

Report of the Head of Programmes and Smart Place

Pre-Decision Report for Public Electric Vehicle (EV) charging provision

SUMMARY

1. The Executive are due to consider an update report on Public Electric Vehicle Charging at their meeting in March. The committee has asked for a pre-decision report to discuss the issues.
2. In light of the climate change emergency the council is looking across all areas in which it can make a tangible difference. To this end the council is reviewing electric charging with the aim of minimising environmental impact, improving air quality, improving working protocols and delivering greater lifetime value.
3. The transition of motor vehicle users to more sustainable, low carbon fuels is an important element of achieving the Council's carbon targets and greener and cleaner City ambitions. Central to this is the provision of an inclusive, cost effective, resilient and reliable Electric Vehicle (EV) charging network. The Council are in the process of developing the EV charging strategy where core general issues being addressed are:
 - Range anxiety (where will I be able to charge, will the charger be available and will I make it?);
 - Power management (will there be enough power to supply the increase in demand on the grid for charging electric vehicles?);
 - Funding to sustain the network (how will new assets, replacement assets and maintenance be funded?);
4. Amongst these are a number of issues that need careful attention as they have very local nuances:
 - Bay management in public car parks (where bays are allocated for EV charging);

- On street charging facilities (where residents do not have off street parking provision;

BACKGROUND

5. City of York Council is committed to creating a greener and cleaner city which has a thriving local economy, strong communities and a sustainable way of life. This can be no better illustrated than the Council's ambition to the reduction of carbon emissions to zero by 2030 and the resourcing of a number of projects that would make a real impact on the delivery of these targets.
6. An area where the Council can exercise significant influence is by supporting the transition to more sustainable means of transport for residents, visitors and businesses and internally for the Council's own fleet.
7. The Department for Transport's "The Road to Zero" sets out a framework to end the sales of conventional petrol and diesel cars and vans by 2040 and put the UK at the forefront of manufacturing and sale of ultra-low emission vehicles. The ambition is for all new cars and vans to be effectively zero emission by 2040.
8. Vehicles with reduced emissions range from efficient Euro 6d diesel and petrol vehicles, alternatively fuelled vehicles and parallel hybrids (which use traditional fuels (petrol or diesel) and have a supporting electric motor that is charged by the combustion engine). Ultra Low Emissions Vehicles include plug-in hybrids, fully electric vehicles (EVs) and fuel cell electric vehicles. There is a strong narrative in the Department for Transport's strategy for the production and uptake of Ultra Low Emissions Vehicles to play a large part in delivering on the strategy in the next 10-20 years.
9. Already nationally there is an increase in uptake of EVs with nearly 60,000 plug-in cars registered in the UK in 2018 marking the 7th consecutive year of growth and this is reflected locally in terms of sales of EV and demand on the Council's charging infrastructure.
10. There is a clear need for a local EV charging network that serves resident and business travel within the City and to act a link in the journey for EV drivers making longer journeys, locally or nationally.
11. Without the Council playing a role in developing the public EV charging network, it would be left to commercial networks to deliver a solution and this would not necessarily be cost effective and inclusive for York's residents, businesses and visitors.

12. This would mean that the uptake of EVs will be slower with a resulting impact on the key opportunities around climate change, air quality, and economic benefits. It would also mean that City of York council would not be able to influence tariffs at commercial sites which is likely to lead to higher tariffs for consumers. The Council network is designed to be fair for all by keeping the tariff low and the network promotes equity of access enabling more residents to benefit from EV usage not just the wealthy.
13. There are currently around 40 charging points that the Council manage and maintain, strategically placed in public car parks. It is understood through analysis of usage, government policy direction, increase in take up of plug in vehicles and resident, business and visitor feedback that this network will have to grow to meet future needs.
14. The Council have already secured funding for two Hyperhubs (ultra-rapid charging hubs) at Monks Cross and Poppleton Bar Park and Ride sites and further funding is being sought to provide 5% EV charging bays in all City centre car parks. This is to meet growing demand and also to provide facilities for residents who don't have off street parking (and the ability to plug in their vehicle at home). It is important to point out that the Hyperhubs are located at the Park and Ride sites for their strategic positions (east and west of the City on the outer ring road) and not because users would leave their car all day at the charging points (there are slower EV charging points within the park and ride sites for EV users who are using the park and ride).
15. In order to enable the shift from traditional petrol and diesel vehicles to plug in EV, motorists need assurance that they will be able to charge when they need to. This is commonly known as range anxiety. Increasing the amount of reliable charging points in the right areas (in order to act as links in journeys, will help this.
16. Work is being done at a national level to ensure that the National Grid is able to support the increase in EV take up and the Council are working with Northern Power grid to ensure that grid is ready when new developments, like Hyperhubs come on line.
17. At a local level there are two issues that the Council is working through to provide the right EV charging network, Bay management in public car parks and on street charging for residents without off street parking.

AREAS OF OPPORTUNITY

Bay management in public car parks (where bays are allocated for EV charging)

18. At present EV charging bays in Council car parks are inconsistently marked and have a charging unit between two bays at the foot of the bays. A charging unit services two bays. The EV user uses their own cable to attach their vehicle to the charging unit. In order to draw down power, the EV user subscribes to a service and starts and stops charging through an app or with an access card. The EV user is charged for the power they draw down. The Council monitors the usage through a back office system, which gives sight of how long the vehicle is connected to the charger and how much power was drawn down.
19. The EV user is not, as it currently stands, charged for the time spent parking. This gives the EV user free parking even when the car has finished charging. The current system is open to abuse as an EV owner can park all day free of charge and may only actually charge for a few minutes.
20. The consequence is that the bay is then not available for other EV users who do need to charge and lost parking revenue (though the Council is committed to a lower rate for low emission vehicles).

Options

21.

| | Pros | Cons |
|---|---|--|
| Current case - EV user parks all day free of charge regardless of if they are charging on not | <ul style="list-style-type: none"> • No new systems required • Easy for customers to understand • Easy for enforcement staff – if the car is connected to a charger they don't issue a ticket • Good incentive for users to plug-in, sends a clear message that we want drivers to switch to EV • May increase charging (and | <ul style="list-style-type: none"> • Council forgoes parking revenue • May not maximize EV income as one user can stay all day at a charger • Can stop additional users from accessing a charge point |

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| | <p>therefore EV revenue) as EV users are encouraged to plug-in every time they park, whereas they may only plug-in when absolutely necessary if they have to pay for parking</p> | |
| <p>Make all EV users pay for parking at all times</p> | <ul style="list-style-type: none"> • Easy to implement – no new systems required • Easy for customers to understand • Easy for enforcement staff • Maximises car parking revenue | <ul style="list-style-type: none"> • Doesn't incentivise EV use • May decrease charging events (and therefore forego EV revenue) as drivers may only plug in when absolutely necessary. • Would require revised signage to explain new regime |
| <p>EV users get free parking while charging and are then automatically charged for parking i.e. if a user parks for three hours but charges for one hour, they would receive one hour of free parking and be charged for two hours of parking</p> | <ul style="list-style-type: none"> • Easy for customers to understand • May be confusing for enforcement staff • Good balance between providing an incentive to use an EV and gaining parking revenue | <ul style="list-style-type: none"> • Requires new systems to implement – currently don't have a technical solution that will do this • More open to customer challenge if they feel the system has apportioned the split of EV and parking fees incorrectly • Would require revised signage to |

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| | | explain new regime |
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22. It is recommended that a piece of work is undertaken to investigate further options for reducing EV charging bay blocking. This could also include the review of tariffs, time limitations on bays and how technology can assist.

On street charging facilities (where residents do not have off street parking provision)

23. In order to create an inclusive environment for the take up of EV, it is important that charging is available to all including those living on, for example, terraced streets where they is no off street parking.
24. There have been examples across the UK of testing on street charging using power from public assets, such as street lights, and by running cables from residential properties to vehicles parked on the street. While on the face of it these seem like viable solutions, but there are a number of issues.
25. On street parking is part of the public highway and is usable by any vehicle, so there is no guarantee (even in a resident parking zone) that the EV users will be able to park near their own charging point (if a cable is run from their residence) or near a public asset where power is provided.
26. Rolling public charging out across entire streets (connecting to lamp columns) is a costly exercise in terms of upfront cost and maintenance and in areas where there are narrow footpaths and where lamp columns are near the property side rather than the kerbside this will make the footpath congested or inaccessible. There are also health and safety issues with connecting in this manner.

Options

27. The current approach is to match the Council's planning guidance and ensure that the Council's existing car parks are provisioned with 5% EV charging bays and well as providing the charging facilities at the Hyperhubs. These would then be made available to residents to park overnight.

| | Pros | Cons |
|--|---|---|
| Treat residents the same as other users | <ul style="list-style-type: none"> • No new systems required • Easy for customers to understand • Easy for enforcement staff | <ul style="list-style-type: none"> • Doesn't provide an recognition that using public chargers is less convenient for residents than being able to charge at home |
| Provide free overnight parking for residents with an EV | <ul style="list-style-type: none"> • Easy to implement – no new systems required • Easy for customers to understand • Easy for enforcement staff • Sends a clear message to residents to encourage EV usage | <ul style="list-style-type: none"> • Doesn't maximise car parking revenue |
| Provide discounted EV charging tariff | <ul style="list-style-type: none"> • Sends a clear message to residents to encourage EV usage | <ul style="list-style-type: none"> • More complicated to administer as need a solution for residents to be identified through back office system • Would require new systems to be developed • Loss of EV revenue, tariffs are set at a minimum level to cover operating costs, providing discounts would mean operating at a loss |
| Provide free overnight parking and discounted EV charging tariff | <ul style="list-style-type: none"> • Sends a clear message to residents to | <ul style="list-style-type: none"> • More complicated to administer as need a solution for residents to be |

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| | encourage EV usage | identified through back office system <ul style="list-style-type: none"> • Would require new systems to be developed • Loss of EV revenue, tariffs are set at a minimum level to cover operating costs, providing discounts would mean operating at a loss • Council would also forego parking revenue |
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28. There is an opportunity to explore different opportunities for on street provision and as technology advances, in terms of inductive and wireless charging, the viability of on street charging will increase. It is recommended that an appraisal is made of options around on street EV charging, including options for future implementation and geographical locations for these charging points.

RECOMMENDATIONS

29. Economy and Place Policy and Scrutiny Committee are asked to review the options in the body of the report and make suggestions so that these can be considered by the Executive.

Reason: To ensure that there is a robust, resilient and inclusive approach to the development of public EV charging infrastructure.

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**Report
Approved**



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Specialist Implications Officer(s) None

Wards Affected: All



For further information please contact the authors of the report

Background Papers

None

Abbreviations

EV – Electric Vehicle