

Manchester Electric Vehicle Charging Strategy

(December 2022)



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1.0 Introduction

1.1 There is a nationally led de-carbonising agenda with the UK being the first country to introduce legally binding long-term emissions reduction targets, known as carbon budgets. The UK has legislated to end our contribution to climate change by 2050. Greater Manchester also has a target to be a zero carbon city region by 2038. Transport is now the largest contributor to UK domestic greenhouse gas (GHG) emissions, contributing 24% of UK domestic emissions in 2020 although this is a reduction of 23% since 1990. Cars and taxis make up 52% of domestic transport emissions¹. To help combat transport produced emissions and to meet the 2038 zero carbon commitment the main priorities of recent transport policies is to both reduce the need to travel and where possible to use more sustainable means such as public transport or active travel modes. However, this may not always be feasible and there is an acceptance that cars will still be used for some journeys but in these cases the cars should be as least polluting as possible.

1.2 The switch to Ultra Low Emission Vehicles (ULEV), and particularly to electric vehicles (EVs), will be a key component in the drive to meet these targets. In the UK, an EV is estimated to have GHG emissions which are 66 per cent lower than a petrol car and 60 per cent lower than a diesel and these emissions will further reduce as the proportion of electricity produced from renewable and low carbon sources increases². There are government plans to ban the sale of new petrol and diesel cars by 2030 which will result in increasing numbers of EVs on our roads, both privately owned by residents and commercial vehicles, which will require regular battery charging. Most of the charging of private cars currently takes place overnight at residential properties but this is not possible where there are no off-street parking facilities. Within Manchester approximately 60% of homes do not have access to off-street parking, therefore Manchester City Council (MCC) needs to develop a policy about how it can assist these residents in where and how EV charging will be provided. MCC particularly needs to look at using its own assets to be able to help respond to future demand as EV numbers grow from the current low base of 1,005 cars and light goods vehicles across Manchester (end of March 2022²). Lack of access to charging infrastructure is seen as one of the biggest barriers to adopting EVs at the current time, both by residents and businesses. It should be noted that there is no statutory requirement for local councils to provide EV chargepoints, however, MCC does have some role to play in helping to achieve the zero-carbon targets set for 2038.

1.3 There is a significant amount of work to be undertaken in the coming years to meet both the overarching ambition for a zero-carbon environment and to make the city fit-for-purpose as the sale of new petrol and diesel vehicles are phased out. The Council recognises that there is a need for an overarching strategy, supporting objectives and a delivery mechanism, certainly for the short to medium term, in order to ensure that development doesn't occur in an ad hoc manner and that assets don't become stranded.

¹ [https://www.gov.uk/government/statistics/transport-and-environment-statistics-2022/transport-and-environment-statistics-2022#:~:text=domestic%20transport%20was%20responsible%20for,emissions%20in%202020%20\(406%20MtCO2e%20\)](https://www.gov.uk/government/statistics/transport-and-environment-statistics-2022/transport-and-environment-statistics-2022#:~:text=domestic%20transport%20was%20responsible%20for,emissions%20in%202020%20(406%20MtCO2e%20))

² [The case for electric vehicles | Local Government Association](#)

1.4 The GMEV publicly owned network of EV chargepoints, installed by Transport for Greater Manchester (TfGM) in 2013, includes around 140 chargepoints throughout the region (as of January 2022). Since 2019 these chargepoints have been renewed, upgraded and rebranded under the Be.EV branding. The Be.EV network has predominantly focused on public car parks and destination locations although it does include a small number of on-street locations as well. Manchester in total has 130 devices including both publicly and privately provided infrastructure (as of September 2022) amounting to 24 per 100k population compared to 42 in the UK and 102 in London. It is expected that by 2030 at least an additional 1,500-3,000 public chargepoints will be required within Manchester (data from TfN).

1.5 This strategy will look at the role of MCC in providing public EV infrastructure and set out principles of how the council will engage with this infrastructure. This will include how the council can assist in supporting the commercial rollout of EV infrastructure. The electrification of public transport, including buses, and other forms of electric vehicles is beyond the remit of this strategy.



Image Source: TfGM

2.0 Policy Context

2.1 Overall the main aim of national, regional and local transport policy is to reduce both car use and their overall numbers through greater patronage of public transport and active travel modes and also growth in other shared transit. This is expressed in the GM2040 Transport Strategy (2021) as the 'Right Mix', which aims to increase the percentage of journeys in Greater Manchester made by non-car modes from 39% (2017) to 50%, with no net increase in private motor vehicle trips, by 2040. Under this scenario, 50% of all trips will still be made by car, and therefore we should assist the transition to net zero emission vehicles where we are able to and have a role to play.

2.2 National

- [Decarbonising Transport: Setting the Challenge \(DfT 2020\)](#) - This document sets out what needs to be done in order to deliver the significant emissions reduction required across all modes of transport, to enable us to achieve ambitious carbon budgets and net zero emissions across all modes of transport by 2050. One of the six priorities of the report is the decarbonisation of road vehicles through supporting the transition to zero emission vehicles partly through the provision of refuelling and recharging infrastructure. It is acknowledged that as the move towards the mass adoption of EVs gathers pace then a fit for purpose charging infrastructure network will be required. The document also notes that new and higher powered chargepoints should provide debit or credit card payment and also that solutions should be developed to allow any EV driver to use any public chargepoint through a single payment system to allow for clarity and integration.

- [Taking Charge: the electric vehicle infrastructure strategy](#) was published in March 2022 which sees the government's aim to lay the foundations for the installation of 300,000 public chargepoints by 2030 in an equitable way although acknowledging that the actual number of chargepoints needed is uncertain. The Strategy identifies that the roll-out of public chargepoints is too slow, particularly for on-street charging which tends to be commercially challenging. It states that public chargepoints are needed for those without parking (on-street overnight charging) and to enable long distance journeys (strategic road network). It stresses the need for balancing fast and rapid chargers and states that there is a requirement for slower overnight charging for many users, partly down to the cheaper energy cost that this would provide. It notes that by 2050 there will be a clear need to shift as much charging activity as possible into the off-peak period to minimise the burden on the electricity system. This suggests that low cost, overnight on-street charging should be part of the solution but it is not yet clear if there is a sustainable commercial model to deliver this.

The strategy seeks an obligation on local authorities to develop and implement local charging strategies. These strategies should identify how to provide affordable, convenient charging and they will also need to consider charging opportunities for other vehicles, including e-bikes and motorbikes. It includes metrics to be able to monitor growth of the public network in local areas and they will take action where the delivery fails.

The Strategy also includes discussions on ensuring that chargepoints are more reliable and easier to use (smart payments, etc) and considers connection issues (integration into the grid, smart charging, vehicle to everything technology, etc). The strategy sets out what the Government sees as the role for local authorities

- **National Planning Policy Framework (NPPF) (2021)** - The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. This emphasises the need to identify, assess and take into account the environmental impacts of traffic and transport infrastructure which includes the consideration of appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains. It states the need to ensure an adequate provision of spaces for charging plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

2.3 Regional

- **Greater Manchester Transport Strategy 2040 (GM2040) (2017)**, supported by a 5 year delivery plan (2021) - GM2040 sets out long term needs and aspirations for transport in the region and includes four key elements:

- to support sustainable economic growth
- improve quality of life for all
- protect the environment
- develop an innovative city-region

The document notes that the primary aim is to encourage a modal shift towards more sustainable travel options such as active travel and public transport but it also recognises that some journeys will need to be undertaken by road and that in these instances there is a priority to reduce the population's exposure to harmful emissions. As a result there is an ambition for smaller vehicles to shift to being fully electric and therefore TfGM will look to expand the public Be.EV network of chargepoints as further funding becomes available. However, there is also recognition that electrifying the road fleet whilst bringing environmental benefits may also place additional burdens on electricity supplies and grid capacity in some areas and that therefore we will need to work in partnership with the electricity suppliers to ensure sufficient capacity.

- **Clean Air Plan (2022)** - Local Authorities within Greater Manchester have been directed by the government to introduce a Clean Air Plan (CAP) to tackle illegal levels of NO₂ emissions at the roadside, in the shortest time possible and by 2026 at the latest. The GMCA, on behalf of GM local authorities submitted a revised CAP to government in July 2022 based on an investment-led approach to enabling the necessary upgrade of vehicles to achieve compliance with legal emission levels. As with the original CAP, only commercial, not privately owned vehicles are in scope. Government is expected to make a decision on whether the new GM CAP will comply with the legal direction in early 2023. Government funding of over £120m has been secured to assist with the move to cleaner, compliant vehicles and will work alongside the CAP which aims to reduce emissions from the most polluting vehicles and will initially focus on commercial traffic and taxis/PHVs

- **Greater Manchester EV Charging Infrastructure Strategy (EVCI) (2021)** - The Strategy is a sub strategy of GM2040. Access to EV charging infrastructure is a core enabler of GM's ambition to be a carbon-neutral city region by 2038 and as a result the Strategy aims to provide a clear vision, objectives and strategic principles to inform a delivery plan for the deployment of EV charging infrastructure. The availability of charging points has been cited as a key barrier for businesses and individuals in switching to EVs. The three main themes of the document are:

- a need to ensure that the lack of infrastructure is not inhibiting the transition to EVs
- the need for short term public sector intervention to encourage and accelerate the transition to EVs
- the need for flexibility to change investment priorities and to regularly review and monitor the developments in the market to ensure that the charging infrastructure network continues to meet with demand

2.4 Local

- **Our Manchester Strategy** - has been reviewed and the priorities were reset in 2020. The document has a vision for Manchester to be in the top-flight of world cities by 2025. It sets priorities to be a city that is thriving and sustainable, highly skilled, progressive and equitable, liveable and zero-carbon and to be connected both internationally and within the UK. There is an emphasis on the city playing its full part in limiting the impacts of climate change with renewed focus on creating active, integrated, affordable and green transport
- **City Centre Transport Strategy (CCTS) (2021)**- This strategy has been produced in collaboration with MCC, TfGM and Salford City Council. It identifies key transport policies and opportunities for future delivery within the regional centre and envisions a well connected, zero-carbon centre at the heart of the North. It also stresses the need to get the right balance between the different ways of travelling with an aim to be a zero-carbon city-region by 2038. This document has been produced following input from residents, commuters, businesses, visitors, transport operators and other stakeholders to understand the existing transport challenges and future aspirations for the city centre for those that use it each day.
- **Manchester Local Area Energy Plan 2021** – The Plan defines the extent of the transformation needed across Manchester to provide a robust evidence base and plan to help engage businesses and residents in accelerating towards the goal of being carbon neutral by 2038. The Plan considers a range of decarbonising options, including the growth in EVs and the necessary charging infrastructure this will require to enable the development of scenarios to compare resultant emissions.
- **Manchester Core Strategy 2012** – Manchester's Core Strategy was adopted in July 2012 and is the key Development Plan document covering the 15 year period to 2027. This is currently being reviewed and the new Local Plan is expected to be adopted in late 2024. The Strategy aims as part of its vision to meet the challenge of climate change and be at the forefront of environmental initiatives and improvements, continuing to deliver sustainable development and a more effective green infrastructure. The Strategy includes a number of policies in support of EVs including:
 - T1: Sustainable Transport – the council will support proposals that facilitate modes of transport that reduce carbon emissions e.g by incorporating charging points for electric vehicles, subject to their appropriate design and location. It notes that by encouraging modes of transport that are carbon free or that produce significantly lower carbon emissions this will help in halting climate change and improving air quality
 - EN16: Air Quality - the Council will seek to improve the air quality within Manchester. Developers will be expected to take measures to minimise and mitigate the local impact of emissions from traffic generated by the development.

- PA1: Developer Contributions – states that the council may seek contributions, with priority assessed on a site by site basis, including for sustainable transport and climate change mitigation/ adaptation.

- **Air Quality and Planning Technical Guidance 2021** - The Council's Environmental Protection (EP) Team have produced a guidance note to advise applicants and planning officers in assessing new development. This technical guidance is focused on reducing air pollution from road transport as the major source of emissions in Manchester and seeks to support the planning system in lowering transport emissions and improving local air quality. Providing EV charging infrastructure is considered an effective measure to mitigate local air quality impacts from road vehicle journeys created by proposed development and as a result the guidance contains a summary of MCC's recommended best practice EVC measures (Appendix 1).



Source: MCC

3.0 EVs and Future Predictions

Types of charging

3.1 Chargepoints come in a variety of forms and can be located in both on-street and off-street locations. The most common form is a freestanding unit. There are four main types of chargepoints: ultra-rapid, rapid, fast and slow. A comparison of the various types is shown in Table 1 below. It should be noted that currently not all vehicle batteries are compatible with ultra-rapid chargepoints and may not be able to use them at all or not for frequent, regular charging without impacting on the battery capacity, however this situation will change as new technology in batteries is installed into newer models. It is expected that due to the increasing size of batteries and with evolving technology that slow chargers will be phased out over time as part of public networks. It is acknowledged that the economic case is challenging for the provision of fast chargers that could provide off-peak, overnight charging and solutions to this issue may need to be found. The type of chargepoint installed in a location should be matched to the type of user it is expected to serve.

Table 1. Types of chargepoint

	Ultra-rapid	Rapid	Fast	Slow
Power current	over 50kW (Many are 100-150kW)	43-50kW	7-22kW	3.5-7kW
Charge time*	20-40 mins	25 mins – 40 mins (80% charge)	2-4hrs	4-8 hrs
Range added	200 miles (30 mins)	100 miles (30 mins)	75 miles (1 hour)	10-25 miles (1 hour)
Suitable uses	When refuelling without a break Uses: service stations, petrol filling stations, charging hubs	When parked for shorter periods and quick breaks Uses: service stations, taxis/PHVs and commercial vehicles	When parked for a short while (1-2 hours) or for longer periods overnight Uses: incidental, top up charging, destination such as shopping centres, leisure centres, parks, community uses	When parked for long periods such as overnight, Uses: home

Source: www.local.gov.uk *Charge times shown are approximate and will vary depending on the battery type

Types of users

3.2 For the purpose of this strategy a number of user profiles have been identified to assist in providing a focus for the provision of charging infrastructure. These profiles include the following:

- Private cars – these include residents, both with and without off street parking, and visitors
- Taxis and Private Hire Vehicles (PHVs)
- Light goods vehicles – either privately owned or as part of company fleets
- Local authority and other public sector fleets

- Car clubs

HGVs, buses and coaches are not included within this strategy as these require a different level of infrastructure which will be co-ordinated at a regional level by TfGM. Different types of users such as at the micro-mobility level including e-scooters and e-bikes are also emerging and some consideration may need to be given to infrastructure requirements for these types of options going forward but they are not specifically included within this strategy.

3.3 As well as types of users there are different charging typologies which are set out below:

- Home charging – refers to off-street charging at home either at a private home or apartment and is often overnight which takes advantage of longer dwell times and is best suited to slow or fast chargers generally up to 7kW
 - On-street charging - charging in on-street bays accommodates a range of dwell times and often provides for fast and rapid chargers
 - Business charging - car parks in commercial areas are often able to take advantage of long dwell times either while staff are at work or to charge fleet vehicles overnight and are best suited to fast chargers although this will depend on the business needs
 - Residential community charging – community charging hubs located in residential areas with high levels of on-street parking and are again suited to fast chargers
 - Destination charging – this refers to charging in locations where the user doesn't reside and while carrying out other activities at your destination such as at the work-place, town/district centres, Park and Ride sites, retail parks, leisure centres and visitor attractions. This includes a broad range of dwell times and can accommodate fast, rapid and ultra-rapid chargers
 - On route - Motorway Service stations and petrol filling stations as well as lay-bys close to business activity. This would also include the emerging development of charging hubs. These will normally require rapid and ultra-rapid chargers as they tend to rely on a shorter dwell time.

Growth in vehicles

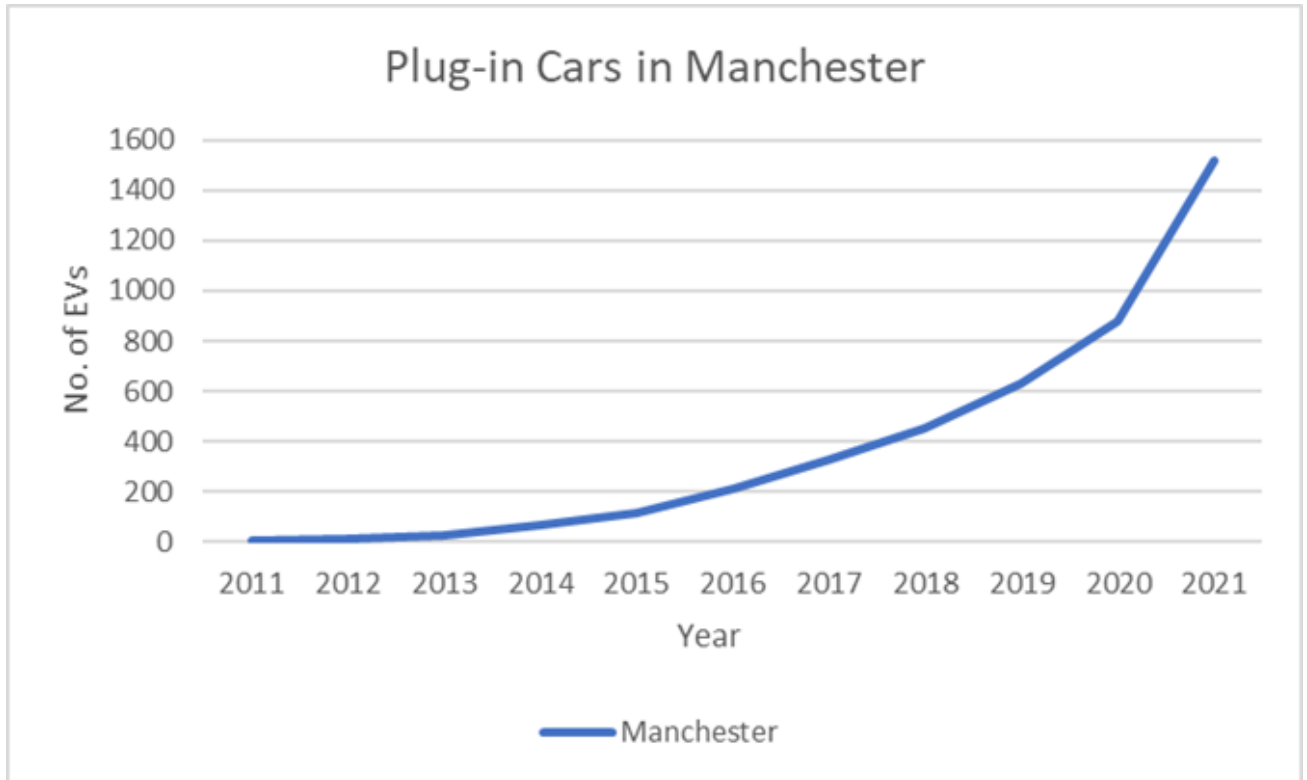
3.4 There were 621,564 plug in cars and light goods vehicles (LGVs) registered in the UK (as of September 2021), up from just over 6,000 ultra low emission vehicles at the end of 2011. Battery prices, a large part of the current total cost of EVs, have fallen almost 80% since 2013 and it is suggested that by 2026 there will be price parity between the cost of new EVs and new petrol/diesel cars which will help to increase the take-up of EVs. However, falling battery costs have largely been offset by an increase in the battery size used in vehicles, increasing the vehicle range but which take longer to charge.

3.5 The number of plug-in cars licensed within Manchester saw a substantial increase in growth between 2015 and 2021, increasing from 115 to 1,522 at the end of 2021, as shown in Fig 1 below. By the end of March 2022 this had increased further to 1,774 plug-in cars registered in Manchester. This still remains at a very low level, making up only 1% of the total number of cars within Manchester, below the UK average of 2.4%.

3.6 Despite the slow rate of growth fully electric and plug-in hybrid vehicles are expected to grow to over 150,000 cars in Manchester by 2038 to make up approximately

75% of the total fleet. This will have an impact on charging demands and the need for expanding public accessibility to charging infrastructure, either publicly or privately provided

Figure 1. Number of Plug-in Cars in Manchester



Future charging needs

3.7 In Taking Charge the Government sets out a minimum expectation that by 2030 there will be 300,000 public chargepoints nationally, a significant increase from the approximate 29,600 existing today. Although the pace of the rollout of charging infrastructure is increasing, currently around 100 chargepoints a month are installed nationally, deployment rates will need to be significantly higher to meet the 300,000 target by 2030. Although there is an expectation that those EV owners with off-street parking will charge at home there is likely to be a need for all EV drivers to use the public network from time to time. For those without off-street parking facilities the public charging network and ease of access to it will be critical. There is, however, a level of uncertainty in forecasting these figures, including around driver behaviours. It is unknown as to how those who do not have off street parking facilities will ultimately choose to charge their cars. Will drivers allow their batteries to run down and therefore charge from nearly empty using rapid and ultra rapid chargepoints provided in charging hubs or will they keep the battery topped up thereby charging while they are about their normal routines such as at the supermarket, leisure and shopping centres or while they visit the park, etc. The end result is likely to be a mixture of both.

3.8 In order to monitor the deployment of charging infrastructure the Government will use metrics to compare disparities between local areas in terms of type and number of chargepoints including:

- chargepoints per capita and regionally
- % of cars parked on-street and number of chargepoints in an area
- average time to walk to a public chargepoint in areas with less off-street parking
- utilisation of public chargepoints

3.9 Within Greater Manchester there are currently around 500 publicly available EV chargepoints with approximately 1000 connectors (as of summer 2022). Figures provided by Transport for the North suggest that between 2,000 and 3,000 chargepoints will be required in Manchester by 2030. Although approximately 60% of Manchester residents do not have access to off-street parking it should also be noted that at the 2011 census 44.5% of households did not own a car thereby making it more complicated to predict the actual number of public chargepoints required and where they should be located.

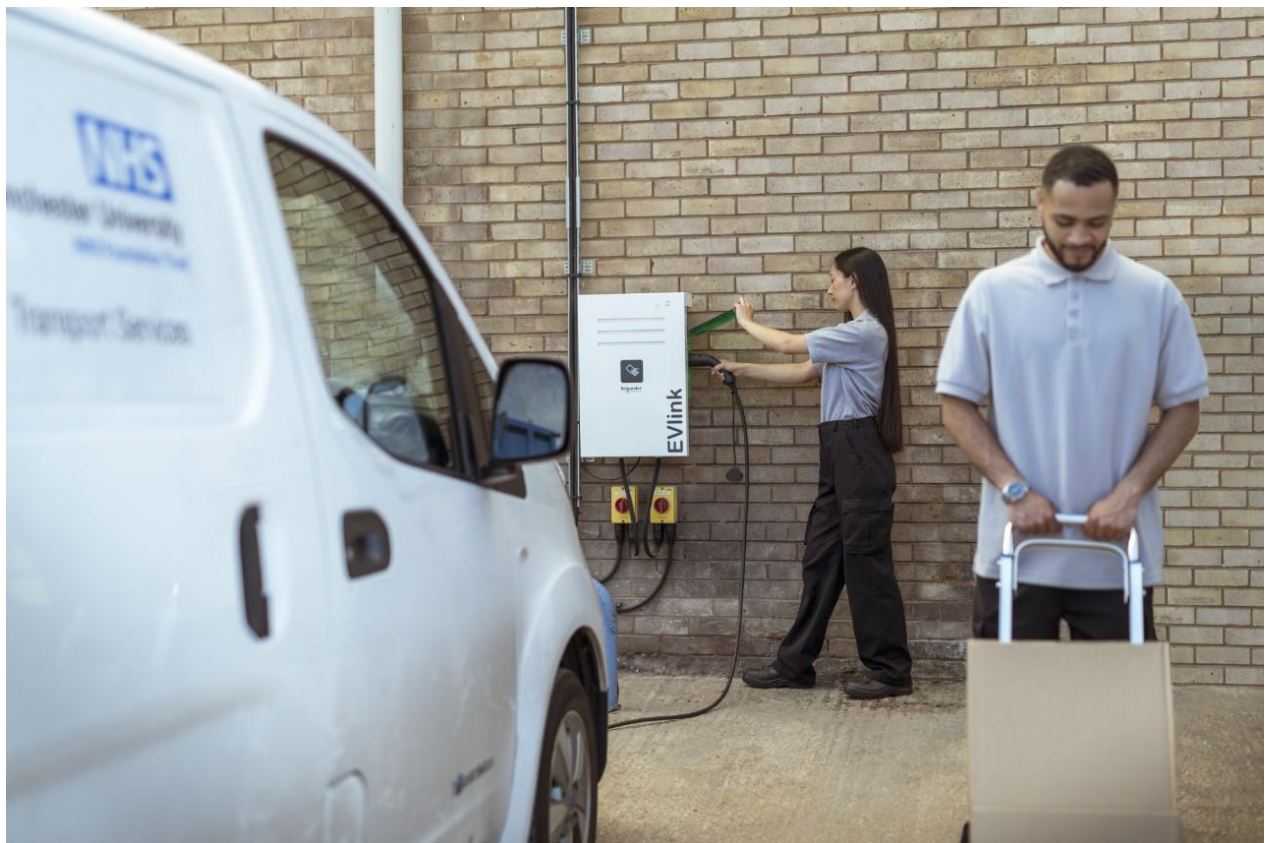


Image Source: TfGM

4.0 EV Principles

4.1 Below is a set of principles for how we will approach the expansion of EV infrastructure going forward:

- **Integrated** – all infrastructure installed should allow anyone to plug into any chargepoint with transparent price charging and, where possible, use contactless payment systems.
- **Inclusive** – the location of charging infrastructure should ensure that residents in those areas where there is limited ability to charge off-street are not disadvantaged. This might be through local points and hubs in residential areas, for those travelling perhaps points at transport hubs, destination locations, etc.

Consideration will also need to be given to disabled drivers and the ease of accessing charge points. Minimum standards and best practice guidance is provided in *PAS 1899: 2022, EV – Accessible Charging – Specification* in relation to the installation of chargepoints specifically adjacent to designated accessible parking bays.

- **Resilient** - consideration will need to be given to the resilience of the electricity grid and its capacity for meeting future charging demands. Future proofing the network will also need to be taken into account as demand increases.
- **Safe and secure** – charging infrastructure should be located where they are visible, overlooked with natural surveillance, have good lighting (either natural or artificial) and are perceived as a secure location.
- **Reliable and well Maintained** – the network needs to be reliable and well maintained for residents to have confidence in the provision in order to promote take up of EVs. Users need to be able to check the real live status of chargepoints and their availability. Having groups of charge points may help to resolve this issue. There is also a need to consider how best to manage non-EVs parking at chargepoint locations.
- **Viable** – where possible the operation and maintenance of publicly owned charging infrastructure should be cost neutral where possible.
- **Environmentally responsible** – electricity used at charging points should, where possible be from renewable resources and also utilise local generation and storage. Installation, operation and maintenance of public charging points should use sustainable materials and construction methods where feasible.
- **Healthier** - the transition to EVs will lead to clean air benefits and can be encouraged through the provision of a well-planned and delivered EV infrastructure network. Such infrastructure will also provide health benefits when integrated with other active travel modes such as cycle hire and are provided as part of wider placemaking initiatives. All chargepoints should be located in a manner that doesn't create obstructions, particularly when located on the highway so as not to impede pedestrians and those with particular mobility needs. As a result a footway width of 1.8 metres will be considered the minimum width to be maintained.

5.0 MCC Role

5.1 This strategy sits behind, and builds on, the GM wide Electric Vehicle Charging Infrastructure Strategy (2021) and provides a way forward for MCC. Although there is no statutory requirement for MCC to provide EV chargepoints the council sees its role as that of assisting the expansion of the public charging network in the relatively short term, to help fill the initial gaps in the infrastructure network until such time that it becomes viable for commercial operators to take over and become the primary suppliers. This is particularly so in those locations where fast chargers would be more appropriate but the provision of such chargepoints is known to be commercially challenging. This is needed to assist those residents without off street parking and also for other groups such as taxis/PHVs and car clubs.

5.2 It is accepted, however, that in the long term there is likely to be a mix of publicly and privately managed/owned charging infrastructure to provide facilities for different customers with different charging needs. MCCs role in supporting the provision of charging infrastructure is through three main channels:

- Direct – supporting the expansion of the Be.EV and other public networks (particularly on MCC land assets), assisting in making provision for charging infrastructure for car club and taxis/PHV and through planning conditions as part of new development
- Leading by example through electrifying the MCC fleet
- Indirect – by approaching and encouraging private enterprise and organisations to expand both the public network in accessible locations or through electrifying their own work based fleets.

Public Charging Network

5.3 The Be.EV public network currently includes 30 double headed chargepoints (as of 1st November 2022). 18,132 charging sessions took place in 2021 by 2,352 unique drivers which is the equivalent of just over 821,500 EV miles. This network has recently been expanded through different funding streams.

5.4 The council supports the expansion of the Be.EV network as funding streams become available however there has been challenges to this growth mainly through issues over site selection/availability, costs and grid capacity. Solutions will need to be found to overcome these problems going forward if we are to develop a network of chargers in the right locations at the right time.

5.5 MCC also has opportunities to take a more direct approach by leasing some of its own parcels of land for the development of charging hubs along with looking into ways of allowing private operators to install and manage chargepoints within council owned car parks and facilities such as leisure centres, community centres, libraries, parks etc.

5.6 The council has taken the view that except for their use by car clubs and taxis/PHVs chargepoints should not be sited in on-street locations for a number of reasons including potential damage, pavement obstructions, visual street clutter, etc. Technology does exist to connect EV chargepoints to lamp posts, and these have been considered, but as the majority of lamp posts in the district are located at the back of the pavement and it was not considered appropriate to trail cables across the footway. Connecting the lamp post

to a charging bollard at the kerbside could again cause issues of street clutter and pavement obstructions and would be a more costly solution. Lamp post chargepoints are slow chargers generally operating at around the 3kW range which is now slower than many home chargers that can be purchased. Neither the trailing of cables nor the provision of cable gullies across pavements is supported by the council.

5.7 A more proactive approach is likely to be required to provide EV chargepoints specifically for taxis and PHVs to help achieve the objectives of the proposed Clean Air Plan. Suitable sites for such installations will be predominantly sought in and around the city centre and also within easy reach of the Airport to meet likely demand.

5.8 It should be noted that there are also a number of other chargepoint providers that are also supplementing the public network by installing chargepoints in accessible locations for all to use such as PodPoint, InstaVolt, Hubsta, and Charge Your Car to name a few. These are a few of a growing number of commercial operators which are locating chargepoints in a variety of locations such as supermarkets, retail parks, car parks, etc. with many of the major petrol filling station providers also beginning to provide chargepoints.

Planning Guidance

5.9 During 2021, as part of the Air Quality Technical Guidance note, the recommendations for the provision of EV charging points as part of new developments has been amended and strengthened (Appendix 1). This advisory guidance provides recommendations for both residential and commercial development proposals for installing chargepoints and also for providing the necessary cable routing for further chargepoints in the future as demand requires. Requirements for the installation of EV chargepoints as part of the Building Control Regulations (Part S) came into force in June 2022.

5.10 It should be noted that under such guidance the council will also be required to provide chargepoints as part of the planning conditions on their own developments. These could be provided either through the existing TfGM contract as part of the Be.EV network or through procuring other providers in an open tendering process (either to procure for all council development contracts or on a development by development basis).

MCC Fleet

5.11 The council is taking the lead in promoting EVs through transitions in our own vehicle fleet. As of May 2022, EVs made up 15.8% of the council owned vehicle fleet. 27 electric refuse vehicles (owned by Biffa) operate on Manchester roads, approximately half the fleet and it is hoped to transition the remainder of the refuse fleet in time. The council has also been successful in applying for grant funding for 12 e-cargo bikes that will support such services and Parks and Cemeteries which are awaiting delivery.

5.12 There is an opportunity to use the fleet transitions as a catalyst for change in other organisations through increased public awareness and further public promotion. The Energy Savings Trust has recently produced a Transport Decarbonisation Report in relation to the council's fleet vehicles which is in the process of being finalised and will provide recommendations going forward.

Indirect Approaches

5.13 The council can also work in indirect ways with TfGM to help in raising awareness among commercial operators both in their role as employers to assist in electrifying their own fleet or providing chargepoints for their staff or as private landowners who may provide opportunities for the expansion of the public network.

5.14 The Workplace Charging grant scheme is currently available for organisations as a voucher-based scheme that provides support towards the up-front costs of the purchase and installation of EV chargepoints for businesses, charities, public sector organisations and also EV chargepoint installers. The council could promote this scheme through its connections with various bodies, organisations and businesses as well as considering staff chargepoints for its own sites where appropriate although staff should not be encouraged to drive to sites unless there is a requirement to do so.

5.15 The Council can approach landowners directly where they have public car parks to try to engage them in EV discussions. This would particularly be the case for locations such as supermarkets and retail parks. A number of supermarket chains are already beginning to install chargepoints in their car parks and if this could be continued through the remaining chains this could provide a range of easily accessible points with a wide geographic spread.



Image source: TfGM

6.0 Delivery and Funding Opportunities for the Public Network

6.1 There are a number of challenges to expanding the public EV infrastructure environment through public means and these are outlined below:

Type of Challenge	Issues
Funding	<p>Funding has been a major challenge to providing EV infrastructure as there are considerable upfront costs and ongoing maintenance costs involved and the payback time will often be around the same length of time as the expected life expectancy of the infrastructure at 7-8 years (possibly longer) after which further upgrades or replacements will be required. The council doesn't currently have a dedicated budget for developing or maintaining a public charging network and to date has relied on submissions for grant funding through TfGM who have been providing the necessary match funding to expand the Be.EV network.</p> <p>Grant schemes currently available include:</p> <ul style="list-style-type: none"> • OZEV Residential On-Street scheme – this provides part funding for local authorities to install chargepoints both in on-street locations and within council owned car parks. • Workplace Charging Scheme – this is a voucher-based scheme that provides support towards the up-front costs of the purchase and installation of EV charge-points, for eligible businesses, charities and public sector organisations mainly for staff and fleet use • Local EV Infrastructure Grant (LEVI) - the details for this scheme have yet to be finalised and is not likely to be open for applications until later in 2023 <p>Commercial operators are growing in number and many now provide fully funded programmes of installation, maintenance and operation at zero cost to the council. Such schemes will need to be explored further along with potential procurement routes but could provide a solution to this issue</p>
Site Identification	<p>There have been issues in the search for suitable locations in the past which has resulted in a very ad hoc approach as funding submissions have arisen. This is partly due to council land assets being owned and managed between different Directorates. Going forward internal processes should be improved to be better defined and streamlined to assist with this process to ensure cross departmental support.</p>

	<p>The first iteration of the Be.EV network (GMEV) was installed in 2013 and relies heavily on on-street locations and city centre car parks. Since 2013 MCC thinking has moved away from on-street provision (unless it is for the sole use of taxis/PHV or car club vehicles) and towards off-street locations. This would favour car parks however, particularly in the city centre, there are a number of development proposals which will impact on many containing current points and limiting the provision of new points in the future. Current transport strategies would also want to move away from encouraging drivers to drive into the city centre purely to charge their vehicles which will require a broader range of charging locations.</p> <p>There are limited council owned car parks outside of the city centre however many leisure and community buildings or parks also have parking provision which may be suitable for the installation of EV points although not all of them have 24hr access.</p> <p>The council does own a number of parcels of land which could be leased in order to develop new charging hubs.</p> <p>It is considered that there does need to be a focus and prioritisation on those areas where there is a lower proportion of off-street parking in the first instance.</p>
Grid Capacity	<p>Grid capacity and connection costs are an issue within the district and will continue to be an issue as electricity demand remains high. Further understanding will be required of this issue from discussions with TfGM and ENWL. These issues have prevented a number of sites going forward for the installation of EV chargepoints through the grant schemes listed above due to their financial viability and will be a constraint in a number of locations.</p>

Opportunities

6.2 There are a number of opportunities and actions that the council can take to assist in accelerating the public network of EV charging infrastructure. In order to accelerate the roll-out of public EV charging infrastructure within Manchester a cross-departmental Steering Group should be formed to consider the most appropriate delivery tools for the council.

Funding

6.3 Up until now the council has relied on funding secured by TfGM through various grant schemes and it is likely that certainly in the short term some form of grant funding may continue but the council may need to consider how best to access and utilise these

schemes. Some consideration will need to be given of the best routes going forward to supplement these grant schemes and there are other options.

6.5 Other funding opportunities are becoming available and the council will need to consider how these can be best utilised to meet the growing needs and requirements of EV charging. As noted in the table above there are a number of commercial EV chargepoint suppliers who are willing to consider the installation of public chargepoints in a way that could be cost neutral to the council (with or without including any grant funding). There may also be some limited options for revenue generation (fixed bay rentals) and profit sharing from these schemes although this should not be at a scale that would make any such scheme unviable to the supplier. However, it should be noted that such contracts are likely to be relatively long term due to the high installation, maintenance and operating costs incurred by the suppliers and as a result the procurement and legal processes involved will need to be carefully considered.

6.6 Separate considerations will need to be given to the provision of EV chargepoints for the use by both taxis/PHVs and car club neither of which is now currently eligible for grant funding. Chargepoints for taxis/PHVs will generally need to be rapid chargers which are more costly to install and will take much longer timescales to recoup their costs making them less attractive to the private market. There may be the possibility of funding these as part of the Clean Air Plan to assist in the transition of the most polluting vehicles within the city centre. This would include taxis/PHVs and light goods vehicles (LGVs) in particular but would also consider the needs of residents and businesses as well.

Site Identification

6.7 A more coherent and joined up approach needs to be found to enable easier and quicker site identification and to ensure that we have a pipeline of suitable and viable sites as funds become available. Chargepoints should normally be located in off-street locations such as car parks or other sites which could be developed as charging hubs. It would normally be expected that chargepoints supported for public charging should have 24hr accessibility where possible although waiting times may be applied to allow access to as many residents as possible during the daytime. Where parking charges apply this will also relate to the EV charging bays. The type of chargepoints to be installed should be matched to the type of use they are expected to fulfil, e.g fast chargepoints for overnight and incidental top-up charging, rapid and ultra-rapid chargepoints for charging hubs, taxis/PHVs, etc. In this instance incidental charging refers to those charging as they visit facilities such as parks, leisure centres, libraries, etc rather than driving to a location specifically to charge their vehicle.

6.8 Each of the user profile groups set out in paragraph 3.2 have different charging requirements and therefore have different locational criteria:

- Private cars - close to residential properties but not directly outside residents' homes, in locations which are perceived to be safe and accessible.
- Taxis/PHVs - not directly outside residential properties, easily accessible and possibly close to main taxi routes. Need to be aware that taxi bays are often larger than standard parking bays and in existing car parks may result in the overall loss of bays.
- Light Goods Vehicles – may charge in workplace car parks overnight or sometimes at residential properties or public car parks
- Local authority and other public sector fleets – workplace charging

- Car clubs - there are a range of car club locations from on-street to car parks in both commercial and residential areas
- En route – those requiring a quicker charge as part of longer journeys Additional to these user groups for those wanting to charge vehicles quickly and perhaps from empty rather than just for a top charge charging hubs or similar sites such as filling stations will probably be used which are likely to be in easily accessible locations.

6.9 Sites can be identified through a number of means including through officer knowledge and local engagement along with the use of digital mapping software. Individual requests for chargepoints that have been received by the council can be used to help identify where there may be need arising for additional facilities however it is considered that locations should serve wider community needs and not just to serve individuals at their private homes. They should be located in accessible locations with natural surveillance for security purposes. Flexibility will need to be built into any approach to identifying locations as it is acknowledged that 'one size does not fit all'. Appropriate dwell times for the types of chargepoints being installed will have to be carefully considered and appropriate enforcement measures put in place.

6.10 As stated at the beginning of the strategy the proportion of homes in Manchester without access to off street parking facilities is approximately 60%. In terms of the public charging network priority should be given in the first instance to those areas which have the highest density of properties without off-street parking facilities, mainly those areas where terraced houses and flats are dominant. Map.1 below broadly indicates where the density of these types of property are highest. More detailed data tools will help to further refine this information to help inform where initially the installation of chargepoints should be focused.

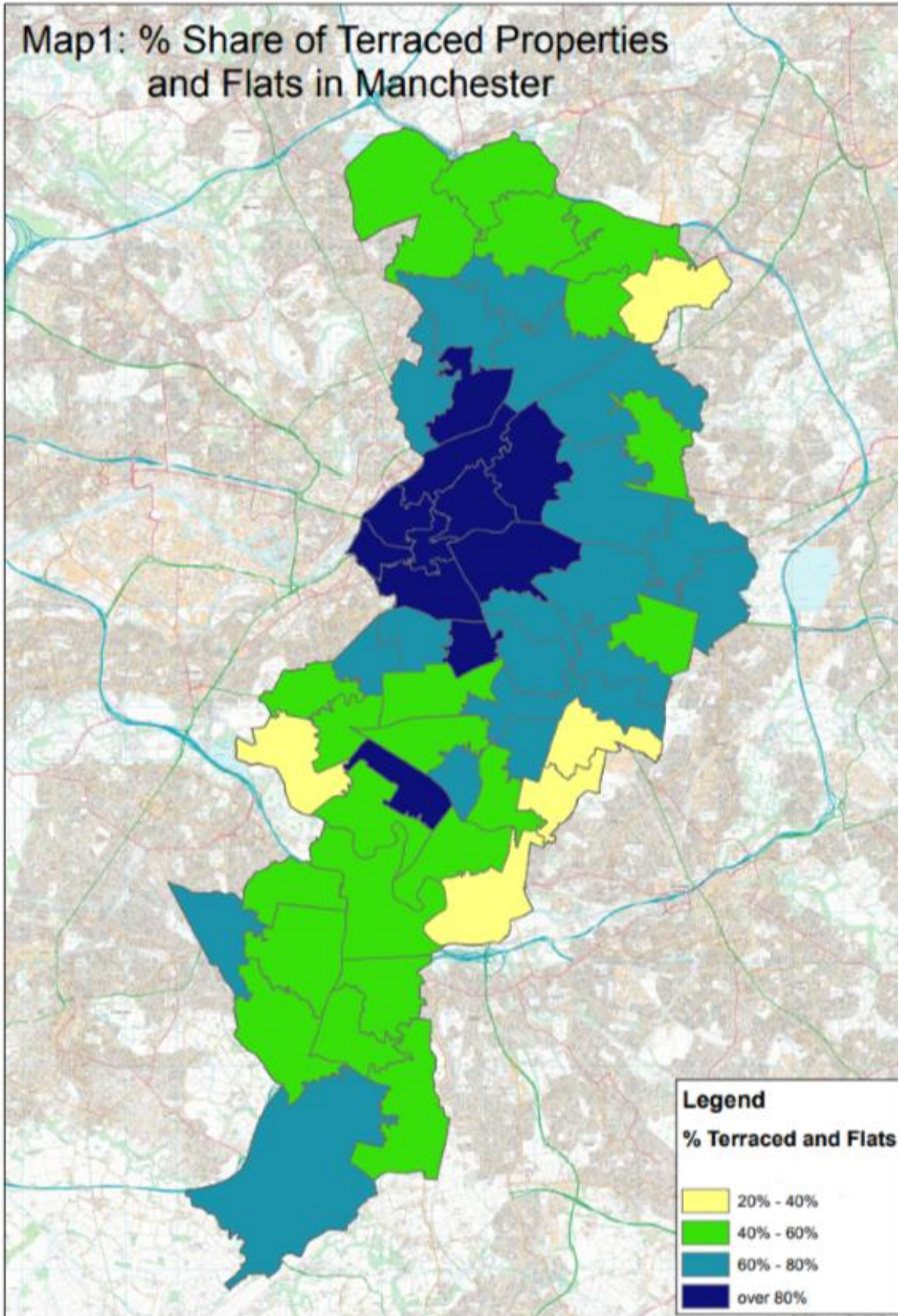
6.11 Other priorities for public chargepoints could be at locations that serve destination locations and areas of larger workforce parking, e.g. science and industrial parks however these are more likely to be owned by commercial operators and private landowners and the council may only be able to raise awareness and encourage installation in these locations.

6.12 The council consults internally and where appropriate with elected members and the general public in relation to the location of charging points.

Influencing EV Charging Infrastructure

6.13 The council, and TfGM, has contacts with a number of employers, landowners and organisations and can use these contacts to raise awareness and encourage the uptake of EVs as both part of their own fleet use or as a means of expanding the public network in accessible locations. This can help their own carbon and emission reduction. Some of the tools available are outlined below:

- Promoting the TfGM webpage which provides information and the ability to identify possible charging locations
- Press Releases
- Internal staff communications
- Disseminate through local group and business networks
- Applying the recommendations of the EV Charging Best Practice Note in relation to new development



Source: 2011 Census

7.0 Recommendations and Actions

7.1 In order to accelerate the installation of EV charging infrastructure it is proposed that:

- the council will form a cross departmental steering group to oversee the delivery of the recommendations in this report
- the council will support the expansion of the Be.EV public network in partnership with TfGM as grant funding opportunities arise
- the council will consider the suitability of locations within its own car parks and parking areas for the installation and operation of chargepoints by private suppliers
- the council will consider leasing parcels of its own land for the development of charging hubs in suitable locations
- the council will seek to make the best utilisation of funding opportunities as they become available to expand the charging network and consider the installation of supplier provided equipment on MCC owned land
- the council will support locations which could serve taxis and PHVs to increase the take up of EVs within this group, either on-street or off-street
- the council will support locations that encourage the electrification of the car club fleet, either on-street or off-street
- the council will continue to seek ways to de-carbonise the councils own fleet of vehicles to reduce emissions and will provide the necessary charging infrastructure for this
- the council will support the provision of EV chargepoints for staff use in appropriate circumstances

8.0 Monitoring

8.1 Monitoring data of the Be.EV network and the performance of individual points is already collected by Swarco on behalf of the operator which provides useful information on local demand for charging. Such data can help to identify future locational needs and assists with further planning the expansion of the network.

8.2 Further monitoring from successful suppliers will form part of the procurement process.



Image Source: Enterprise

Appendix 1

Electric Vehicle Charging - MCC Best Practice Recommendations

▪ Electric Vehicle (EV) chargepoints and infrastructure are recommended for the following applications:

- 1 or more residential units with any parking spaces.
- Non-residential development with any parking spaces.

EV charging recommendations:

• **Residential:**

- On-site/allocated parking: 1 EV chargepoint (minimum 7kW*) for each dwelling.
- Unallocated parking: minimum 20% EV (minimum 7kW*) chargepoints, and cable routes for all other spaces.

• **Non-residential:**

- 10 or less parking spaces: minimum 1 EV chargepoint, and cable routes for all staff spaces.
- 11 or more parking spaces: minimum 20% EV chargepoints, and cable routes for all staff spaces.
- Charging units dependent on end-use as follows:
 - Minimum 7kW*: offices, hotels, nursing homes, sheltered accommodation, industrial units, retail units.
 - Minimum 22kW*: supermarkets etc.
 - Minimum 50kW*: service stations etc.

**Mode 3, 7kW (32A) single phase, or 22kW (32A) three phase, and for 50kW Mode 4 rapid charging may be required. See British Standard BS EN 61851-1:2019.*

Other considerations required by the Local Planning Authority may include:

- Chargepoint type and speed
- Electrical and safety standards
- Back office functionality
- Data security
- Interoperability/compatibility
- Smart charging (where appropriate)
- Load management
- Anti-collision barriers

^[1] <https://www.gov.uk/government/publications/electric-vehicle-homecharge-scheme-minimum-technical-specification/electric-vehicle-homecharge-scheme-minimum-technical-specification>

