Stockport Zero-Emission Vehicle Charging Infrastructure (ZEVCI)

Draft Interim Policy Statement

STOCKPORT
METROPOLITAN BOROUGH COUNCIL

stockport.gov.uk

Contents

1.0 Introduction

As set out in the 'Climate Action Now' (CAN) strategy[1] and in the declaration of a 'Climate Emergency'[2], the council is committed to becoming carbon neutral by 2038 and has set out a clear approach to making transport more sustainable in Stockport. But what does that mean for the borough?

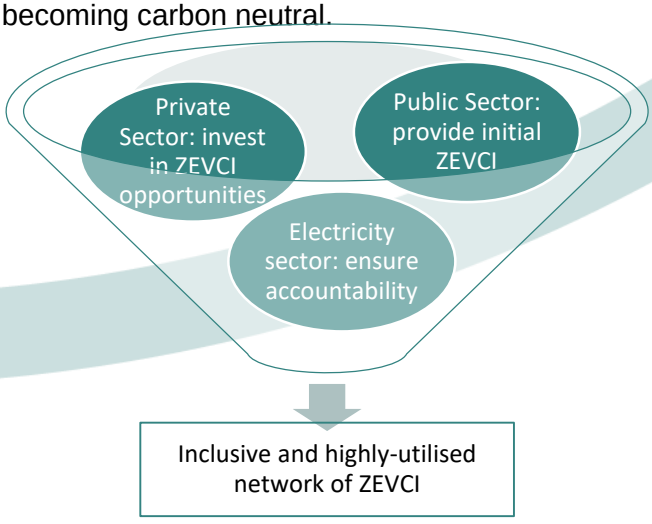
The increased use of zero-emission vehicles (ZEVs) is one mechanism for achieving this aim, in addition to encouraging greater use of public transport and cycling and walking.

ZEV charging is a rapidly evolving technology, and recent innovations and developments in the market mean that the uptake of ZEVs, particularly in terms of private cars, is increasing. There is a clear upward trend in the number of registered electric vehicles (EVs), which are just one type of ZEV. Despite this, EVs still make up a small proportion of licensed vehicles, accounting for just 0.5% of vehicles in 2019[3].

Public sector continue to support the transition to ZEVs alongside private sector. It is key that these two sectors work together in order to build a inclusive and well-utilised network of charging infrastructure. An initial boost in provision is required by the council for a number of reasons. Firstly, the council recognise that ZEV usage is currently at a minimum, as demonstrated above. The implementation of charging infrastructure is co-dependent with the number of ZEVs and so a causality relationship is apparent. Private sector operate within economically viable locations where profitable benefits can be predicted. However, in order to ensure that these locations are viable, use of ZEVs is needed first. The council will begin to take the first step in facilitating the increase in ZEVs by providing infrastructure which will in turn, attract private sector and provide economically viable opportunities to invest. It is therefore expected that as usage increases, private sector will play a larger role in the roll out of infrastructure.

Secondly, visibility is key in gaining the public's confidence in ZEVs. Charge anxiety is a term used to describe the fear drivers face with ZEVs and the inability to charge, whether that be due to the lack of provision or long durations in which it would take to charge. Therefore, the council must ensure that ZEVCI is visible within public spaces such as our surface car parks to accommodate the transition. Once an initial increase occurs, car park provision can increase and the council can look towards offering on-street provision in locations that are deemed suitable. The suitability of a location, is discussed further within this Interim Policy Statement and can be found in section 5.2.

So, what role do public sector play in 15 years time? It is unsustainable for public sector to tackle the challenge of ZEVCI alone. As usage increases, so too will the opportunities presented to private sector. Private sector will dominate the implementation of charging infrastructure, with public sector ensuring that the network remains inclusive. Where locations are not financially viable, public sector will ensure suitable provision is available, whether that be in the form of on-street parking, transport hubs or car parks. Public sector will also continue to promote the use of ZEVs through knowledge sharing and use promotional and marketing materials to increase awareness. This will facilitate Stockport's goal in becoming carbon neutral.



In order to ensure that ZEV uptake is fully supported and delivered in a coordinated way, this 'Zero-emission vehicle charging infrastructure (ZEVCI) Interim Policy Statement ' has been produced to set out how the council and partners will seek to deliver ZEVCI in the borough. This will act as a supporting document to the wider Greater Manchester 'Electric Vehicle Charging Infrastructure (GM EVCI) strategy' which has been produced by Transport for Greater Manchester (TfGM). More information regarding this strategy is available in section 2.2.

It is recognised that further work is required to encourage the switch to zero-emission for private cars, taxis, large goods vehicles and car clubs. The council is also aware of the increased market for other electrified modes such as cargo bikes and e-scooters and will continue to monitor neighbouring district's trails, with the aspiration to implement similar schemes when successful.

This Interim Policy Statement does not include provision for HGVs or buses. Given that the ban on new diesel HGVs will be implemented in 2040 and Government targets for these modes are later than private vehicles, prioritisation has been given to the latter for this Interim Policy Statement . However, the council does continue support the introduction of such vehicles and will work with TfGM and operators to improve the emissions of their fleets.

The objectives of this Interim Policy Statement are to:

- Facilitate the expansion of the existing network in a way that meets the forecasted demand by providing the right types of charging infrastructure in the right locations;
- Work collaboratively with Central Government, the Combined Authority, Public Bodies and Power Operators;
- Explore wider measures to future proof ZEV infrastructure and support the delivery of the Clean Air Plan;
- Raise public awareness and increase confidence towards ZEVs;
- Update ZEV parking and design standards; and
- Review council fleet to reflect the transition to ZEVs.

Figure 1 presents the documents that largely affect the Interim Policy Statement and have helped to shape it into its current format. Further information regarding these documents can be found in the following policy chapter. Given the nature of technological innovation and upcoming policy guidance, the Interim Policy Statement will need to be reviewed regularly and remain flexible to be able to respond to change.

Figure 1 – Policy hierarchy

2.0 Policy, plan and strategy context

2.1 National policy context

A national climate emergency was declared by the UK Parliament in 2019, with MPs calling on the Government to set a target of reaching net zero-emissions by 2050.

This included a recognition of the need to end the sale of new petrol and diesel cars by 2030.

A series of plans and strategies have been published exploring ways of reducing transport emissions (e.g. Clean Air Plan) and introducing new sustainable transport modes (e.g. Future of Mobility Strategy[4]).

In response to the COVID-19 pandemic and the economic downturn facing the UK, the Government announced a 'New Deal'[5] and a 'build back better' focus would be implemented.

A large part of this stimulus package is through investment in infrastructure and the green economy, including:

- £10 million of funding for the first wave of innovative research & development projects to scale-up manufacturing of the latest technology in batteries, motors, electronics and fuel cells; and
- Over £1 billion to support the rollout of ultra-low emission vehicles (ULEVs) in the UK via support for a super-fast charging network for EVs, and extension of the Plug-In Grant schemes.
- Other announcements include[6]:
- The roll-out of 6,000 charge point's along motorways and A-roads by 2035; and
- The creation of a Rapid Charging Fund.

National Planning Principle (NPPF)[7]

A revised National Planning Principle Framework (NPPF) was published in 2019 with the document placing greater emphasis on sustainable transport and providing charging points for ultra-low emission vehicles.

Under 'Promoting sustainable transport', principles relating to parking standards for residential and non-residential development should take into account: *'the need to ensure an adequate provision for charging plug-in and other ultra-low emission vehicles'*[7a].

Under 'Considering development proposals', applications for development should: *'be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations*'[7b].

Under 'Conserving and enhancing the natural environment', planning policies and decisions should: '*contribute to and enhance the natural and local environment by…preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality*'[7c].

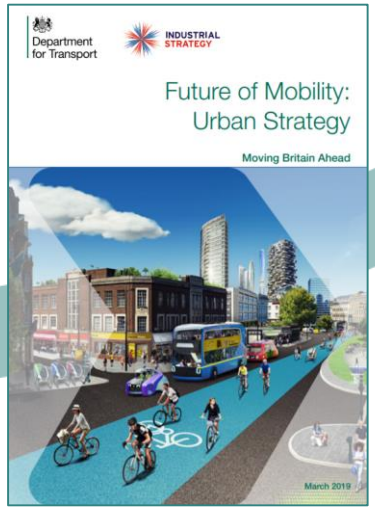


Figure 2: Future of Mobility Urban Strategy [4]

2.1 National policy context (continued)

DECARBONISING TRANSPORT (DFT)[8]

Carbon emissions from transport are little changed since 1990, with cars and taxis accounting for a large percentage of greenhouse gas emissions within this category. However, we are now seeing transport rapidly decarbonise between now and 2050. The 'Decarbonising Transport' document by DfT identifies six key themes that aim to deliver an overall better lifestyle and atmosphere. These are labelled strategic priorities and consist of:

- Accelerating modal shift to public and active transport;
- Decarbonising road transport;
- Decarbonising how we get our goods;
- UK as a hub for green transport technology and innovation;
- Place-based solutions to emissions reduction; and
- Reducing carbon in a global economy.

These strategic priorities are expected to create co-benefits which include improved air quality and health, reduced noise and congestion and increased rates of growth and jobs. ZEVs contribute largely to these co-benefits and therefore the importance of this is highlighted throughout the document.

The 'Decarbonising Transport' document places local authorities at the forefront of delivery…

'Commitment
We will drive decarbonisation and transport improvements at a local level by making quantifiable carbon reductions a fundamental part of local transport planning and funding'

A Local Transport Plan will need to set out how local areas will deliver ambitious quantifiable carbon reduction in transport in line with carbon budgets and net zero. Funding will be conditional on demonstrating emission reductions through the Local Transport Plan.

Although electrifying fleet and providing ZEVCI influences the decarbonisation of transport, the Interim Policy Statement highlights how there are other societal and behavioural changes that play a role in the transition. As a result, this ZEVCI Interim Policy Statement hopes to address public awareness and behavioural change alongside the implementation of charge points in order to reduce car dependency, create healthier lifestyles and ensure safer and more equitable communities.

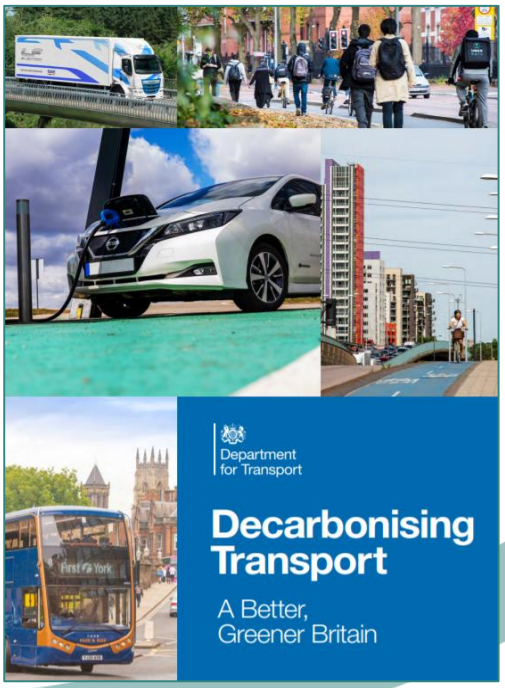


Figure 3: Decarbonising Transport[8]

2.2 Regional policy context

GM Transport Strategy 2040[9]

Air quality is a key focus of the Greater Manchester Transport Strategy 2040 (GMTS)[9] - Greater Manchester's current statutory Local Transport Plan. An updated 5-year delivery plan for 2021 to 2026 was published in 2021, and includes a range of recommendations for delivering Greater Manchester's clean air and carbon reduction ambitions, building on the *Air Quality Action Plan (AQAP) 2016-2021*[10] and *Low Emission Strategy (LES)*[11]. These include investment in the Greater Manchester Electric Vehicle (GMEV) charging network, amongst other projects.

GM 5 Year Environmental Plan[12]

The GM 5 Year Environmental Plan brings together key policies and actions from other GM-wider strategies and sets out what actions are required to meet the city-region's aim of becoming carbon neutral by 2038. The transport and travel section of the plan - developed in conjunction with GMTS 2040: Delivery Plan - identifies the need to phase out fossil-fuelled private vehicles and replace them with zero-emission (tailpipe) alternatives as a priority. To do this, the strategy recognises there will need to be a significant and urgent shift from fossil-fuelled private vehicles and an increase in charging infrastructure to support the increased use of ZEVs around the city region.

GM Clean Air Plan[13]

The GM Combined Authority and ten GM boroughs continue to work on a Clean Air Plan. The plan currently proposes the trebling of the number of publicly available rapid charge point's to over 300 (although some are planned for taxi and private hire use only). The plan also encourages GM businesses to switch to low and zero-emission vehicles. However, the plan also recognises that current EVCI provision in GM is below the north west and national average and that significant expansion is needed in order to reach ambitious targets

GM EVCI Strategy[14]

A GM EVCI Strategy has been adopted to support GM's 2040 Strategy ambitions and, delivery of GM's Clean Air Plan. The strategy sets out GM's vision for EVCI across the region and a set of strategic principles to guide the design and future development of the network.

The strategy recognises that significant expansion of the network is required and the important role of the public sector in providing charging infrastructure at the scale and pace needed to meet projected demand. The strategy aims to target people who may find it difficult to transition to an EV due to charging constraints, and focuses on providing fast charges in locations that encourage intermodal journeys. The creation of 'hubs', varying in power requirements and scale, will correlate with destination dwell times, whilst also catering for residential areas with on-street parking. The network of chargers will lead to a more sustainable electricity grid capacity whilst complementing existing vehicle duty cycles.

2.3 Local policy context

Stockport Council committed to being climate neutral by 2038 and adopted its 'Climate Action Now' Strategy in 2020. The strategy identifies seven priority workstreams that the council will work towards to tackle the effects of climate change. One workstream focuses on moving to carbon-free transport options and increasing walking, cycling and the use of public transport across the borough.

A council resolution on EV charging points was also made by councillors in November 2018[15], citing the continuing deterioration of air quality across the UK caused by fossil fuel burning. Councillors resolved to include the requirement that new developments (including conversions) make provision for dedicated EVCI and to asked the council leader to instruct officers to form a project group to devise a plan of how best to develop the borough-wide charging infrastructure needed to meet future demand. This strategy is a result of this resolution and has involved internal council teams, including transport, regeneration and planning. Input has also been given from the Energy Saving Trust and Electricity North West Limited (ENWL).

South East Manchester Multi Modal Strategy Refresh (SEMMMS)[16]

The draft SEMMM Strategy Refresh was consulted upon in Summer 2018 and included actions to:

- Increase the use of sustainable transport and supporting the creation of a low-emission future;
- Exploit new technologies and innovative approaches where they can add value to the strategy; and
- Implement 'Early Priority' interventions which include the expansion of the network of EVCI and encouraging housebuilders to incorporate EV charging into new development sites, both residential and employment.

Stockport's Core Strategy[17]

Stockport's Core Strategy (adopted 2011) and Unitary Development Plan does not contain any reference to ZEVs or ZEVCI. Nevertheless, there are still a number of policies which will affect how developers include ZEVCI within their developments and how the council will improve air quality across the borough:

- Core Policy CS10 An Effective and Sustainable Transport Network states the council will work with GM boroughs on implementing Air Quality Management Plans to facilitate improvements in air quality along major road corridors and will also promote the use of cleaner fuels amongst motorists, particularly for its own fleet of vehicles.
- Development Management Policy SD-6 Adapting to the Impacts of Climate Change states that all development must avoid, mitigate or reduce the impacts of climate change during the design process.
- Development Management Policy SIE-3 Protecting, Safeguarding and enhancing the Environment states that '*new development that seek to reduce air, noise, light water or ground pollution in areas or locations where acceptable standards are already exceeded will be given positive consideration'.*
- Development Management Policy T-2 Parking in Developments states that developments should provide car-parking in accordance with maximum parking standards as set out in the existing adopted parking standards and that *'developments will avoid resulting in inappropriate on-street parking that has a detrimental impact upon the safety of the highway, and that they also avoid impacting negatively upon the availability of public car-parking'.*
- Development Management Policy T-3 Safety and Capacity on the Highway Network recognises that *'Developments shall be of a safe and practical design, with safe and well designed access arrangements, internal layouts, parking and servicing facilities*'.

2.3 Local policy context (continued)

Central Stockport Infrastructure Delivery Plan (IDP)[18]

Stockport Town Centre West Mayoral Development Corporation (MDC) is being used to deliver widespread regeneration across the town centre, with up to 5,000 new homes and 1,000,000 ft^2 of new employment floorspace planned for the area. With the project still in its early stages, opportunities exist for the MDC area to be used as a 'test bed' for rolling out ZEVCI and trailing new technologies. However, at present, grid capacity in town centre is not thought to be enough to accommodate both proposed development and a concurrent increase in ZEV charging.

The town centre's electric capacity constraints and lack of ZEVCI is recognised in Stockport Council's Infrastructure Delivery Plan (IDP)[17] which identifies some of the infrastructure requirements needed to support the regeneration of Stockport town centre up to 2040. The plan identifies two opportunities for charging infrastructure to be concentrated around proposed connectivity hubs and integrated with energy generation and battery storage (see table 1 below).

Should both schemes gain financial support, there could be a substantial increase in ZEVCI provision in the town centre and in the MDC area up to 2040.

Scheme Name	Project Description	Outcomes
New Connectivity Hubs	New multi-purpose connectivity hubs which consolidate car parking, cycle parking and EV charging – offering a flexible and space-efficient approach to future mobility needs.	Multi-purpose connectivity hubs concept can reduce the needs for on-site parking for new developments, and deliver town centre parking requirements to a more efficient and more flexible model including integration of EV charging.
Battery Storage Feasibility Study, Pilot and Roll Out	Complete feasibility assessment for the installation of battery storage across the town centre. Outcomes will present a plan for solar and battery storage infrastructure to be introduced across the town centre. This should include the rail station, multi-purpose connectivity hubs, and Stockport Council depots and station - to enable the transition of the council fleet to EVs by 2030. A pilot battery project should be developed to support a solar and battery storage infrastructure plan.	A feasibility assessment will identify demand and export capacity on the local network, identify potential sites for battery storage and appropriate capacities. This will enable a firmer timeline to be set for a wider roll out. Pilot can validate cost benefit and provide additional learning. Technology offer a low carbon heat and electricity source, and investment can provide necessary storage to increase flexibility and potentially increase level of intermittent renewable network can accommodate.

Table 1 – Stockport IDP Technical Appendix (Chapter 5.1)[18]

3.0 Data and intelligence

3.1 Zero-emission vehicles (ZEVs) and charge point types

Presently, there are three main types of ZEVs (sometimes referred to as Ultra-Low Emission vehicles (ULEVs)):[18]

- Battery electric vehicles (BEVs)
- Plug-in hybrid electric vehicles (PHEV)
- Hydrogen fuel cell electric vehicles (FCEV)

And there are currently three main types of EV charger:

- Slow
- Fast
- Rapid

Further information regarding the charger types can be found in Table 2 below.

Currently, the council are monitoring the development of FCEV and will draw upon the 'Greater Manchester Hydrogen and Fuel Cell Strategy'[19] for support. Greater Manchester Combined Authority are currently working to establish transport supply chains and build confidence in wider hydrogen provision. With this, the potential for hydrogen refuelling stations follow and current charge points need to be future -proofed to allow for this change and future technological advancements. Although hydrogen-refuelling infrastructure is focused predominantly on fleet and HGVs at first, it is likely that this will also roll out to private vehicles.

Each charger has different characteristics, and the council will work with TfGM to install appropriate chargers at each location, including new developments.

With the ongoing changes in advanced technology, it is expected that other ZEV charging speeds will come in to place to facilitate demand. This includes 150kW ultra-rapid charging which aim to charge a vehicle in under 20 minutes. These chargers are designed for convenience and will most likely be found in areas of short dwell time.

New and upcoming charging developments are also being implemented across the UK, with the increasing demand of ZEVs. Forecourt style charging has been successful in Essex, offering 36 EV chargers in addition to relaxation areas[20]. This style aims to bring added convenience and confidence to EV owners and provides a familiar facility to the traditional style petrol station. However, this style of charging development is unlikely to be located in town centres, but is more likely in service stations. Although Stockport may not directly utilise these style of charging points they may help residents with the transition to ZEVs and build the confidence to travel further afield.

	Slow	Fast	Rapid
Power	3-7kW	7-22kW	Up to 50kW
Charge time	4-10 hours	2-4 hours	25-40 minutes (80% charge)
Range added (per 15min)	3-6 miles	6-20 miles	35-45 miles
User Fees (approx.)	10-20 p/kWh	20-30 p/kWh + connection fees (around 50p)	30p/kWh and above + connection fees (around £1.00-2.00)
When to use	Work/home	Home/work & destination charging	Mid-journey refuelling stops
Compatibility	All	All (speed varies)	Most new BEVs, LEVC, TX (some PHEVs)

Table 2 – Types of ZEVCI

3.1 Zero-emission vehicles (ZEVs) and charge point types (continued)

There are currently three main types of charge point technology:

- Lamppost column
- Freestanding
- Wall mounted

The council, in coordination with TfGM, will constantly monitor and review existing charge point provision and assess the suitability of charge point's that integrate new technology with charging infrastructure. This includes kerbside charging, pop-up charge point's and wireless charging using induction pad.

The council will also assess whether charge point's can be powered by renewable energy sources such as wind and solar and whether electricity can be stored locally to provide load management or increased self sufficiency. Third parties, such as Gridserve[21], use the sun's energy to supply charging networks with 100% renewable and sustainably generated electricity. A range of services are offered with this technology, with the potential to operate reliable, low cost, clean energy solutions across a number of locations. These third party companies could help Stockport Council to implement the facilities needed for ZEVs and promote the use of sustainable resources.

Location	Charging Speed	No. of Charging Devices	Charger Type	Total No. of Connectors
Cheadle Royal Business Park	7-22 kW	1	Fast	2
Massie Street East Car Park	7-22 kW and 43 kW+	1	Fast/Rapid	3 (only 2 rapid)
Meadway West Car Park	7-22 kW	1	Fast	2
Edward Street	7-22 kW	1	Fast	2
St Petersgate Road	7-22 kW	1	Fast	2
Churchgate Car Park	7-22 kW	1	Fast	2
New Bridge Lane	7-22 kW and 43 kW+	1	Fast/Rapid	3 (only 2 rapid)
Heaton Lane Multi-storey Car Park	7-22 kW	3	Fast	6

Table 3 – Current Be.EV charging devices in Stockport[22]

3.2 Number of ultra low emission vehicles (ULEVs) on Stockport's roads

Be.EV is an electric vehicle charging infrastructure provider in GM_{23}. It is part of Iduna's electric vehicle charging brand whom specialise in sustainable infrastructure$_{24}$. Appointed by TfGM, their goal is to expand and maintain the city regions publicly owned electric vehicle charging network, making GM more sustainable and innovative. Further information on the Be.EV network is available from be-ev.co.uk.

Currently, there are 10 Be.EV charging devices in Stockport of which, 2 are rapid devices (see Table 3 and Figure 4 below).

In terms of spatial distribution, the majority of the Be.EV fast charge point's are located in town centre public car parks and at Cheadle Royal Business Park and Meadway West Car Park in Bramhall.

A rapid Be.EV charge point was recently installed at Newbridge Lane Car Park and at Massie Street East Car Park in Cheadle.

However, multiple other privately operated but publicly available charge point's (slow, fast and rapid) are installed throughout the borough at locations such as supermarkets, park & ride sites and car dealerships (labelled as 'other public charge point locations' in Figure 4 below). Although more widespread, some of these charge point's have restrictions on who can use the chargers.

Gaps in charge point provision exist to the east of the borough in Romiley and Marple and there are currently no publicly available charge point's in residential suburbs south and south west of the town centre.

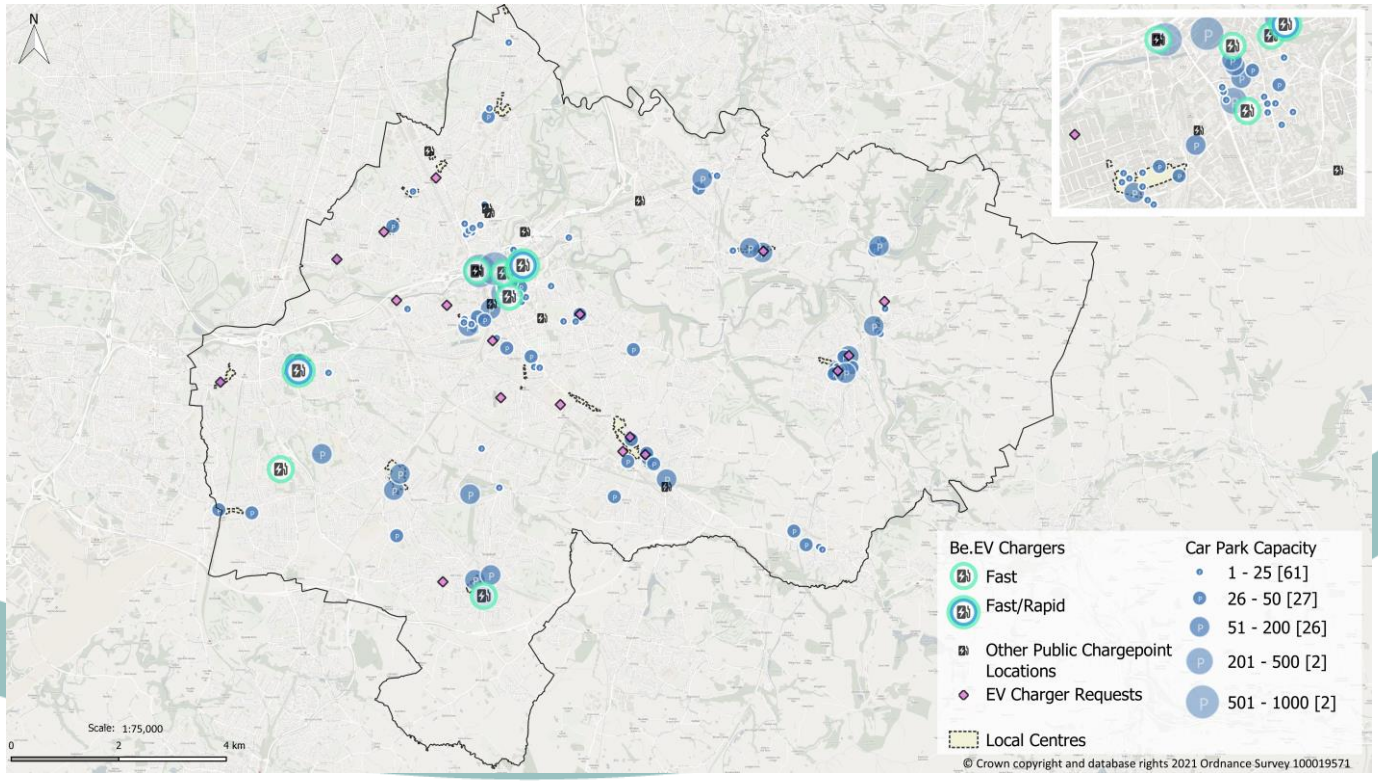


Figure 4 – Existing EV charge point locations, charge point requests and car park locations$_{25}$

3.3 Ultra low emission vehicles (ULEVs) current growth

The DfT defines ultra low emission vehicles (ULEVs) as vehicles that *'emit less than 75g of carbon dioxide (CO2) from the tailpipe for every kilometre travelled. In practice, the term typically refers to battery electric, plug-in hybrid electric and fuel cell electric vehicles'*[26]. It is worth noting the figures below are subject to minor revision by the DfT between quarterly publications when individual vehicles are reviewed against this criteria.

The data looks at ultra low emission vehicles (ULEV) which comprise of both BEVs and PHEVs. It indicates an upward trajectory in the number of registered ULEVs in Stockport year on year, with 866 registered ULEVs in Stockport in Q2 of 2020 compared to 27 in Q1 of 2012 – a 3015% increase[26a].

However, ULEVs still currently make up a small proportion of registered cars in Stockport – just 0.5% in 2019[26b].

Stockport has the second highest number of registered ULEVs as a proportion of total number of registered cars in a GM district.

The is reflected at a GM level where there were only 4,740 registered ULEVs compared to over 1 million registered cars (0.4%)[26c]. Despite this, the proportion of ULEVs has increased year-on-year.

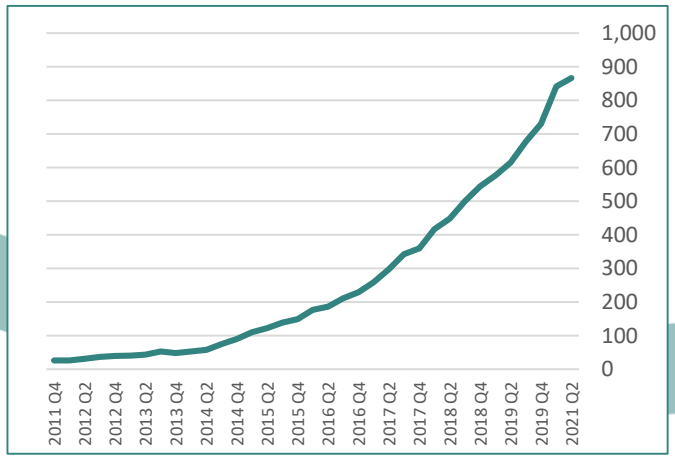


Figure 5 – Registered ULEVs in Stockport by Quarter[26a]

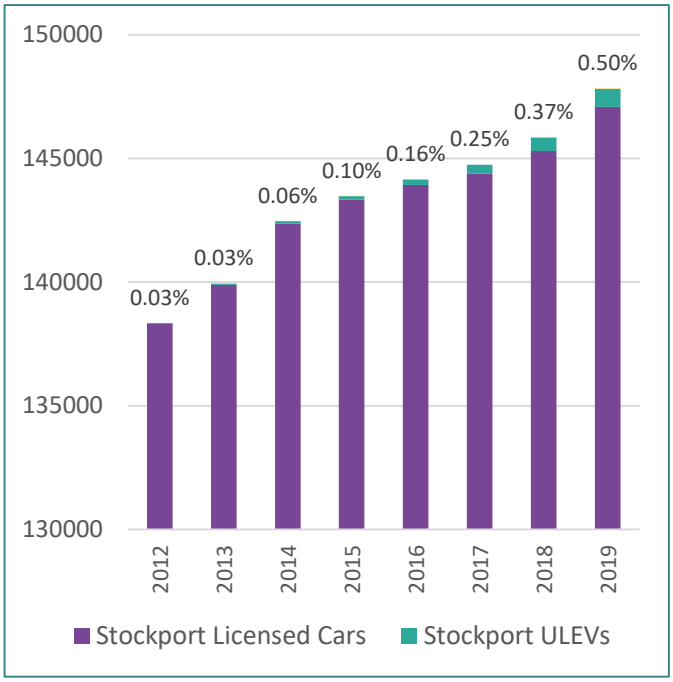


Figure 6 – Proportion of ULEVS Registered in Stockport[26b]

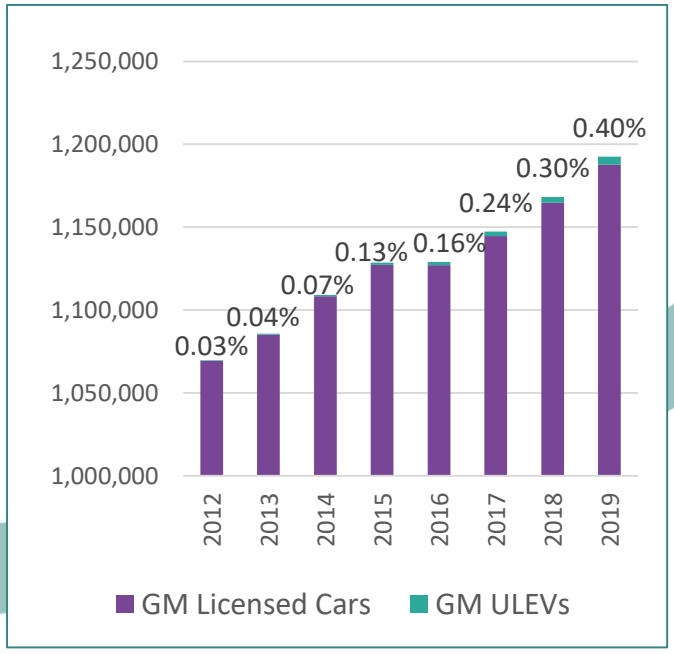


Figure 7 – Proportion of ULEVS Registered in GM[26c]

3.4 Projected growth of vehicle type

According to projections compiled by Reflect*, an innovation and research projected hosted by ENWL (the DNO), demand for ZEVs in Stockport is expected to increase but there is a slower increase in proportion of BEVs in the 'medium' scenario compared to 'maximum' scenario. By 2050, it is estimated that BEVs will make up between 75% ('medium' scenario) and 98% ('maximum' scenario) of the total car stock in Stockport[27a].

An initial increase is projected in PHEV stock, for 'medium' and 'maximum' scenarios but under the 'maximum' growth scenario, the number of PHEV vehicles decreases after 2030.

This would reflect the expectation of an improved confidence in the ability to charge your vehicle.

The market in electric vans is currently less established than the car market, and this is reflected in future demand projections with slow initial uptake of both BEV and PHEV vans.

6,089 vans are expected to be PHEV by 2050 under the 'medium' growth scenario, but number of PHEV predicted to be zero under the 'maximum' PHEV scenario[27b]. Consideration in this 'maximum' scenario should be given to the impact of the GM Clean Air Plan which encourages the move to less polluting vehicles.

The 'maximum' BEV scenario could result in an uptake of over 17,000 electric vans by 2050 - 86% of total van stock[27b].

Medium scenario – Policies to achieve 50% ULEV sales in 2030 and 2040 ban on new ICE/HEV sales.

Maximum scenario – ICE, HEV and PHEV sales are banned in 2030. This exceeds the Committee on Climate Change's recommendations and provides a very rapid uptake of BEV's.

It is important to remember that all predictions are subject to change as the technology develops.

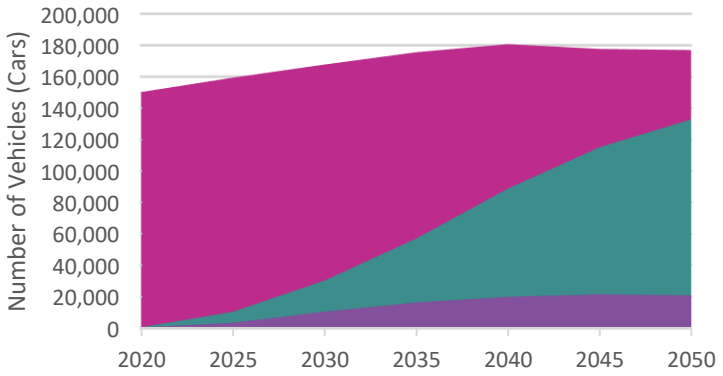


Figure 8 – Proportion of BEV and PHEV of Total car stock under 'medium' growth scenario[27a]

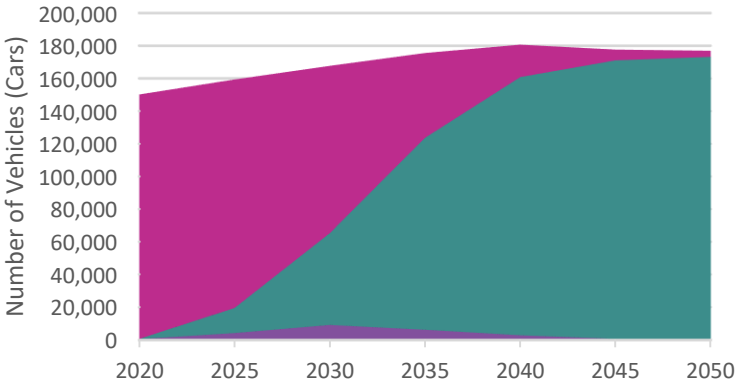


Figure 9 – Proportion of BEV and PHEV of Total car stock under 'maximum' growth scenario[27a]

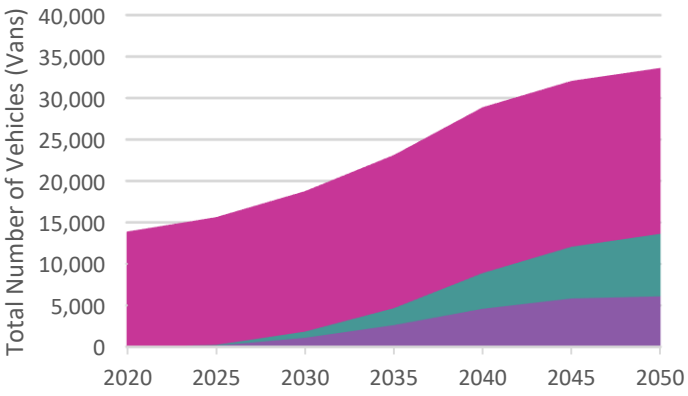


Figure 10 – Proportion of BEV and PHEV of Total van stock under 'medium' growth scenario[27b]

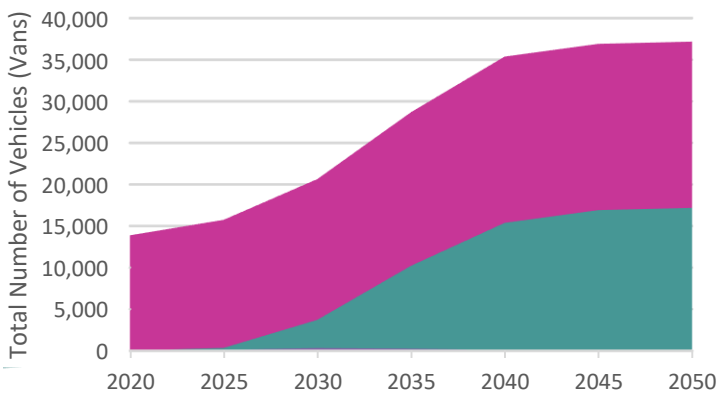


Figure 11 – Proportion of BEV and PHEV of Total van stock under 'maximum' growth scenario[27a]

*Data was sourced via the Reflect project/ENWL however, the specific dataset was provided by Element Energy directly and is not publicly available/only available on request

3.5 Demand for charging points

In order to estimate future demand for charging points, work has been undertaken to:

- Review projected EV up-take in GM;
- Estimate the ability to charge at home in GM;
- Model on-route charge demand; and
- Forecast the number of chargers required.

Over the next 2 years analysis suggests that only an increase in fast and rapid chargers is needed. Currently, there are 10 Be.EV charging devices in Stockport of which, 2 are rapid devices (see Table 3 and map below). Climate Action Now reflects the ambitious aim to increase council maintained public electric charging points up to 30 by 2025[28].

As the transition to ZEVs and provision of ZEVCI are co-dependent, it is difficult to understand how these trends will alter in the long-term, post 2025.

There is a large degree of uncertainty regarding the projection of ZEVs, with the ever-changing nature of the technology involved and private developer aspirations. Therefore, it is essential that data is reviewed on a regular basis for ZEVs and charging infrastructure to ensure the council and private providers can accommodate demand and ambitious targets are set.

Figure 12 below identifies the location of the Be.EV chargers and also indicates where primary substation locations are that power these. Stockport Council will continue to monitor the capacity of these substations and liaise with ENWL to ensure a strong network is in place to cater for the increasing demand of charge points.

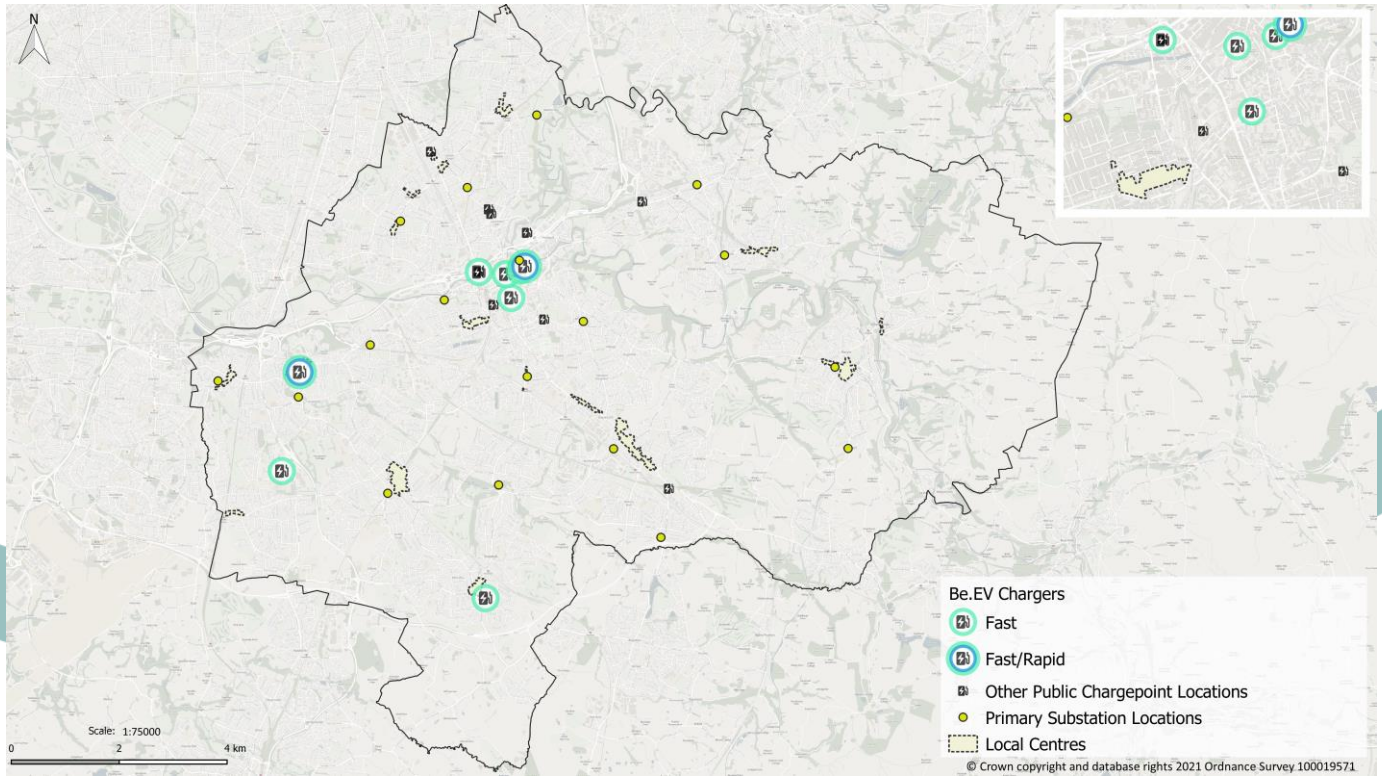


Figure 12 – Existing Be.EV chargers and Primary Substation locations[29]

3.6 Zero-emission vehicle user profiles

ZEV users in Stockport can be categorised under the following profiles:

- Taxi
- Light Goods Vehicle (LGVs)
- Local Authority and other public sector fleets
- Car clubs
- Private car drivers (local)
- Visitors to the area

This Interim Policy Statement does not discuss ZEVCI for HGVs and buses, with targets from the Government set apart from those of private vehicles. A further strategy would be necessary for HGVs due to the differing level of infrastructure needed to power these and need for tailored charge points, due to the purpose and longevity of their journeys. The Greater Manchester Combined Authority have recently published the 'Greater Manchester Hydrogen and Fuel Cell Strategy 2021 – 2025'[30]. This emphasises how the GMCA aim to deliver there net-zero and carbon target and highlights the policy initiatives taking place to ensure hydrogen is introduced. Recommendations highlight the transition of public sector vehicles to FCEV and reinforce the wider benefits to air quality as a result. To facilitate the transition, planning for wider hydrogen refuelling stations will also be deployed, catering for a range of ZEVs in Stockport.

Further to this, more ZEV user categorise may arise in the future, with e-scooters trails within neighbouring districts being implemented. Stockport Council will continue to monitor neighbouring district's trails, with the aspiration to implement similar schemes when successful.

Taxi

Taxi trade charging requirements have been analysed with estimates from the Clean Air Plan (CAP)[31] modelling that 15% of all hackney cab and PHEV trips will need to be made by EV by 2025 in order to achieve air quality compliance. In terms of infrastructure that reflects between 34 (low scenario), 90 (central scenario) and 190 (high scenario) rapid charging devices to support the transition. For Stockport, this relates to around 15 taxi charging points required, of which the first three are still in the planning stages.

LGVs

The council recognises that within the GM CAP, limited options are available that reflect varied usage scenarios. This ranges from sole traders who may charge at home to large fleet of vehicles which may have further charging needs that are similar to those of HGV charging infrastructure. The council will continue to monitor usage, with the potential to implement charging infrastructure at appropriate locations.

Local Authority and other public fleets

The majority of local authority and other public fleets that are zero-emission vehicles will rely on the workplace for charging infrastructure. The council will seek to implement ZEVCI points in council depots to support the move to zero-emission vehicles to ensure vehicles are ready for use by employees during there time at work.

3.6 Zero-emission vehicle user profiles (continued)

Private car drivers

Engagement is essential for the promotion, marketing and utilisation of ZEVs. In order for residents to gain confidence in zero-emission vehicles, it is key that the topic is visible within the community and discussion and engagement is available to help understand their perceptions on ZEVs and the transition and help them overcome any barriers.

Other councils have carried out the engagement process in a number of different ways to ensure target populations are reached. This includes the creation of a website dedicated to ZEVs such as https://electricbrighton.com/[32] where information and surveys are available. Alternatively, more traditional measures can be used such as consultation or letter drops of surveys.

Currently, Stockport Council are collating the information provided by members of the public whom have contacted them regarding vehicle charging without pro-actively soliciting this information. Hence, this reflects how communicative dialog has already begun prior to formal engagement.

Visitors

Visitor profiles may refer to those who stop off at Stockport whilst on route to their destination. It may also refer to visitors whom travel to Stockport too. Although visitors are not necessarily residents within Greater Manchester, it is important that they too have access to the ZEV facilities and charging infrastructure. Online platforms such as ZapMap[33] and Be.EV can ensure ZEV users are able to plan their journey prior to their visit and relieves anxiety surrounding charging their vehicle. Therefore, it is key that these online platform are updated on a regular basis and coincide with current charging infrastructure. The length of a visitors' stay will be a factor in deciding which charge point is most appropriate. Rapid charge points are more likely to be used by those visitors travelling through Stockport as part of a longer journey and slow charge points are likely to be used by those long-term visitors, where charge points are located near accommodation and hotels.

4.0 Vision

Taking account of the challenges and opportunities identified, the Council's vision is that: "Stockport's ZEVCI network will be flexible, fair and accessible for all residents and businesses in Stockport"

This vision will be supported by a number of objectives which explain the council's priorities and interventions for ZEVCI in Stockport:

1. Facilitate the expansion of the existing network in a way that meets the forecasted demand by providing the right types of charging infrastructure in the right locations;
2. Work collaboratively with Central Government, the Combined Authority, Public Bodies and Power Operators;
3. Explore wider measures to future proof ZEV infrastructure and support the delivery of the Clean Air Plan;
4. Raise public awareness and increase confidence towards ZEVs;
5. Update ZEV parking and design standards; and
6. Review council fleet to reflect the transition to ZEVs.

From these objectives, vision principles (VP) have been devised to understand how these objectives will be managed and achieved. These will be regularly reviewed to ensure the council is making progress against each principle. Further information regarding each principle can be found in **Appendix 1.**

1
- **ZEVCI1** Location preferences
- **ZEVCI 2** Town centre charging
- **ZEVCI 3** Cluster approach to ZEVCI
- **ZEVCI 4** Engagement with private developers and land owners

2
- **ZEVCI 5** Collaborative approach to the delivery of charge point infrastructure
- **ZEVCI 6** Data capture, performance and monitoring
- **ZEVCI 7** Cooperation and coordination with DNO
- **ZEVCI 8** Support for all types of zero-emission vehicles

3
- **ZEVCI 9** Technology and renewable energy
- **ZEVCI 10** Future-proofed and flexible charging infrastructure

4
- **ZEVCI 11** Public awareness of the zero-emission vehicle market

5
- **ZEVCI 12** Parking management and requirements

6
- **ZEVCI 13** Deployment of zero-emission vehicles within Stockport Council's fleet

5.0 Challenges and opportunities

Whilst demand for zero-emission vehicles and charging points can be projected and modelled, there are a number of barriers which need to be overcome for that demand to be met. It should also be noted that provision of infrastructure by the public sector is only one factor involved in meeting demand.

However, in preparing this Interim Policy Statement , several Stockport-specific challenges and opportunities associated with ZEVs and the charging infrastructure have been identified. The following issues will be addressed in the table below alongside a vision principal (VP) and action:

- Promotion, branding and marketing;
- Charger locations (on-street or off-street);
- Developer contributions, parking and ZEVCI considerations;
- Means of powering charging infrastructure;
- Requirements for different vehicle types;
- Bay management in public car parks and the potential for loss of parking revenue income; and
- Equity of charge point provision.

5.1 Key issues for consideration: Promotion, marketing and branding

VP	Challenge/Issue	Action
	Ensuring ZEV chargers are easy to use and convenient to use.	• The council will liaise with TfGM over the promotion and marketing of charge point's located within the borough, to ensure consistency across GM and ensure the chargers are accessible and easy to use for customers.
	Increasing knowledge and awareness of ZEVs and ZEVCI and increasing uptake across the borough.	• The council will publicise the plans of planned charge point infrastructure, raise awareness of the borough's existing charge point's and highlight how the Interim Policy Statement fits with the council's wider plans; • Methods of promotion and marketing may include: ➢ Updates on the council website, including a dedicated page of FAQs; ➢ Online map showing the location of future charge; point's/allowing residents to suggest future charge point locations and the type of charger to be installed; ➢ ZEV-related posts across social media platforms; ➢ Press releases; ➢ Emails to relevant stakeholder groups; ➢ Advertisements within council office buildings and other council owned buildings such as libraries, where members of the public can find more information about charging and ZEVs; ➢ Focus groups with people who own or are thinking of buying ZEVs; and ➢ Use of business networks (local and themed) to disseminate ZEV-related information (e.g. promoting information to local car dealerships so they are better prepared for customer queries).

An example of online consultation is shown below is Commonplace. This allows the public to provide input in to where lamppost charger for EV's should be located in Greenwich

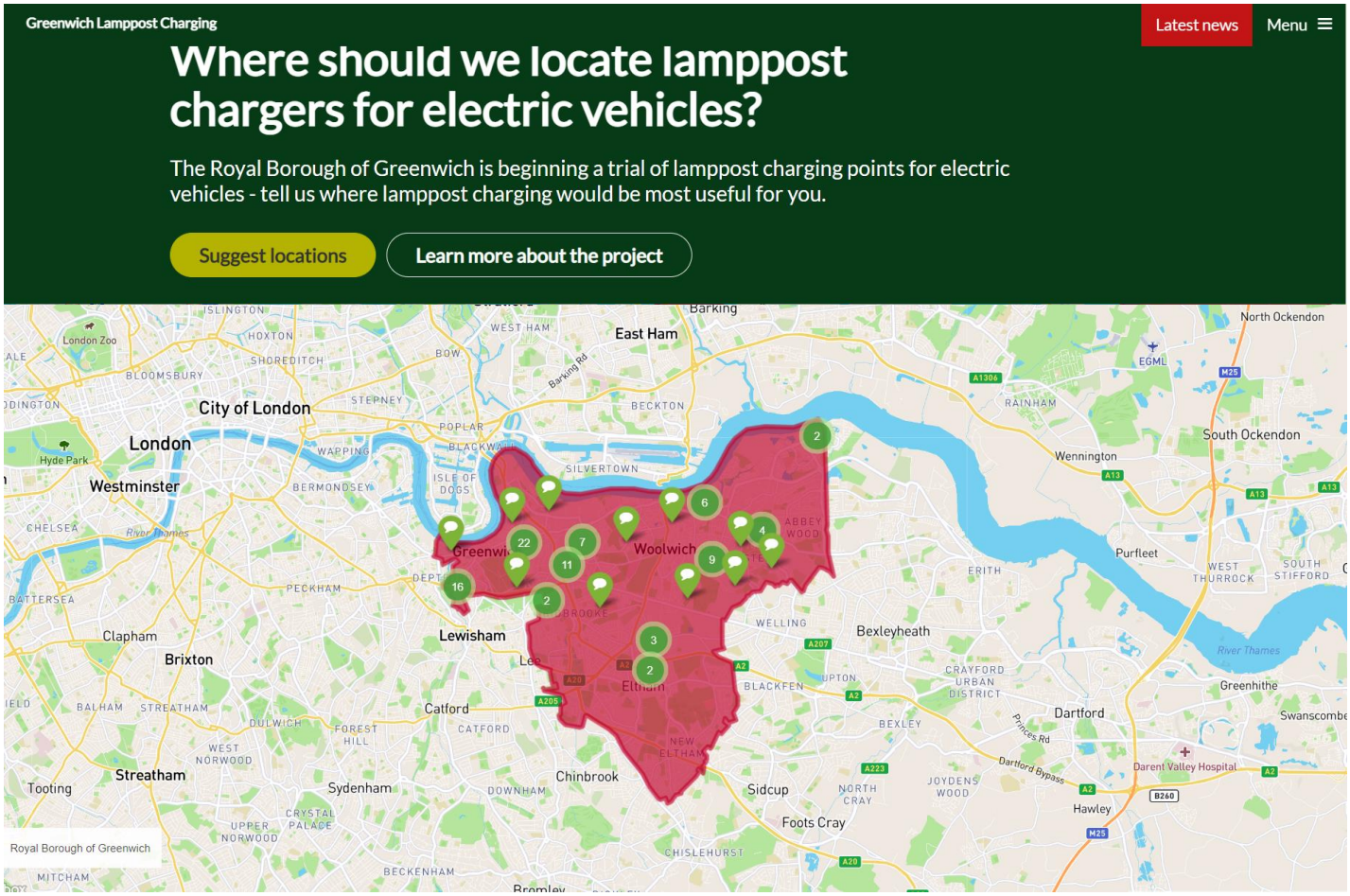


Figure 13 – Commonplace online consultation[34]

5.2 Key issues for consideration: Charging locations (on-street and off-street)

VP	Challenge/ Issue	Action	
		On-street chargers	**Off-street chargers e.g. car parks**
	Charge point location	• The council will consult over the proposed location of on-street chargers to ensure that they can be used by the greatest number of residents and insure they are acceptable to the community of the area. • Where possible, the council will look to ensure that on-street chargers are not installed directly in front of active frontages.	• The council will identify which car parks have the greatest demand for ZEV charging throughout the year • Consultation will be undertaken as necessary for the site involved.
	Dwell time of parking/ZEV drivers requirements	• The council will ensure the correct chargers are installed in the right locations. A mix of chargers will be installed reflecting with the type of usage expected to make the best use of space. • The council will monitor and review the location and type of chargers on a regular basis. Usage, amongst other factors will be considered to understand the type of charger best suited to the location.	• The council will ensure the correct chargers are installed in the right locations. Car parks in which vehicles have longer dwell times will have slow chargers installed; short-stay car parks will have fast or rapid chargers installed. • The council monitor and review the location and type of chargers on a regular basis.
	Space allocation, especially in areas with existing parking pressures	• The council will determine what impact the granting of ZEVCI application may have in areas where parking is already an issue. • Site constraints, such as space, may limit number of vehicles that can be charged at any one time.	• The council will determine which car parks have capacity to enable ZEVCI to be installed without creating increased pressures on parking, especially where ZEV parking provision for new developments is proposed to be located off-site (e.g. Hillgate).
	Civil and electrical works and roll-out of charge point's	• The council will work with the distribution network operator (DNO) to ensure capacity exists before any works take place. • Full life cycle costs of new installation will be considered as part of any funding application or other funding process.	• The council will work with the distribution network operator (DNO) to ensure capacity exists before any works take place. • Life cycle and installations costs will be considered as part of site selection. Currently, sites allowing for multiple chargers are providing best value.

(continued)

VP	Challenge/ Issue	Action	
		On-street chargers	**Chargers located in car parks**
	Charge point setting and surrounding environment	• The council will position ZEV charging points so they are accessible and do not cause obstructions to pedestrians, wheelchair users, people with pushchairs or those with visual impairments. • The council will use signage to ensure that connecting leads remain tidy. • Options to reduce street clutter will be used as appropriate; examples include kerb build outs and styles of charge point such as those integrated in to streetlights. • All ZEV chargers will be designed to meet the needs of all users.	• The council will position ZEV charging points so they are accessible and do not cause obstructions to pedestrians, wheelchair users, people with pushchairs or those with visual impairments. • All ZEV chargers will be designed to meet the needs of all users. • The council will use signage to ensure that connecting leads remain tidy.
	Vandalism	• Charge points will be installed in locations with good levels of natural surveillance. • Dedicated bays will monitored by council enforcement officers.	• The council will install charge point's in visible locations and in areas with good lighting; some car parks may have additional security measures in place such as CCTV and security.
	Land ownership	• Charging points will only be installed on council controlled land such as the public highway.	• Council owned car parks will be preferred for charging points. • Formal legal agreements would be required for other sites to be utilised.
	Adaptability and flexibility to respond to new ZEV technologies	• The council will monitor trends in ZEV charging technology and where possible, future-proof existing infrastructure. • Localised energy generation and storage will be considered at appropriate locations.	
	Enforcement	• Enforcement action and penalty charge notice's (PCN) will be issued by the council to conventionally-fuelled vehicles parked in ZEV charging bays, 'Overstay' fines will be issued to ZEV drivers who block access to chargers, despite their vehicle being fully charged. This 'overstay' penalty could be issued via the charge point account also to prevent further duties for enforcement officers. • The council will adopt the standard bay markings approved which consist of 'ELECTRIC VEHICLES ONLY' text in white and a small green bar at the head of the bay (Figure 16). Existing bay markings will be upgraded to this design in the future • Currently, it is not an ambition to introduce the green registration plate scheme for ZEV parking. The overall situation will be monitored to see if the reduction in administrative costs is a possibility in regarding to parking income to the borough. • Signage will be located in relevant locations to emphasise maximum charging time at a charging point and regulate enforcement.	

Existing EV charge point locations, charger point requests, car park locations and pavement width (metres)

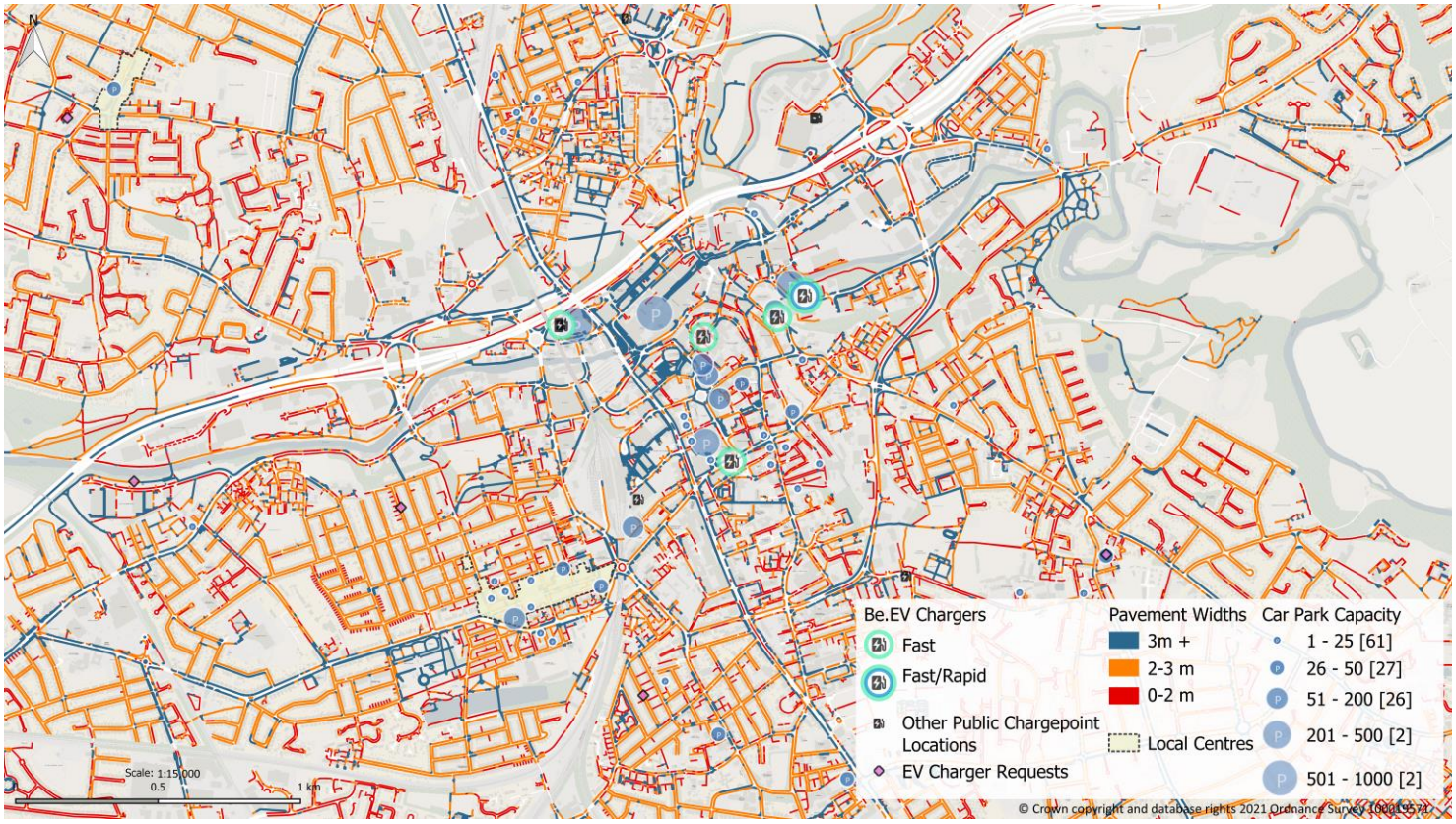


Figure 14 – Stockport Town Centre Pavement widths [35]

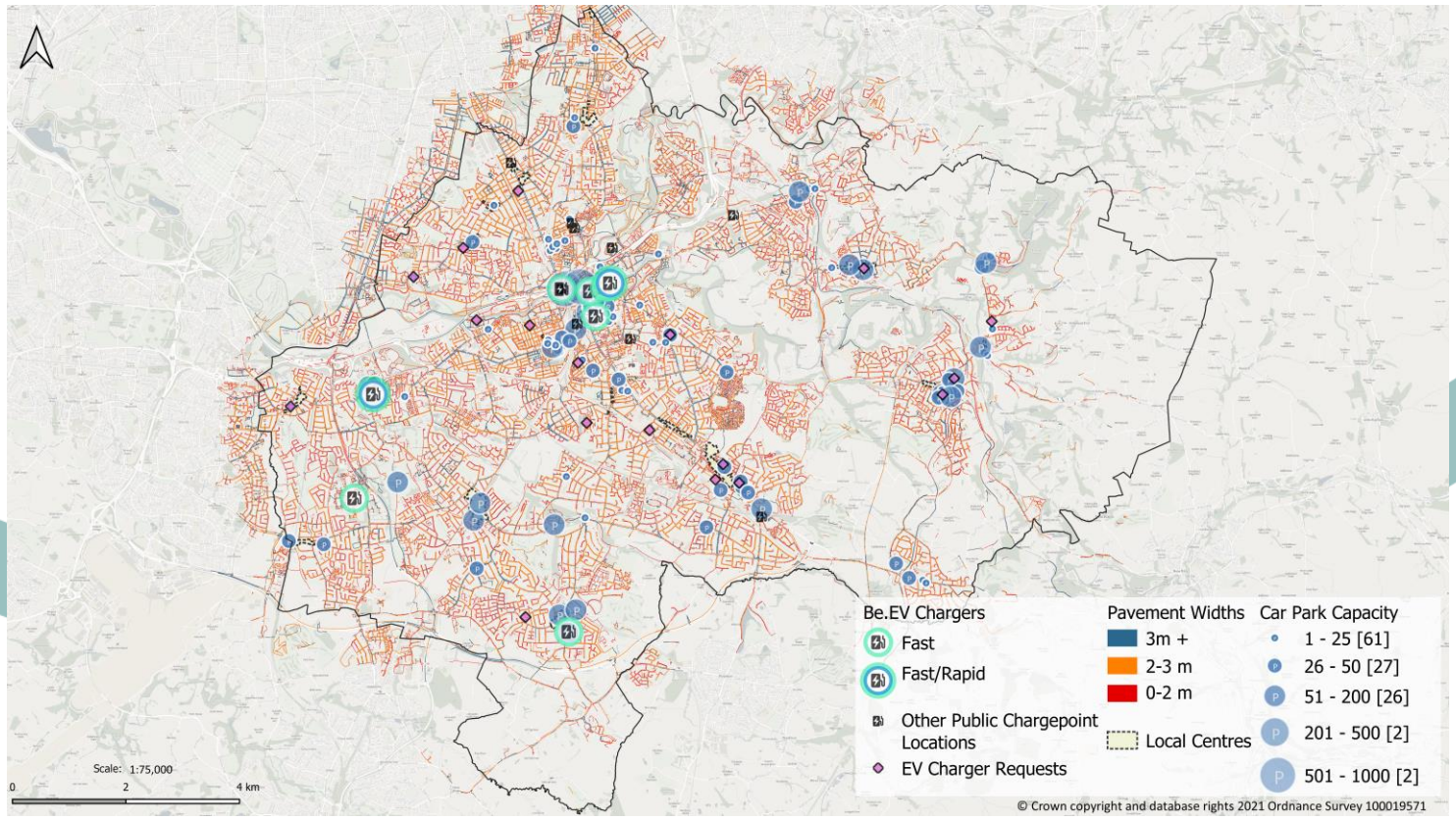


Figure 15 – Stockport Borough Pavement widths [35]

Approved bay markings for EVs

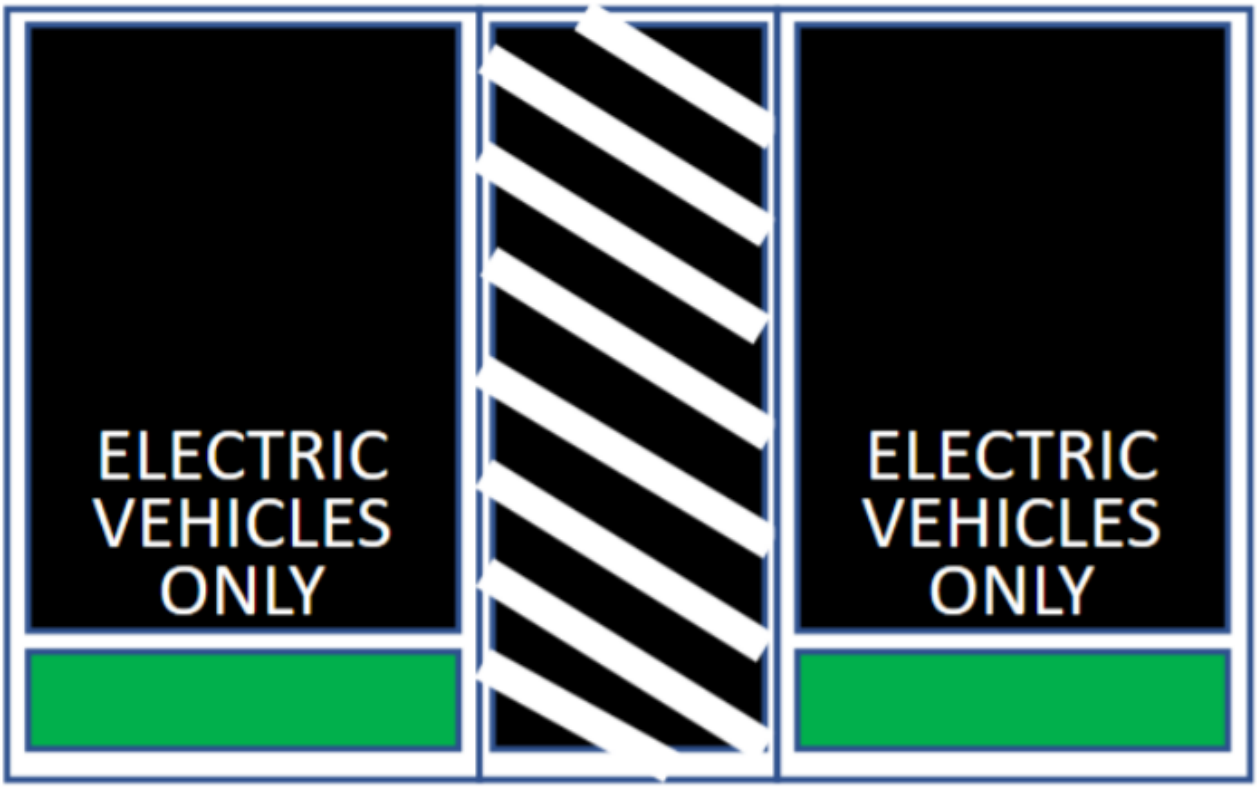


Figure 16 – Approved bay markings for electric vehicles [36]

Example of signage to accompany EV parking bays

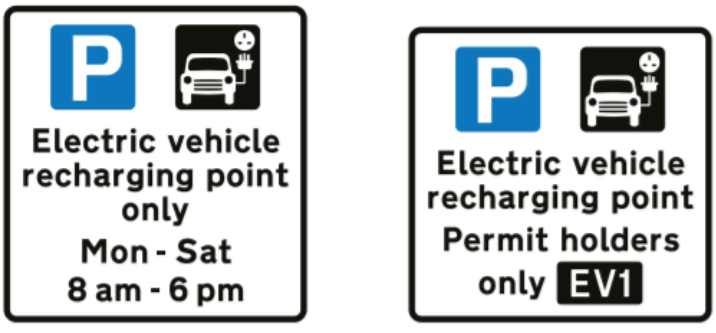


Figure 17 – Signage for Electric Vehicles[37]

Figure 18 - Example of signage for an EV charge point at Churchgate charging station

5.3 Key issues for consideration: Developer contributions, parking and ZEVCI considerations

VP	Challenge/Issue	Action
	Confusion over quantity and type of charging infrastructure requirements for new developments (especially where shared facilities are to be provided).	• The council have recently published guidance regarding the provision of EV charging points for new development that is available online. The document outlines the national and local planning context and outline requirements for the provision of EV charging points. The number of charging points to be provided will take into account the type of development/land use, the size of the development, the number of parking spaces to be provided and the estimated year of occupation. • This document also outlines how new developments will be future-proofed to accommodate the expected increase in EVs in Stockport. • Once the Local Plan is finalised, an Supplementary Planning Document (SPD) will be developed for ZEV charging.
	Clarity for developers/applicants over how to meet parking and ZEVCI requirements, especially where developers/applicants propose to provide parking and ZEVCI in areas away from the development to compensate/offset for the low levels of parking and ZEVCI provided within the boundary of the site itself.	• The council will work with developers/applicants to discuss what infrastructure can be introduced in order to meet planning and parking requirements on-site and increase ZEV uptake across the borough. • Planning conditions requiring contributions to provide off-site facilities will be requested.
	Ensuring that where possible, charge point's are integrated with the Be.EV network to ensure ease of use for ZEV drivers.	• The council will continue to work with TfGM to discuss how charge point's installed outside the TfGM framework can be integrated with the Be.EV charge point's.

Guidance for developers on the requirements for EV charging for new development

Figure 19 – Electric vehicle charging guidance [38]

5.4 Key issues for consideration: Means of powering charging infrastructure

VP	Challenge/Issue	Action
	Reducing the costs associated with powering and supplying charging infrastructure.	• The council will ensure ZEVCI is located in areas with good network capacity and reasonable grid connection costs; this will reduce the trenching involved for cabling to charge point columns and the trunking length for wall-mounted units. • Charge point's themselves will not be installed in the corner of car parks or at the end of a parking row where possible. This is to facilitate multiple bays and future-proof expansion if deemed necessary.
	Powering charging infrastructure through renewable energy. Renewable energy generation will require liaison with TfGM and other stakeholders for the site.	• The council will consider powering charge point's through localised, renewable energy generation through the use of solar photovoltaics (PVs) etc. • Developers will also be encouraged to power charge point's provided within developments using renewable energy generation.
	Integration of new technologies[37].	• The council will monitor charging technologies • Energy generation from solar and wind may not align with demand for ZEV charging at all times. Load management may be required to maximise the value of these systems, through smart charging. • Conversely Vehicle-to-Grid technology could be used when there is sufficient local energy capacity and ZEVs could discharge power from the vehicle back to the grid. This technology is still in its infancy and the council will monitor is suitability for deployment in ZEV charge point locations.

Existing charging stations

Figure 20 - Churchgate charging station

Figure 21 - Heaton Lane multi-storey charging station

Figure 22 - Petersgate charging station

5.5 Key issues for consideration: Requirements for different vehicles types

VP	Challenge/Issue	Action
	Catering for different dwell times of zero-emission cars.	• The council will consider the speed of charging infrastructure in locations where cars are expected to be stationary for long periods of time, putting less strain on electricity grid capacity. • The council will install fast or rapid chargers in locations where vehicles are expected to have short dwell times. 7kW charge points will be installed at the minimum.
	Catering for different dwell times of zero-emission vans and fleets.	• The council will recommend the installation of slow or fast depot-based chargers for company fleet owners where vehicles are left to charge overnight. • For businesses wishing to minimise time lost to charging and for those privately owned or leased vehicle owners who drive longer distances, the council will recommend the installation of rapid chargers.
	Catering for different dwell times of zero-emission taxis.	• The council recommend that most ZEV taxi drivers install a slow charger at their property to enable them to charge their vehicle before their shift. However, for taxi drivers without access to a private charger, or who are in between collecting passengers, the council will install rapid chargers as funding allows.
	Taxi drivers congregating at charge point locations early in the morning or late at night.	• The council in collaboration with TfGM will analyse and monitor the locations of taxi charging infrastructure and respond to any concerns about noise from residents and members of the public. • These charge points will solely be for taxi use so that the council can alter provision accordingly if noise or other factors become an issue. It also prevents public use during a taxi's time of need and ensures that taxis have priority, given that charge point time is essential for their job as a zero-emission taxi service.

User profile and appropriate charging infrastructure.

✓ Primary charging location

✓ Top-up/secondary charging location

	Home slow / fast chargers			Destination fast / rapid chargers					On-Route rapid chargers	
	At home	On-street	Community hub	Workplace	Visitor attraction	Town / City Centre car parks	Retail park	Transport interchange / P & R	Motorway service & petrol stations	Lay by
Hackney cab	✓	✓	✓			✓		✓		✓
PHEV	✓	✓	✓			✓		✓		✓
LGV	✓		✓	✓						✓
LA fleets				✓						
Car club	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Private vehicle	✓		✓	✓	✓	✓	✓	✓	✓	✓
Visitors (from outside GM)					✓	✓		✓	✓	✓

Figure 23 – User profile and appropriate charging infrastructure [39]

5.6 Key issues for consideration: Bay management in public car parks and the potential for loss of parking revenue income

VP	Challenge/Issue	Action
	Loss of parking revenue income caused by dedicating a higher proportion of parking bays for ZEVs in public car parks. Loss of parking revenue from on-street bays.	• The council will continue to review ZEVCI provision in car parks and review parking fees and enforcement arrangements for ZEV bays. Consideration may be given to: • Installing charge point's in under-used car parks or streets within a desirable location; • Relocating internal combustion engine (ICE) bays wherever possible; • Creating new parking spaces specifically for ZEVs; and • Introducing more flexible parking arrangements: ➢ Bays reserved for ZEVs during peak hours only, with pay and display parking bays enforced during other hours of operation; ➢ Introducing parking charges when users are not charging their vehicles. 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; and ➢ Making ZEV users pay for parking at all times.

Usage data of existing charging points from March 2019 to February 2020.

Note: Due to inconsistencies, St Petersgate car park data has been removed.

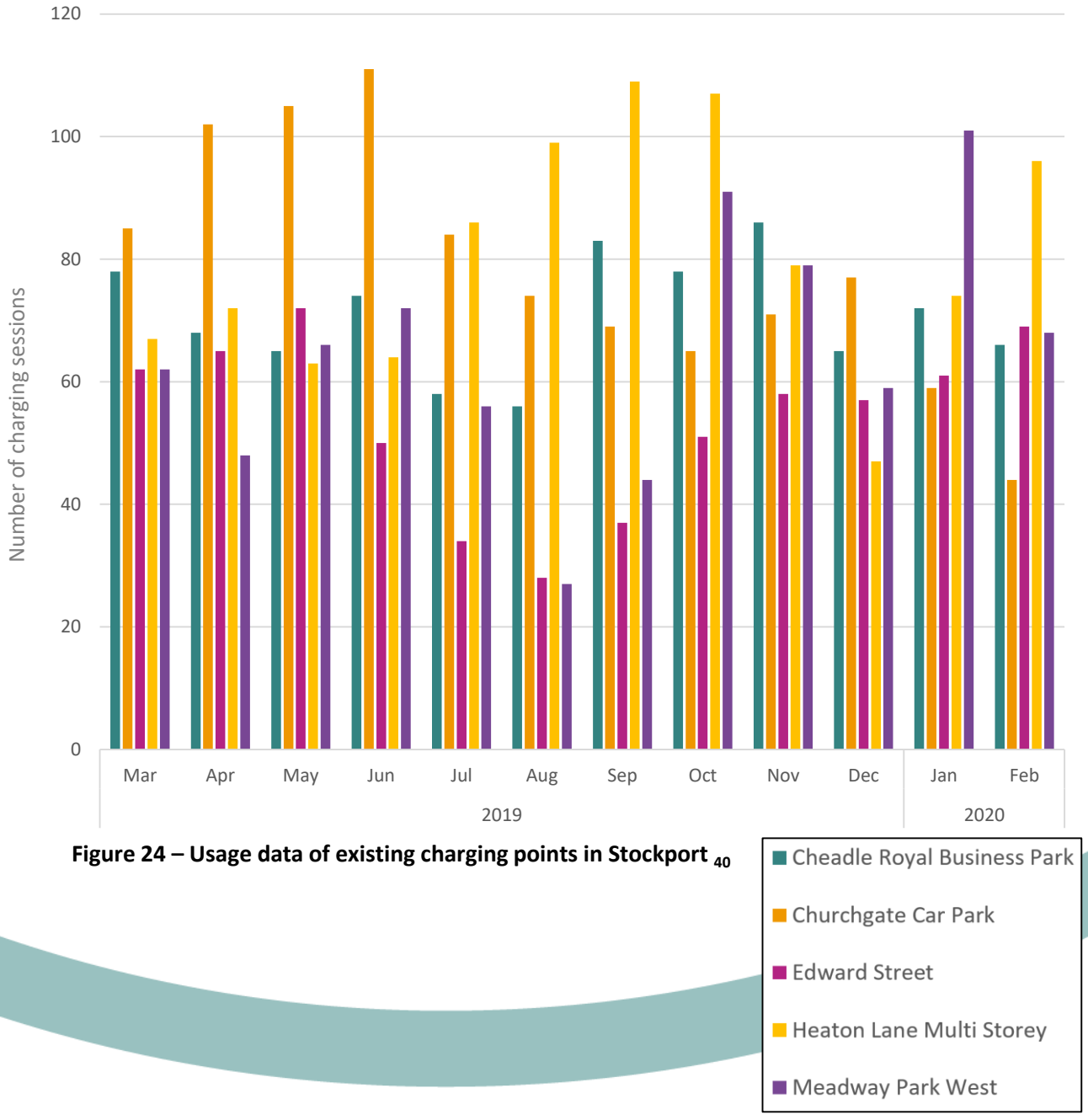


Figure 24 – Usage data of existing charging points in Stockport [40]

5.7 Key issues for consideration: Equity of charge point provision

VP	Challenge/Issue	Action
	• Equity of charge point provision for residents needs to be considered, particularly in light of the Governments ban in 2030 on the sale of new petrol and diesel vehicles. • There is a risk that private sector provision will be limited to more affluent areas or destinations where the investment return is more attractive. This leaves less affluent areas without access to charging infrastructure and can become a barrier to the transition to ZEVs.	• The council will continue to review ZEVCI provision in residential areas. • Public sector intervention will fill the ZEVCI gaps and invest in locations and types of charging that private investors find unattractive – facilitating the transition to ZEVs. • The council will encourage private sector investment within the public network to ensure a self-sustaining network. • Expansion of ZEV car clubs operating in residential locations where on-street parking is high and air quality is poor. • Encourage workplace charging for those who do not have a charge point at home – this could be included within workplace travel plans. • Off-street, community charging hubs in residential areas could ensure locations have provision. • Consultation with members of the public on where charge points are needed and any barriers preventing the transition to ZEVs. • Ensure ZEVCI is designed to provide for disabled ZEV driver with step free access and larger parking bays. • Charge point locations will be decided on a number of factors, although provision needs to be evenly spread to facilitate the transition to ZEV, it also needs to ensure demand is there so that charge points are fully utilised. • Tariffs for electric charge point's will be decided by TfGM.

Existing EV charge point locations, charger point requests, car park locations and percentage terraced housing

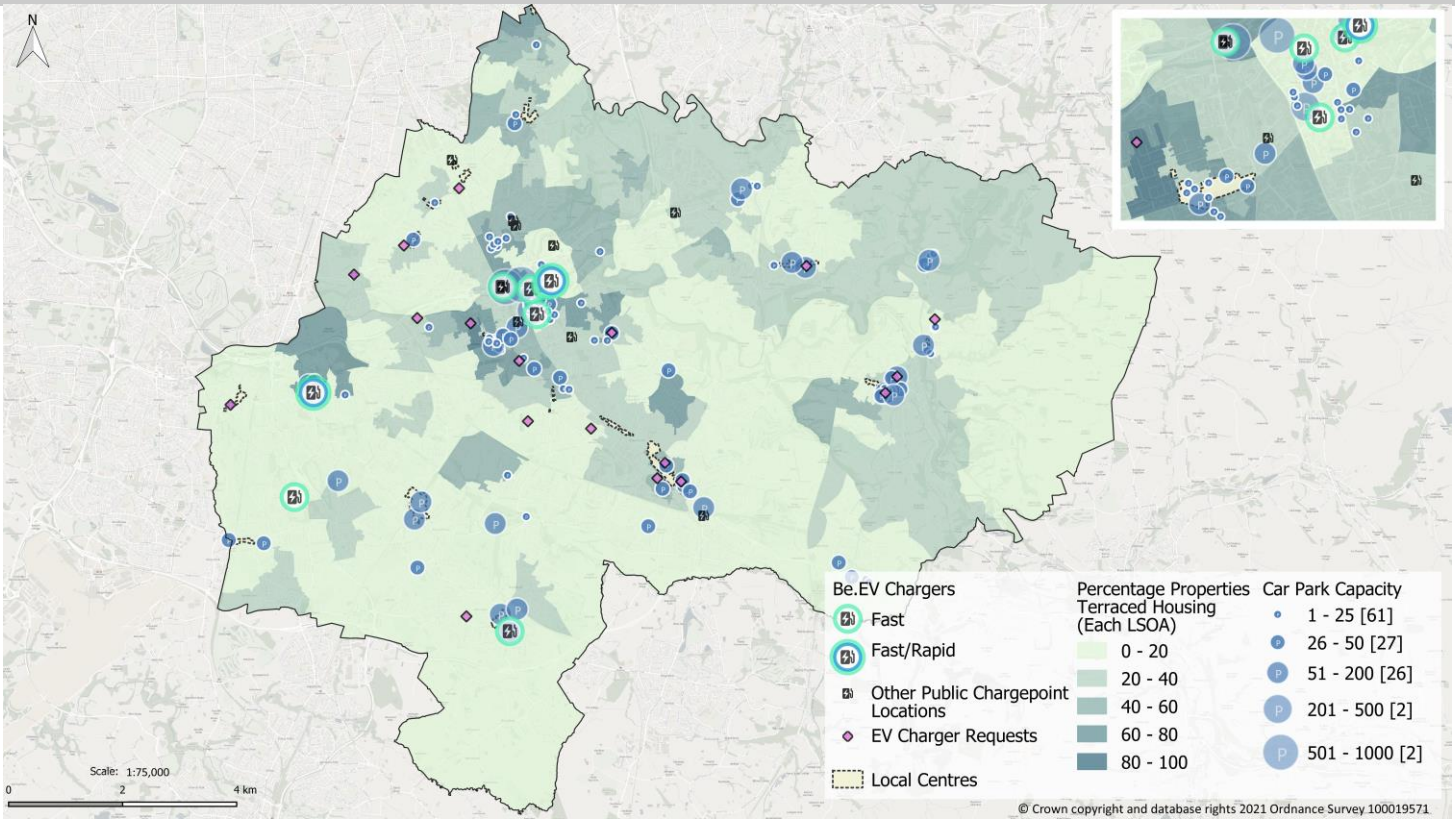


Figure 25 – Percentage of terraced housing in Stockport[41]

Existing EV charge point locations, charger point requests, car park locations and indices of multiple deprivation (IMD) decile

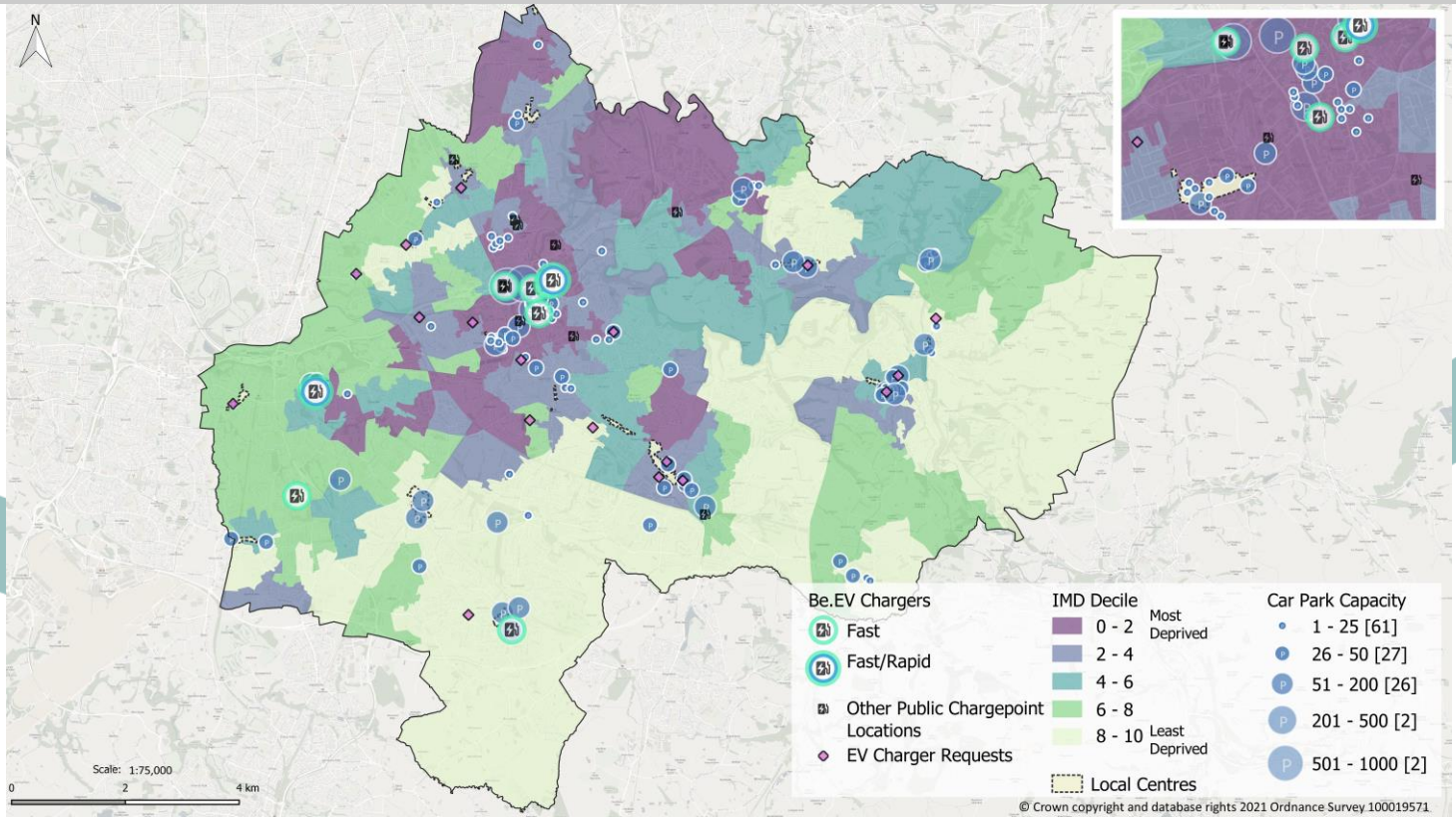


Figure 26 – IMD in Stockport[42]

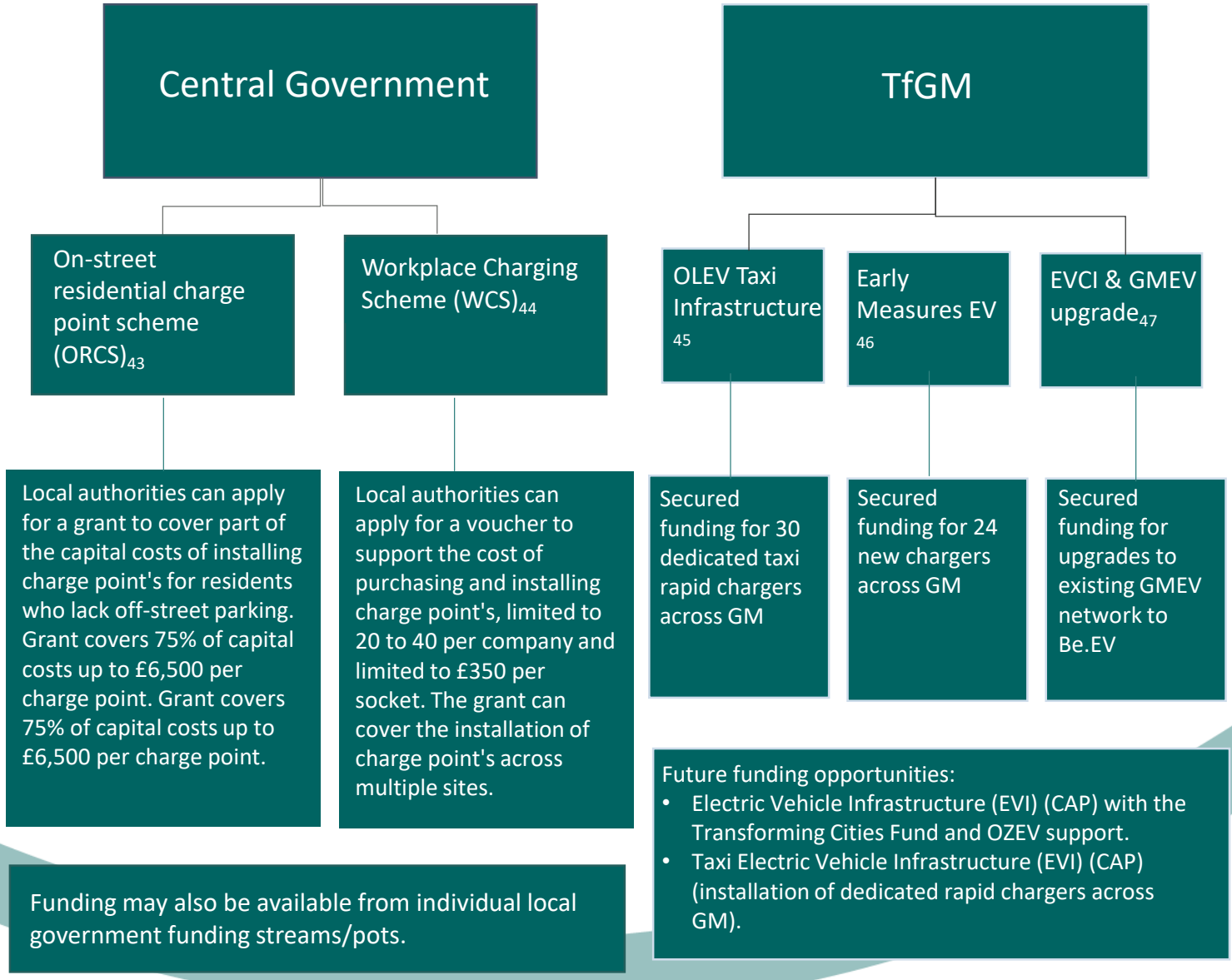
6.0 Action Plan

	Action	SMBC role	Action by	Timescale
1	**Facilitate the expansion of the existing network in a way that meets the forecast demand by providing the right types of charging infrastructure in the right locations**			
	Location preferences – Support the introduction of ZEVCI, particularly in public spaces	Lead	Stockport Council, TfGM, Charge point suppliers, ENWL, Developers, Land owners	Ongoing
	Town Centre charging	Lead		Ongoing
	Cluster approach to charge point infrastructure (including District Charging centres)	Lead		Ongoing (within 5 years)
	Engagement with private developers and land owners – Bid to relent third party funding opportunities to secure the delivery of ZEVCI	Require		Ongoing
2	**Work collaboratively with Central Government, the Combined Authority, Public Bodies and Power Operators**			
	Collaborative approach to the delivery of charge point infrastructure	Support	TfGM, GMCA, TfN	Ongoing
	Data capture, performance and monitoring	Support	Stockport Council, ENWL, TfGM, Charge point suppliers	Ongoing
	Cooperation and coordination with Distribution Network Operator (DNO)	Support	ENWL, TfGM, Stockport Council	Ongoing
	Support for all types of zero-emission vehicles - Assess opportunities to encourage the uptake of electric powered public transport, taxi services, e-scooters and cargo bikes	Lead/ Support	Charge point suppliers, Stockport Council, TfGM, Supplier for lease vehicles	Within 5 years
3	**Explore wider measures to future proof ZEV infrastructure**			
	Technology and renewable energy – Identify sustainable sources for ZEVCI	Lead/ Support	Stockport Council, Charge point suppliers, TfGM	Within 5 years
	Future-proofed and flexible charging infrastructure	Lead/ Support	Stockport Council, Charge point suppliers, TfGM	Within 5 years
4	**Raise public awareness and increase confidence of zero-emission vehicles**			
	Public awareness of the ZEV market	Lead/ Support	Stockport Council, TfGM, Supplier for lease vehicles	Ongoing
5	**Update ZEV parking and design standards**			
	Parking management and requirements	Require	Stockport Council, TfGM	Ongoing
6	**Review Council Fleet to reflect the transition to ZEV**			
	Deployment of zero-emission vehicles within the council's Fleet	Lead	Stockport Council	Within 3 years

7.0 Funding opportunities

Whilst private funding will also play a major role in expanding the ZEV charging infrastructure network in Stockport, public funding can be utilised to stimulate further private investment.

Stockport Council will respond flexibly as and when public funding becomes available. It should be noted, much of the TfGM funds are Government supplied. Some of the major sources of funding for ZEVCI are displayed below:



Other Identified Funding Streams

Other funding streams:

European Regional Development Fund (ERDF)

- 20 solar car ports with 10 EV charging points Merseyway
- 10 proposed at Endeavour House

Other Private Sector Funding

Evergreen Wave 2

- Possible installation of EV chargers as part of Phase 4 Stockport Exchange and wider Stockport Exchange scheme

Private funding:

E.g. ENWL funding (as a part of MDC area).

Funding may also be available as part of private enterprise investment to deliver local charging infrastructure

Developer Contributions

Developer contributions:

Stockport Council will, when relevant, request commuted sums from developers towards the provision of charge point's in lieu of on-site provision of charge points.

Commuted payments received may be pooled together (in line with planning legislation) and/or pooled with funding obtained from elsewhere so as to ensure that an integrated approach is adopted and to enable a more accessible network to be created.

Alternatively, Stockport Council may attach a condition to a planning condition requiring the developer to provide a charger within the public highway or within a public car park. Where this is the case, the cost of providing the EV charging points, including the cost of any Traffic Regulation Orders that may be required, would need to be met by the applicant / developer.

8.0 Monitoring

In order to monitor progress of the vision, targets have been set to understand how Stockport can adapt and improve

Although the Government will monitor and facilitate the implementation of net-zero chargers at a national level, it is important that monitoring is also completed at a local level.

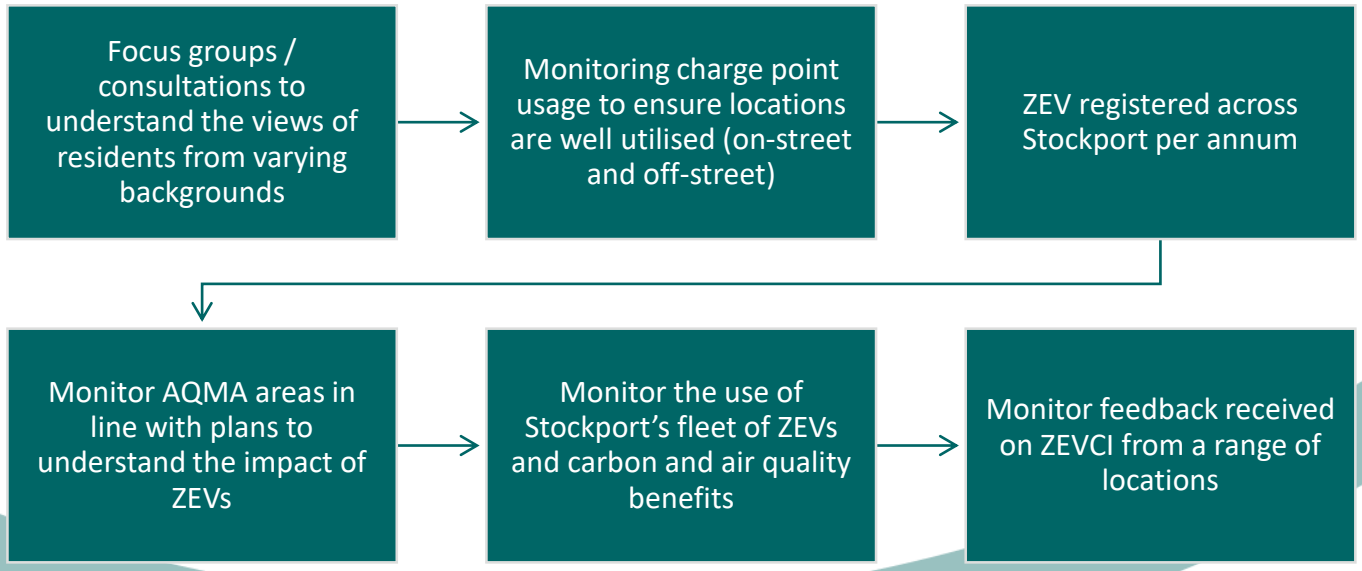
Public and stakeholder consultations can help shape ZEVCI and so it is key that input is also gathered and monitored to reflect this.

As a result, Stockport Council can provide a holistic overview and monitoring the data can help understand the further implications on air quality, health and economic growth.

Monitoring is already be conducted at specific charging points by third parties such as Be.EV and this will be useful in order to gather a baseline for interventions. Current monitoring can help to provide an overall understanding of how this data is collected and the third parties whom are involved within this process. It is important that this is identified to prevent any duplication by the council.

An officer steering group has been created for the responsibility of the Interim Policy Statement and will be overseeing its progress during the monitoring stage. This includes a number of people from varying organisations including Local Councils, TfGM and the Combined Authority.

Monitoring ZEVCI may include the collation of the following data:



9.0 Glossary

Term	Meaning
AQAP	Air Quality Action Plan
BEV	Battery electric vehicle
CAN	Climate Action Now
DfT	Department for Transport
DNO	Distribution Network Operator
ENWL	Electricity North West Limited
EV(CI)	Electric Vehicle (charging infrastructure)
FCEV	Hydrogen fuel cell electric vehicles
GM (CA)	Greater Manchester (Combined Authority)
LES	Low Emission Strategy
LEV	Low emission vehicles
MDC	Mayoral Development Corporation
NPPF	National Planning Principle Framework
OLEV	Office for Low Emission Vehicles
PHEV	Plug in hybrid vehicle
SEMMM	South East Manchester Multi-Modal
SMBC	Stockport Metropolitan Borough Council
TfGM	Transport for Greater Manchester
ULEV	Ultra low emission vehicle
ZEV(CI)	Zero-emission vehicle (charging infrastructure)

Appendix 1

Vision objectives and principles

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Facilitate the expansion of the existing network in a way that meets the forecasted demand by providing the right types of charging infrastructure in the right locations

ZEVCI 1

ZEVCI 1- Location preferences – Support the introduction of ZEVCI, particularly in public spaces

Stockport Council will prioritise the following locations for ZEVCI provision: 1) underutilised car parks; 2) public car parks; 3) on-street parking in local district and town centres; 4) on-street locations away from active frontages; 5) other on-street locations.

Each charge point location will be assessed on an individual basis with the aim that on-street locations will only be considered when there are no alternative off-street locations suitable or nearby. The speeds of the charge point itself will also depend on the location, with slow charging points likely to be located in areas of longer dwell time.

The charge point setting and surrounding environment will also be within visible locations with appropriate street furniture to ensure the safe charging during use. Accessibility for all users will be provided.

ZEVCI 2

ZEVCI 2 - Town Centre charging

Stockport town centre will encourage the use of ZEVs via charge points to reduce air quality pollution. Charge points will be installed in the town centre with the location and speed measured on a case-by-case basis. Prioritisation will be given to ZEVCI within multi-storey car parks which can act as mobility hubs and provide off-street charging.

Further to this, the council will also work with car club schemes to identify the location zero-emission car club bays within the town centre to maximise the opportunities for ZEV and facilitate multi-modal journeys. This will address some aspects of social equity and provide opportunities to utilise ZEVs without the added ownership costs.

ZEVCI 3

ZEVCI 3 - Cluster approach to charge point infrastructure

Stockport Council will install charge point's in clusters to increase the availability of charge point's and to reduce concerns from EV drivers about not being able to charge their ZEVs upon reaching their destination (charge point anxiety). However, where several chargers have already been installed in different locations within a local area, it may not be necessary to insist on a cluster approach to charging infrastructure. Therefore, this will be assessed on an individual charge point basis.

ZEVCI 4

ZEVCI 4 - Engagement with private developers and land owners – Bid to relevant third party funding opportunities to secure the delivery of ZEVCI

Stockport Council will ensure that ZEVCI is provided in all new developments and will develop policies and produce guidance on ZEVCI provision for new developments.

For larger and more commercial developments the council will seek to attract private sector investment to facilitate the roll out of ZEVCI. Opportunities from funds will help to attract large scale private investment such as the Charging Infrastructure Investment Fund (CIIF).

For developments that do not have on-site parking (e.g. car free residential developments in the town centre), Stockport Council will negotiate with developments for the provision of off-site ZEVCI in appropriate locations that are reasonably accessible to the site. This could involve the payment of a commuted sum toward the provision of ZEVCI or an electric car club vehicle/s. Alternatively, the provision of ZEVCI may be secured by planning condition.

As private sector developments are likely to install ZEVCI in attractive locations, Stockport Council will adopt a balanced approach and take responsibility for installing charge points in locations which are less likely to be covered in order to develop a consistent network and a good level of overall coverage.

Collaborative working with Central Government, the Combined Authority, Public Bodies and Power Operators

ZEVCI 5

ZEVCI 5 - Collaborative approach to the delivery of charge point infrastructure

Central Government has the largest power to influence the uptake in ZEVs. This is reflected in the ban of new petrol and diesel cars in 2030 and the aim to reach net zero-emissions by 2050. Further announcements such as the Rapid Charging Fund and roll out of 6,000 charge points will help to facilitate ZEVs too. Despite this, ZEVs are still costly. Stockport Council can help to apply pressure to the government to reduce the relative cost of purchase for ZEVs through a change in the taxation of vehicular sales . This could address social equity and provide further opportunities for ZEV ownership.

Stockport Council will work with TfGM, ZEV charge point providers, manufacturers, developers, businesses and residents to facilitate the provision of a charging network across the borough. As a result, a parallel approach between neighbouring authorities can be given to charge point design to ensure common standards are adopted early within the process and reduce confusion to the public.

Further guidance may be given on ZEVCI by these bodies to ensure that a consistent approach is given in the planning, delivery and roll out of infrastructure. Stockport Council will also continue to utilise their ZEV steering group to discuss any issues that arise with the network and establish and community engagement that is needed amongst locations.

ZEVCI 6

ZEVCI 6 - Data capture, performance and monitoring

All charge point's installed by Stockport Council and its partners will be capable of capturing data about usage and performance. This is essential in understanding the ways in which the new and existing ZEVCI is performing. The council will use this information to assess and make enhancements to the network when required. A collaborative approach to any data is essential amongst developers, TfGM, and the council to understand where demand is and assist in identifying who is to fund the charge point in question. Data can also help to set ambitious targets in the future to help with the ever-growing nature of ZEVs.

Data can also be used as an evidence base to discuss any funding opportunities across Stockport with TfGM to encourage the uptake in ZEVs amongst those neighbourhoods with low rates of utilisation. Data can also help to advise costings of ZEV charge points across the borough or within specific locations. Data can be analysed to understand any trends with specific charge points and any potential correlation with usage and charge point speed. If a location is highly utilised, this may provide a case to TfGM to upgrade charge point speed, in line with the demand.

ZEVCI 7

ZEVCI 7 - Cooperation and coordination with Distribution Network Operator (DNO)

Stockport Council will continue to work closely with ENWL as the local DNO to understand local capacity issues and opportunities which will support the roll out of ZEVCI. This will continue as the network grows through discussions regarding locations and technology requirements to ensure specialist knowledge, costing and successful delivery.

Conversations regarding substations within Stockport and their capacity are ongoing to understand the impact of ZEVs. A heatmap tool by ENWL (https://www.enwl.co.uk/get-connected/network-information/heatmap-tool/) has been used to understand and assess the capabilities of the electricity network and opportunities.

ZEVCI 8

ZEVCI 8 - Support for all types of zero-emission vehicles - Assess opportunities to encourage the uptake of electric powered transport and taxi services

Stockport Council will ensure that consideration is given to the provision of all types of zero-emission vehicles, including taxi, buses, vans, bikes and micro mobility solutions such as e-scooters.

The Council will work with partners to identify funding to enable residents and businesses to trial alternative zero-emission vehicles, including vans and cargo bikes. Iduna is a sustainable infrastructure development company which largely operates Greater Manchester's publicly available ZEV charging network (also known as Be.EV). Constant collaboration with Iduna and ENWL can help to expand and manage the network and understand where feasible locations are for different vehicle types such as taxi services. £2.4m of funding sourced from OLEV is to be used to introduce 30 dedicated Taxi Charging Posts for Hackney/Private Hire trade vehicles across GM by 2022 and therefore, discussions with TfGM have helped to understand where and if a proportion of these can be location in Stockport. Further to this, the Joint Air Quality Unit (JAQU) funded an early measures project which aimed to deliver 24 new rapid charging points across GM by May 2021. Next steps for Stockport Council are to continue dialog with JAQU regarding the implementation of ZEV charge points to find a funding options and to help assess where these are best located.

Stockport Council will also continue to work with TfGM to explore opportunities for electrifying the bus fleet. This is expected in the near future and will help to facilitate an overall reduction in air pollution, particularly within the town centre.

Explore wider measures to future proof ZEV infrastructure and support the delivery of the Clean Air Plan

ZEVCI 9

ZEVCI 9 - Technology and renewable energy – Identify sustainable sources for ZEVCI
Stockport Council will adopt a flexible approach towards charging infrastructure and will work with ZEV charge point providers and manufacturers, and other partners, to trial new technologies and explore local renewable energy generation.

Encouraging the uptake in ZEVs by financial incentives, such as a reduced costs of parking permits or car club memberships, can increase usage, particularly in deprived neighbourhoods where ownership is less likely.

Other methods that have been used more widely across other authorities include:

- Green number plate scheme;

- Zero-emission zones; and

- Workplace ZEV schemes such as the National Workplace Charging Scheme (WCS) which will contribute towards the costs of a charge point for a company.

ZEVCI 10

ZEVCI 10 - Future-proofed and flexible charging infrastructure
Stockport Council will undertake appropriate civil and infrastructure works to facilitate the future expansion of Stockport's ZEVCI network. The council will work with TfGM and suppliers to ensure that charge point's remain compatible with all types of ZEVs and systems (without having to remove or replace existing ZEVCI components) are flexible, and can be modified to reflect changes in use and demand.

Raise public awareness and increase confidence towards ZEVs

ZEVCI 11

ZEVCI 11 - Public awareness of the ZEV market
Stockport Council will work with residents, businesses and visitors to make them aware of the options and benefits of ZEV ownership and of the infrastructure provided to support their use.

This promotion and awareness will come through multiple forms including the promotion of home charging (share) schemes. This includes the National Electric Vehicle Home charge Scheme which contributes towards the overall costs of your own personal off-street charge point on your property. Further schemes are available to implement charge points for multiple houses in a location as long as residents are willing to share.

Stockport Council will also facilitate the ZEV workplace schemes and advise businesses about opportunities such as the Workplace Charging Scheme – whereby applicants can apply for charge points for a company to serve employees.

Stockport Council will also investigate trial schemes to enable businesses and visitors to trial zero-emission vehicles and car clubs which will be utilised for public use. Different methods of promotion will be used for different user groups to maximise the impact. This may include integrated information on mobile phone applications, the council website, letter drops and posters.

Update ZEV Parking and design standards

ZEVCI 12

ZEVCI 12 - Parking management and requirements

Charging vehicles at home overnight using a charge point is often cheaper for consumers. The government proposes *'every new residential building with an associated car parking space to have a charge point'*[48]. As a result, Stockport Council will ensure that new developments meet with ZEVCI regulations to promote the uptake of ZEVs when they are implemented.

Further to this policy states, *'every new non-residential building…with more than 10 car parking spaces to have one charge point and cable routes for an electric vehicle charge point for one in five spaces'.*

Stockport Council will continue to review ZEVCI provision in car parks, how it operates, and review parking fees and enforcement arrangements for ZEV bays.

For residents without off-street parking, on-street parking charging points may be utilised in appropriate circumstances however, this will be monitored. Clear guidance will be given on the safety of charging and consideration needs to be given to pedestrians on the footway and the concern of cables which may lead to accidents if used wrongly. This will be reviewed, with the council able to withdraw permission should on-street charging for residents become problematic.

Stockport Council will make charge point's accessible and where possible ensure they are a part of the publicly available Iduna (Be.EV) network. Intervention at workplaces will also ensure that ZEVCI is available for individuals for personal and fleet use.

Review Council Fleet to reflect the transition to ZEVs

ZEVCI 13

ZEVCI 13 - Deployment of zero-emission vehicles within Stockport Council's Fleet

Stockport Council will undertake a review of their council owned vehicles to provide an understanding of the current ZEV usage. From this, it can then be distinguished how the council wish to introduce ZEVs and set ambitious targets for the future fleet.

Stockport Council continue to add ULEVs to its fleet to reduce the Council's own carbon emissions whilst carrying out its business and will continue to make electric pool bikes available to staff when undertaking Council business.

Further understanding of charge point locations for depots may be shown in light of a ZEV review and the council may also provide ZEV driver training where necessary to ensure confidence and safety.

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