are not robust and they are wired into the lighting circuits in the carpark. They are not capable of "fast charging". Component parts have been replaced over the last twelve months but these parts are now obsolete meaning that spares are no longer available. There is a real chance that the points will break down again at some point and consequently, will not be repairable.

Further to the above the increasing number of staff and operational electric vehicles does give cause for concern as the Forcewide infrastructure is limited. There is a real chance that demand for electric points could outstrip supply in some areas.

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The below lists where the “Chargemaster” points are and how they are set up:-

<b>FORCEWIDE CHARGING</b>		
<b>Location</b>	<b>Type post or wall mounted point</b>	<b>Availability (32 amp is faster charge)</b>
Barton Street	2 posts with 4 sockets	1 socket 32 amp, 1 blanked off, 2 sockets 16 amp
Cirencester	2 points with 4 sockets	all 32 amp sockets
Coleford	2 points with 4 sockets	1 socket 32 amp 1 blanked off, 2 sockets 16 amp
Dursley	2 points with 4 sockets	2 sockets 32 amp, 1 16 amp, 1 blanked off
Hesters Way	1 point with 2 sockets	both sockets 32 amp, 2 sockets 16 amp
Prism House	3 posts with 6 sockets	All sockets 32 amp
Quedgeley Police Station	1 point with 2 sockets	both 32 amp
Stow	1 point with 2 sockets	1 socket 16 amp 1 blanked off
Stroud	2 posts with 4 sockets	1 socket 32 amp 1 blanked off, 2 sockets 16 amp
Holland House	1 post with 2 sockets	both 32 amp
Bamfurlong	2 posts with 4 sockets	all 32 amp

It is possible at some sites to install additional charging points but some are already at a maximum load. However Chargemaster has introduced load management software on the Fastcharge range to maximise efficiency of available power supply in order to charge the highest number of electric vehicles. This allows higher efficiency for organisations such as ours when we have multiple electric vehicles on the fleet. Each new Fastcharge (22kw) charging post with 2 sockets will cost £2,290.

The data collection, maintenance and warranties are also an ongoing consideration which will have to be factored into the ongoing revenue budget.

### 3. Recommendation(s)

#### Options

##### **Option 1 – Do nothing – this is not recommended**

An option is to do nothing – this means that cars can continue to be charged at Prism House but access is an issue.

The post in the Compass House carpark is also available.

However there is an increasing number of staff who use the charging points at HQ for both their own and fleet vehicles and demand will soon outstrip supply.

The infrastructure at Headquarters is not robust and could fail at any time.

##### **Option 2 – install new points at GTEC and Phoenix House – five in total**

This option recommends the installation of three charging posts at GTEC and two charging posts at Phoenix House.

The total cost of these new points is £24,746, which includes three years data collection, warranty and a one year service and maintenance provision.

Ongoing revenue costs for these points are £1,740pa.

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Following the initial three year period (included above) an addition revenue amount of £1,800 is required to cover the data collection charges for subsequent three year periods (approx. £600 per annum).

### Option 3

**This is a follow on action and should be done after option 2 is completed. This proposes:-**

- **Replacement of chargers at Headquarters with two new units.**

The cost of installing points at HQ would be £10,140. (detailed above). Estates advise that this could be achieved with a minor variation to the PFI contract, although the cost needs to be confirmed.

This option may take a little time to implement as this building is subject to PFI contract.

- **Replacement of the post at Compass House**

The “Rolec” electric post at Compass House will be replaced with two (22kw) “Chargemaster” posts at a cost of £7,158 which includes three years data collection and warranty and one year service and maintenance.

Ongoing annual revenue costs of £696 and three yearly data collection of £720

It is proposed that the above costs are found from the Estates Reserve (subject to any contribution from the Road Safety Unit in respect of GTEC).

### Recommendations

It is recommended that **option 2** is progressed immediately and **option 3** is completed as a follow up.

The installation of points at GTEC and Phoenix House can be progressed without delay.

We own both buildings and we have installed charging points at all the other stations across the County. (The only exception is Hucclecote because at the time of the installation the future of that building was in question)

### Follow up actions

- further consultation with Tascor regarding any contractual requirements and associated costs in relation to HQ.
- timescale agreed to replace Rolec unit at Compass House with two Chargemaster posts.
- CGB supports further work on the four areas relating to external charging infrastructure listed above.

## 4. Financial and resource implications

Based on the 19 points across the county – (referred to as “units”), ongoing costs are as follows:-

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- Data collection is £360 per unit – but this is charged in three year blocks at a total of = £6,840 (or £2280 per year)
- Warranty for one unit each year - £99 per unit =  $19 \times £99 = £1881$
- Maintenance charges for one unit each year - £249 per unit =  $19 \times £249 = £4731$

This makes a total annual cost of £8892 per year for the existing units.

There are a number of issues that need to be considered regarding the increase in the electric fleet and the number of staff seeking to charge their electric vehicles at work.

Chargemaster were the company who were selected by South West Police Procurement following a tender process to provide charging points. A “Chargemaster” charging point, of the equivalent standard to those already installed at our stations, costs £2,290 and rapid chargers would be even more costly.

The Nissan Leaf electric cars which have been purchased will only charge at 7 kw so we could purchase charging units rated at that level. These are available from Chargemaster at a cost of £1,590 per unit, but will never have the option to fast charge.

The replacement of the points at Headquarters will require some negotiation with Tascor as there are logistical and contractual issues. Estates advise that this could be achieved with a minor variation to the contract.

### **Build costs for Headquarters (quotes provided by Tascor)**

- Upgrading supply to feeder pillars      £2,000
- Ground works                                      £3,200
- Charging posts £2,290 X 2                      £4,580
- Protective guards                                £ 360

Total of £10,140

### **GTEC and Phoenix House**

In addition to the upgrading of existing points at HQ, a number of points should be installed in the car parks at our GTEC and Phoenix House buildings.

The total cost of these new points is £24,746, which includes three years data collection, warranty and a one year service and maintenance provision. Ongoing revenue costs for these points are £1,740pa.

### **Revenue costs**

The ongoing revenue costs for charging points (five in total) at GTEC and Phoenix House will be:-

Data collection £360 for each unit charged every **3 years** = £1,800

Warranty for one year £99 per unit = £495 (Units are under warranty for the first 3 years)

Maintenance charges for each year £249 per unit = £1,245

Electric Charging Points

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**Compass House**

A new charging post was installed at Compass House as part of the build.

It is not a “Chargemaster” post so data usage is unavailable and warranty and maintenance costs are unknown. It would be useful to standardise the units so that data is available.

The cost of replacing this one post with (22Kw) Chargemaster units:

Charging posts £2,290 X2	£4,580
Ground works	£1,000
Protection guard	£ 360
Data collection	£ 720
Service and maintenance	£ 498
<b>Total</b>	<b>£7,158</b>

**Information regarding charging at points not owned by the Constabulary**

It should be noted that the ability to charge fleet vehicles at points not owned by the Constabulary is not currently available.

There are at least 20 different companies and organisations installing and running nationwide or regional electric car charger networks in the UK. Other Electric Vehicle (EV) chargers which are installed and run independently may be available to users of larger networks or simply at the discretion of their owners.

Typically, EV charger networks are run by energy firms and other companies wanting a slice of future profits from the growing car charging business, or local authorities and organisations who are more environmentally motivated.

This makes cross network charging complicated as each individual network requires an EV driver to register and carry a network-specific swipe card (RFID) or have an app on their Smartphone in order to use their charging points.

The more networks we want to use, the more cards/apps we'll have to have. Different charging networks run different membership models too, with some operating 'pay as you go' systems, some requiring significant subscription fees, and others offering free power and minimal sign-up fees.

This does seem somewhat complicated when staff are used to paying for fuel anywhere with the same fleet fuel card, but the situation has arisen because Government subsidies for network installers are only available if operators collect detailed data on usage patterns. Unfortunately, there's no standard national system to do that.

Our provider Chargemaster have very recently introduced “POLAR corporate” for fleet vehicles. For a fee of £6.54 per vehicle per month fleet vehicles can use their charging points. However there are only 12 charging points in the County and not all points provide free charging.

Other suppliers will require users to register using either their own or a corporate payment card. Some apps merely ask for credit or debit card info, and will charge based on time and power used. The phone sends commands directly to the point, telling it to start and stop, and to open access flaps. Other apps (such as PodPoint) require users to pre-load money into an account, much like Transport for London's Oyster card.

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Access and electricity costs vary. Some venues such as hotels and shopping centres give power away for free, but most posts cost around £1.50 per hour. Rapid chargers are generally more expensive, reflecting the fact that they can cram more electricity into the battery in a shorter time. An Ecotricity charger at a motorway service station will cost £3 to connect for up to 45 minutes, plus 17p for each kWh of electric. Other rapid chargers, such as those at some Shell stations, simply charge for the electricity. Currently, the rate is 25p/kWh, so adding 60 miles to a Leaf will cost about five pounds.

When using a public charge point controlled by an app, the mobile phone reception needs to be good enough for the charging point to receive data and for the user's app to connect to the network.

It is technically possible for staff who have smartphones to have apps installed but the issue is the number of apps. The option of a QR reader was explored but even when linked to a website staff would have to register and this is likely to be impractical.

In order to progress issues with external infrastructure, further work is required which includes investigating:-

- Polar corporate – cost effectiveness
- possible “partnership” options for charging electric fleet vehicles
- locations of charging points using pre-paid apps
- implications for Finance of issues such as setting up pre-payment cards and processing claims that would be made for reimbursement by members of staff.

### **5. Risk assessment**

The risk of not being able to service a growing number of electric vehicles within the Constabulary's fleet is the subject of this proposal.

### **6. Equality & Diversity impact assessment**

No such issues have been identified.

### **7. Environmental impact assessment**

Reducing the Constabulary's consumption of fossil fuels is key to its environmental approach. By providing more opportunities for electric vehicle charging, not only will this enable the Constabulary to procure and support more electric vehicles it will also encourage more staff to drive such vehicles to and from work.

### **8. Consultation**

Consultation has been undertaken with all affected parties internally and with potential suppliers of electricity and charging points.

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9. **Discussed with Communications & Engagement**  
Will be publicised via Internal Bulletin once installed.

**Originator approval**

**Name:** Paul D. Trott

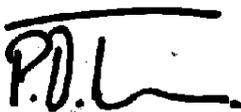
**Job title:** Chief Executive, OPCC

**Signature:** 

**Date:** 22 November 2018

**Chief Executive approval**

I am satisfied that relevant advice has been taken into account in the preparation of the report and that this is an appropriate request to be submitted to the PCC.

**Signature:** 

**Date:** 22 November 2018