

ELECTRIC TAXI VIABILITY PROJECT

Executive Summary

Electric Vehicles have developed significantly in recent years. However, limited understanding of the technology combined with negative perceptions as well as a lack of appropriate charging infrastructure have impacted greatly on the sales volumes of these vehicles. These issues are particularly acute in the Hackney Carriage and Private Hire trades.

Woking Borough Council's aspiration to deploy an electric vehicle Hackney Carriage fleet is intrinsically linked to its desire to implement an 'integrated transport system that promotes lower carbon, healthy transport choices, and the use of the electric vehicle charging network in Woking as well as links to the wider South East network (Woking Borough Council Electric Vehicle (EV) Position Statement, November 2017). The 'Woking 2050 - A Vision for a Sustainable Borough' document states that 'through its Core Strategy and Climate Change Supplementary Planning Document (SPD), the Council's Planning policies require that an electric vehicle charging infrastructure be included in new development' is further evidence that an electric Hackney Carriage Vehicle fleet will positively contribute towards the Borough being an enterprising, vibrant and sustainable place to live, work and visit.

The development of the Hackney Carriage fleet in this way also reflects the Council's staff transport plan with regards to vehicle emissions which, in turn, reflects the Government's development of national policy to encourage take up of hybrid and electric vehicles. In July 2017, the Department of Environment, Food and Rural Affairs (DEFRA) launched its Air Quality Plan which includes a ban on all new petrol and diesel cars and vans from 2040. The Plan also put £1bn towards the development of ultra-low-emission vehicles, as well as almost £100m to support the UK's EV charging infrastructure and to fund the 'plug-in car' and 'plug-in grant' subsidy schemes. Add to this the Government's Automated and Electric Vehicle Bill, published in October 2017, to encourage the uptake of electric and hybrid vehicles in the UK; a new £400m charging infrastructure fund, with an extra £100m in the plug-in car grant; a further £40m in charging research and development to be invested; and £220m investment for a new Clean Air Fund for local air quality plans, and we can see just how much of priority this matter is.

The Licensing Department have engaged Electric Blue's Evolve Taxi Evaluation Project to provide evidence regarding the development of the Hackney Carriage fleet. Electric Blue are a company aiming to install and operate a national vehicle charging network powered completely by renewable energy, in locations based on the deep understanding of operational profiles of taxis, delivery fleets and other high mileage vehicles. Evolve is straightforward to administer as it simply involves fitting a small device into a selected group of Hackney Vehicles. It also records the "centre of gravity" to highlight possible areas to install rapid chargers. Importantly, given that this proposal will greatly affect the trade, it would also engage them from the start.

Evolve utilises 'plug and play' vehicle telematics to gather relevant data from the taxi fleet by tracking their location and aggregating the data. The key information recorded is:

- time and date
- trip length
- start, route and stop location
- driver efficiency (calculated through analysing the number of harsh braking, accelerating and cornering events)

This data is then modelled to show the feasibility and business case had the driver been operating an electric vehicle during the same time period (examples attached).

The resulting report provides the drivers with the following:

- how many trips could they have made with an EV
- opportunities for charging (showing how many miles they could have added during idle time)
- the number of trips that could have been done with charging events during their shift
- the actual number of trips that would have been further than the range of a single charge (as most new vehicles will exceed 150 real world miles on a single charge, with many achieving 200+, it is not often the case that trips exceed this)
- the business case for using an EV - developed by showing a per mile saving versus their current vehicle (savings are drawn from cheaper 'fuel', zero road tax, reduced servicing costs and other financial incentives)

In addition, the reports aggregate the data to produce a feasibility report for the local authority showing the following:

- average trip length
- number of trips that could have been made with EVs
- centre of gravity
- in what area do most taxi trips take place (to show required charger locations)
- idle time and location of vehicles (to show charger output requirements i.e. if drivers are frequently stopping for 15 mins then a 50kW rapid charger is needed, if they stop for an hour then perhaps 22kW fast chargers are more suitable)
- emission reduction potential - based on mileage, driver efficiency and vehicle emission profile
- business case for drivers - how much could they save in reduced operating costs versus the capital outlay for the vehicle

Electric Blue produce a report to go to the Council at the end of the assessment period, based on all the drivers taking part, showing how many miles were driven and where, and estimating the fuel used and emissions created. The driver data Electric Blue provide Woking Borough Council will not identify the driver - their identity will be completely anonymous, and the Council will not know where or what their journey patterns were.

This assessment is also designed to help taxi drivers gain an understanding of their fuel consumption, emissions and total journey times over a three month period. The benefits to participating drivers include

- finding out how much money they could save on their taxi running costs, including fuel, licence and servicing etc by switching to an Electric Taxi (e-Taxi)
- eligibility for a free trial of an e-Taxi, plus priority in future heavily discounted e-Taxi rental programs
- a confidential report from Electric Blue on their journeys
- a no obligation quote for replacing your existing taxi with an e-Taxi

The service would be comprised of evaluation of 25 taxis, equating to approximately 15% of the total Hackney Vehicles currently licensed by Woking Borough Council, for a period of three months, provided at a competitive rate.

Should it be required, Electric Blue can also advise the Council on what type of chargers are needed and where to place them to reduce any disruption to drivers daily working patterns, including considerations for convenience (i.e. near shops, cafes, taxi ranks, train stations etc).

Woking Borough Council wishes to move towards a more professional looking and environmentally friendly fleet of Hackney Vehicles. The Evolve evaluation programme delivered by Electric Blue will provide the information needed in order for the Council to make an informed step towards this goal.

Woking Borough Council's Licensing Department is currently awaiting a start date from Electric Blue for the project.

Recommendations

The Committee is requested to:

RESOLVE That the report be noted.

The Committee has the authority to determine the recommendation(s) set out above.

Background Papers: None.

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