Rhondda Cynon Taf County Borough Council

Electric Vehicle Charging Strategy

Contents

Foreword

The “Climate Emergency” means that meeting the Welsh Government target of net zero carbon emissions by 2030 is a priority for our nation and all our citizens.

At a UK level, the phasing out of new petrol and diesel cars/vans by 2030 and all carbon emissions from new vehicles at the tailpipe from 2035, means that Rhondda Cynon Taf County Borough Council has a duty to ensure that the aspirations of residents and businesses in the area are extensively supported in their drive towards the use of Ultra Low Emission Transportation, and particularly in the use of Electric Vehicles.

As a Council we recognise that the transition to electric vehicles will help to reduce the level of airborne pollutants at the roadside, improving the environment in areas where we all live, work and play.

The Council has an important role to play in supporting growth in electric vehicles, including the creation of a supportive policy environment, by abetting the installation of new charging facilities for electric vehicles, and promoting their benefits to a wider audience.

Rhondda Cynon Taf will lead by example by introducing a strategy that will help deliver an electric vehicle charging infrastructure across the County Borough over the next 10 years and we will also ensure that the Council’s own activities use cleaner technology at the earliest opportunity, where it is practical to do so.

Councillor Andrew Morgan

Leader of the Council and Chair of the Cabinet

Executive Summary

Rhondda Cynon Taf has invested substantially in reducing the carbon emissions of our existing property portfolio and in restricting carbon emissions in all new build projects, both in the procurement process and in operational mode.

However, with a "Climate Emergency" having now been declared by the Welsh Government, the time has now arrived to take our efforts to the next level, and the Council's openly declared, yet ambitious, net zero carbon aspirations looking towards the year 2030, are a clear indication that the decision to 'move up a gear' has already been taken.

The Council recognises that the promotion of a robust and practical electric vehicle charging (EVC) network within the area is essential to realising not just our own ambitions, but also those of the wider public residing within our boundaries and the extensive business community therein.

Ownership of electric vehicles (EVs) has grown steadily in recent years and is expected to grow more significantly as technology improves and consequently the affordability of such vehicles grows. The inevitable transition from petrol and diesel vehicles to EVs will dramatically reduce exhaust emissions and will be advantageous in our undertaking to improve air quality and to reduce the harmful effects of air pollutants on public health.

The wider EV transformation has the potential to stimulate growth in both the local and wider economy by providing openings for new markets and innovation, and a properly planned charging infrastructure will be essential in helping to realise the full potential of such opportunities.

However, we do recognise that there are barriers to the convenient use of electric vehicles, both existing and potential, and that the current absence of a comprehensive charging network means that people have a lack of confidence in how far they can travel using EVs. Whilst recognising that there is an opportunity for a proportion of EV charging to be done overnight at home, we also understand that not all households have access to off-street parking, which is the foremost problem in a substantial part of our geographical area.

The Council also recognises that ownership of an electric vehicle may not be attainable, or even desirable, for everyone, which creates challenges around how those who rely on other means of transport might benefit from the technology. For example, public transport such as buses and taxies, modes of transport that will also need to be fully supported by the future EVC infrastructure.

Constantly advancing technology in recent years has seen the development of a number of alternatively fuelled vehicles such as hydrogen fuel cells, compressed natural gas and other such innovations. At present this EVC Strategy focuses purely on plug-in EV's. This reflects the increase in EV ownership within the area, however the Council recognises that over time it may be necessary to address the plausible challenge of other fuel types and technologies, and we will continue to observe developments with a keen interest.

This EVC Strategy will outline several key principles that will empower the Council to advise, help and support individuals, or parties, that wish to make the switch from conventional vehicles to EVs. The Council intends to encourage EV uptake amongst residents, including those without access to off-street parking.

It is the intention, through this EVC Strategy and the subsequent Implementation Plan, to provide a source of information to help coordinate and integrate an approach across the County Borough and to lay the foundations to ensure that the Council, or associated groups, are able to apply for funding to support a publicly accessible charging network, when such opportunities become available.

Through careful and considered planning guidance, the Council intends to encourage developers to build EV charging into new developments, stimulate the expansion of a safe and sustainable on-street charging infrastructure and facilitate the provision of public charge points on council land, whilst working with collaborative groups/bodies to support and encourage further provision.

In addition to private vehicles, the strategy will also support EV uptake among car clubs, taxis, buses, community transport operators, as well as within our own fleet of council vehicles, wherever practicable.

The Council's aspiration is for this EVC Strategy to complement the evolution of EV charging provision in the private sector and for the complementary 'Implementation Plan' to assist in helping to fill any foreseeable gaps in existing and future network provision.

The overall aim of both documents, this EVC Strategy and the supporting EVC Implementation Plan will be to provide surety to existing EV users and to encourage the uptake of electric vehicles amongst potential new users, thus ultimately benefiting air quality as part of the Council's wider sustainable transport approach.

Purpose and Aim of this Strategy

The **purpose** of this Strategy is to pull together into one document all of the work that is taking place at a national, regional, and local level in respect of delivering an ambitious infrastructure for charging electric vehicles for Rhondda Cynon Taf.

The Strategy **aims** to set out why action is needed and identify clear outcomes, along with who will deliver them, to coordinate a Rhondda Cynon Taf County Borough wide approach, to promote and encourage the development of a robust and practical electric vehicle charging (EVC) network in the short, medium, and long term, whilst fostering a transition from petrol and diesel vehicles to electric vehicles (EVs) as part of the Council's wider sustainable transport goals.

Implementation of this Strategy

The Council will follow up the publication of this overarching EVC Strategy with an Implementation Plan.

The purpose of the Plan will be to inform all readers of the Strategy on how to proceed with any aspirations or intentions that they may have regarding the development and installation of EVC infrastructure works.

The Strategy broadly informs whilst setting out clear ambitions, however the Implementation Plan will provide clear guidance to inform all parties on the requirements for the development of electric vehicle charging infrastructure across the County Borough, including:

- The Council's Fleet
- Businesses
- Community Groups
- The Public

The Plan will provide advice on which route to take in given circumstances and will act as a "road map" to inform everyone, and to ensure that individuals and/or organisations know who they need to consult with, when and how.

The Plan will also provide practical guidance to advise on best practice and signpost individuals and organisations towards the necessary and relevant legislation, any known sources of funding and any other relevant information that is available such as estimated price ranges for different charging devices.

Introduction

Policy Background

Climate Change Policy

Rhondda Cynon Taff County Borough Council (RCTCBC) has recognised a need to act on the Climate Change crisis and has committed to becoming a Net Zero Local Authority by the target date of 2030. RCTCBC's Climate Change Strategy 2021 - 2025 proposes that by 2030 the Local Authority will achieve carbon neutral status in contribution to the All-Wales target of Net Zero by 2050. RCTCBC has recognised that fundamental changes are needed and in 2019, the Council established a Climate Change Cabinet Steering Group. This sub-committee of the Council's Cabinet is charged with developing the Council's response to the Climate Change Agenda, to inform the development of the Council's Climate Change Strategy and ultimately support Cabinet in achieving RCTCBC's Net Zero goal of 2030.

Transport Policy

In January 2020, RCTCBC published Transportation - How do we Reduce our Carbon Emissions, which identified that the transport sector accounts for 14% of Wales' carbon emissions and has a considerable role to play in addressing the climate emergency.

The Welsh Government's Prosperity for All: A Low Carbon Wales published March 2019, identifies how Wales aims to meet emission reduction targets and covers proposals to address the increase in electric vehicle use and subsequent roll out of required charging infrastructure. The report establishes Wales' commitment to:

> *"a shift towards active travel and a low carbon public transport system which is accessible to all and contributes to liveable and sustainable communities. This is backed by a bold ambition for a zero emissions bus, taxi, and private hire vehicle fleet by 2028."*

In March 2021, Welsh Government consulted on a new Wales Transport Strategy, which sets out a long-term vision for the decarbonisation of transport systems, with the stated ambition of the development of a transport system that responds to the climate emergency. Encompassed within this strategy is the facilitation of ultra-low emission vehicles (ULEVs) that benefit the economy, environment, social justice, health and well-being.

Air Quality Policy

Air quality management areas (AQMA) must be declared if the air quality does not meet relevant standards and an Action Plan is prepared to address and improve this. There are currently 16 identified AQMAs across Rhondda Cynon Taf, for breaches of Air Quality Objectives for Nitrogen Dioxide see figure [1].

Figure 1: The 16 identified Air Quality Management Areas (AQMA) across Rhondda Cynon Taff.

Road transport has been identified as a major source of the two most relevant air pollutants to the public: Nitrogen Dioxide and Particulate Matter. As such, lowering the emissions of road transport can have a positive impact on air quality, and in return, public health. In Autumn 2021, the Council are due to publish their Annual Report, providing information regarding statutory processes, up-to-date local monitoring data and the analysis of local air quality.

Electric Vehicle Policy

In November 2020, the UK Government announced the phase-out of new petrol and diesel cars and vans from 2030. Furthermore, in December 2020, the Climate Change Committee published The Path to a Net Zero Wales, which recommended a set of targets with the aim of becoming a Net Zero Wales by 2050. The report addressed the requirement for an increased roll out of low carbon solutions for new vehicles by 2030 and HGVs by 2050.

In June 2021, the Welsh Government published its Programme for Government, which proposes to build a stronger, greener economy as progress is made towards decarbonisation. Part of this objective includes a commitment to achieve 45% of all travel by sustainable modes by 2040 and promises to progress work to achieve zero- emissions bus and taxi vehicle fleets by 2028.

In addition, the Welsh Government has also published the Electric Vehicle (EV) Charging Strategy for Wales. The strategy, shaped by the Well- being of Future Generations (Wales) Act 2015, provides a framework for the consideration of how electric vehicle charging infrastructure needs in Wales should be met. The strategy proposes that by 2025:

"all users of electric cars and vans in Wales are confident that they can access electric vehicle charging infrastructure when and where they need it."

The WG strategy aims to provide a common framework for Local Authority understanding and collaboration, and proposes a Welsh Government investment of £30 million over the next 5 years to deliver the aims set out within the strategy. The strategy will be accompanied by an Action Plan due to be published late 2021, which will be used to track and manage delivery which will be reviewed annually.

RCTCBC's Climate Change Strategy recognises that an electrification of vehicles is needed to address decarbonisation of the Council's transport sector. In March 2021, an Electric Vehicle Charging Infrastructure: Driving Change report was presented to the Climate Change Cabinet Steering Group. The report outlined that if growth in ULEV ownership continues in alignment with UK trends, then forecasts indicate that there could be more than 900 ULEVs in RCT by the early 2020s, and over 8,000 by 2030.

As such, an extensive scale up of Electric Vehicle (EV) Charging Infrastructure across the County Borough is needed in order to meet public demand and accelerate Council-wide decarbonisation. In order to address this growth in demand and provide guidance to the rollout of a charging network across the County Borough, the report recommended the development of an EV Charging Infrastructure Strategy and Implementation Plan to sit alongside a Transport Strategy and future Planning policies.

Existing Provision

The latest Department for Transport figures indicate that the number of registered ULEVs across Rhondda Cynon Taf is on the rise. Table 1 below illustrates how ULEV ownership has more than doubled between 2018 and 2020, with 153 registered at the end of Quarter 4 in 2018 rising to 363 vehicles registered at the end of Quarter 1 in 2021.

Table 1: Number of Ultra Low Emission Vehicles (ULEV), Battery Electric Vehicles (BEV) and Plug-In Hybrid Electric Vehicles (PHEV) licensed at the end of quarter 4 for 2018, 2019 and 2020, and Q1 2021. *(Source: Department for Transport).*

		2018 Q4	2019 Q4	2020 Q4	2021 Q1
ULEV	Rhondda Cynon Taf	153	201	329	363
	Wales	3,951	5,315	8,163	9,349
	United Kingdom	198,258	269,376	431,639	488,078
BEV	Rhondda Cynon Taf	89	113	184	209
	Wales	1,827	2,696	4,641	5,389
	United Kingdom	67,075	105,960	216,379	249,932
PHEV	Rhondda Cynon Taf	56	83	139	148
	Wales	1,840	2,295	3,197	3,614
	United Kingdom	112,967	142,788	194,194	216,740

Note: The figures referred to in the table above include for all registered vehicles – both private and business.

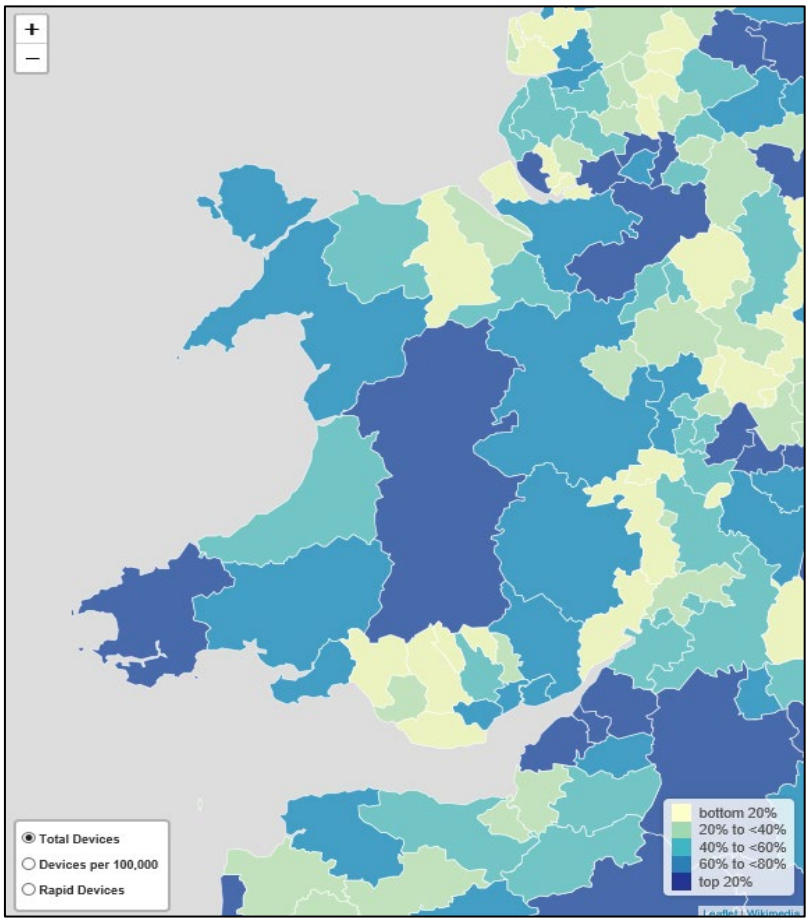

Figure 2: The total number of public electric vehicle charging devices in Wales. 'Total devices' represent publicly available charging devices at all speeds. *(Source: Department for Transport).*

As of July 2021, there are currently a total of 14 publicly available EV charging devices (of all speeds) located in Rhondda Cynon Taf, which equates to 5.8 charging devices per 100,000 population. Furthermore, as of July 2021, there was 1 rapid charging device in RCT, but in comparison, there was a total of 851 publicly available EV charging devices (of all speeds) in Wales, of which 114 are rapid chargers. Figure 2 illustrates that RCT is currently placed in the bottom 20% for total charging devices in Wales. Further information is available in Appendix II.

Expected Demand

Demand across the UK is predicted to rise rapidly with one million ULEVs projected by the early 2020s and as many as nine million by 2030. Based on this, and assuming the trend for ULEV ownership in Rhondda Cynon Taf continues in alignment with the UK generally, there could be over 900 ULEVs registered in Rhondda Cynon Taf by the early 2020s and over 8,000 by 2030. As ownership figures continue to rise, Rhondda Cynon Taf will see a corresponding demand for charging points.

Based on quantitative modelling of rising demand in ULEV ownership across Wales, the Electric Vehicle Charging Strategy for Wales provides a demand forecast for the number of charge points required by 2025 and 2030, as shown in figure 3.

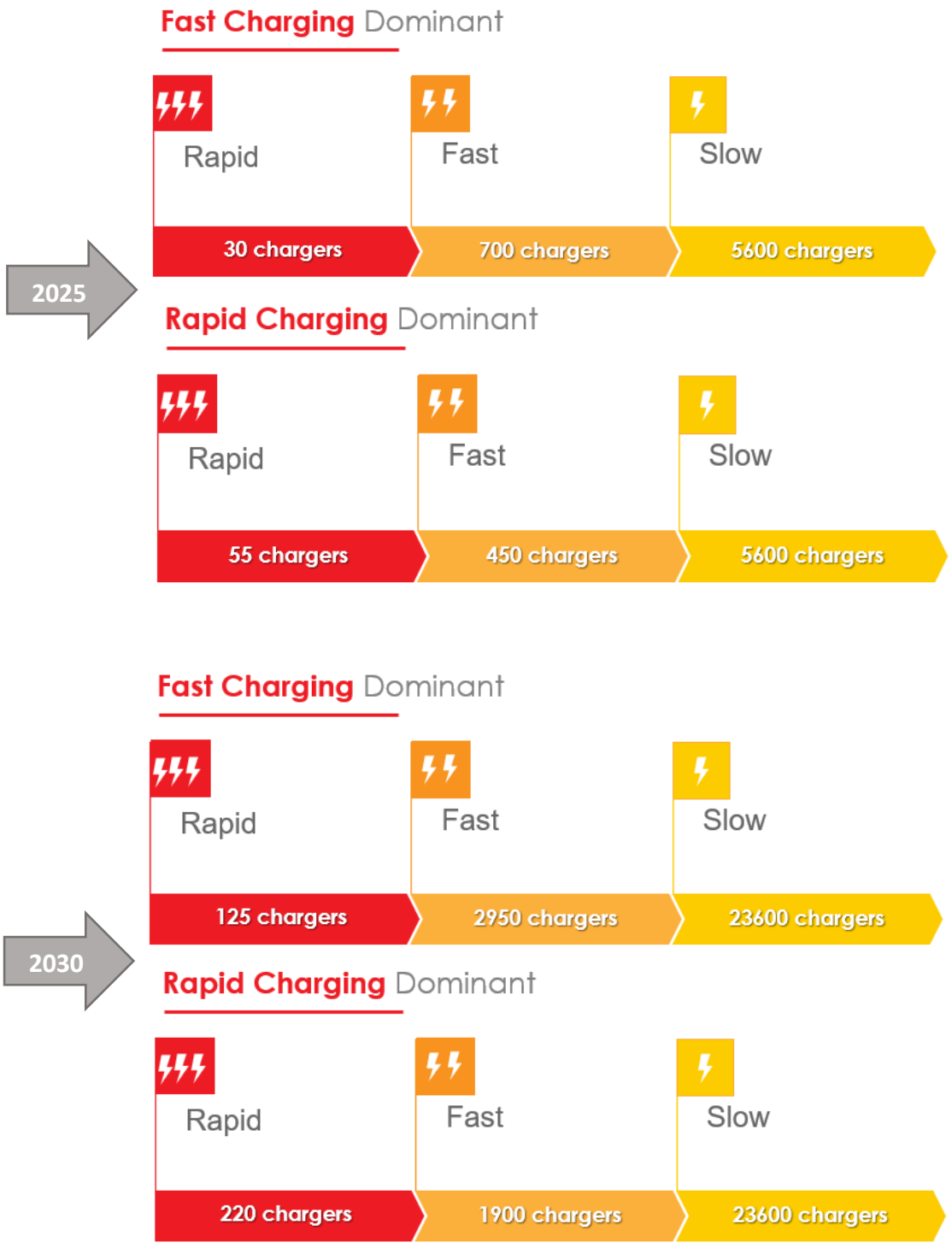

Figure 3: The forecast number of Rapid Fast and Slow chargers required by 2025 and 2030 in Rhondda Cynon Taff, based on both a fast charger dominant structure and a rapid charger dominant structure. *(Source: Electric Vehicle Charging Strategy for Wales*

By 2025, forecasts indicate a need for a total of 6,330 chargers in Rhondda Cynon Taf, and by 2030, a total of 26,675 chargers, based on a fast charger dominant structure shown in figure 3. Alternatively, forecasts indicate that a rapid charging dominant structure would require fewer charging points, predicting a demand for a total of 6,105 chargers by 2025 and 25,720

chargers by 2030. The predicted need for charging across Wales provides an indication of the growing scale of demand.

Public Consultation

Whilst the use of electric vehicles is increasing year on year, an assessment of the future demand for EV charging infrastructure is paramount in supporting this growth. As such, an online public consultation, called *Let's Talk EV Charging*, was undertaken by RCTCBC to obtain the views of potential EV users to help gauge potential take-up, both now and in the future, in order to advise on the suitability of locations and type of charge points to consider.

The consultation was launched in mid- April and the report data was extracted at the end of May 2021. In total, 325 online survey responses were received, together with 122 poll responses and 222 locations were identified as potential electric car charging points within RCT. Figure 4 provides a summary of the Let's Talk EV Charging – Final Report June 2021 consultation report:

Dewch i siarad RhCT
Let's talk RCT

Future Development of EV Charging

June 2021

325
Online survey responses

122
Poll responses received

222
Identified potential EV charging points

Dates

Start Date
19th April 2021

End Date
31st May 2021

Summary

This section provides a summary of the main findings from the Let's Talk Electric Vehicle Charging consultation on the future development of electric vehicle charging points across Rhondda Cynon Taf.

Public EV Charging Points

38% of respondents said the installation of a public electric vehicle charging points near their residential area would 'definitely' increase the likelihood of them owning an electric vehicle with the following main themes occurring in their comments:

- Confidence to charge across the County Borough
- Confidence in using rapid charge
- Overcoming barrier of not having the ability to charge at home

36% respondents stated that the installation of public EV CP would 'possibly' or 'maybe' increase the likelihood of purchasing EV with the following main themes occurring in their comments:

- Affordable costs to charge
- Convenient and easy to use
- Personal and locational security

Key Findings

95% 'strongly agree' or 'agree' that a lack of accessible charging points is a barrier to buying an EV.

83% of respondents or someone in their household do not own an EV.

80% of respondents own 2 vehicles or less.

42% have access to on street parking only.

55% have access to private off-street parking.

56% of those who do not own EV said they were 'very likely' or 'likely' to consider purchasing one.

Figure 4: Summary of Let's Talk RCT: Future Development of EV Charging Consultation responses.

Developing a Public Charge Point Network

Planning

New Building Planning Requirements

In February 2021, the Welsh Government published the new nationwide spatial planning policy document for Wales entitled "Future Wales, The National Plan 2040". Figure 5 illustrates the key target dates for the development of a public charge point network.

Future Wales is a plan promoting development that enhances well-being and quality of life. It is a framework to help focus on achieving big ambitions when developing and regenerating cities, towns, and villages. Future Wales empowers plans at regional and local scales to identify schemes and projects that benefit communities and help to achieve national ambitions.

As such, Future Wales seeks to guide the production of the new Local Development Plans (LDP) which themselves guide development throughout the Welsh Planning Authority areas. The LDP contains details of new housing, employment, retail sites, and policies both national and local, which are used to determine planning applications.

The Rhondda Cynon Taf Local Development Plan 2006-2021 is due to be replaced by a new Revised Local Development Plan 2020-2030. The process of building the revised LDP has begun including the broad stakeholder involvement of the general public, community groups, commercial developers, public bodies and service providers.

The revised LDP will cover a breadth of development areas and address Rhondda Cynon Taf specific matters. It is expected that these policies and site allocations would be associated with housing, commercial and industrial developments, alongside tourism, transport, minerals, and waste proposals (amongst others). The Revised LDP will also seek to protect the unique built and natural assets of the County Borough, such as our most important buildings and structures, landscapes, ecology and our greenspaces; all incorporating and encouraging a more sustainable and carbon considerate way of living.

In relation to Electric Vehicle Charging Infrastructure, Policy 12 of Future Wales states:

> *"Where car parking is provided for new non-residential development, planning authorities should seek a minimum of 10% of car parking spaces to have electric vehicle charging points."*

Further;

> *"When requiring electric vehicle charging points, planning authorities should ensure the level, location and type of provision is appropriate to the scheme and local circumstances. It may be appropriate for some of the provision to be 'passive', with the necessary underlying infrastructure provided to enable installation and activation in the future. Planning authorities should take a strategic approach to electric vehicle charging in their area and, where appropriate, develop policies in their development plan and specific local requirements. The provision of electric vehicle charging infrastructure points should be planned as part of the overall design of a development."*

This guidance supports the Electric Vehicle Charging Strategy for Wales 2021, which has an overarching vision for charging in Wales that “by 2025, all users of electric cars and vans in Wales are confident that they can access electric vehicle charging infrastructure when and where they need it”.

This Strategy also confirms that the provision of the Energy Performance of Buildings Directive will be transposed into the Welsh Buildings Code, such that all new homes with off-street parking provision will be required to be EV charging ready. Similarly, all new or substantially refurbished non-domestic buildings with dedicated parking will be required to have at least 10% of parking spaces allocated for EV charging.

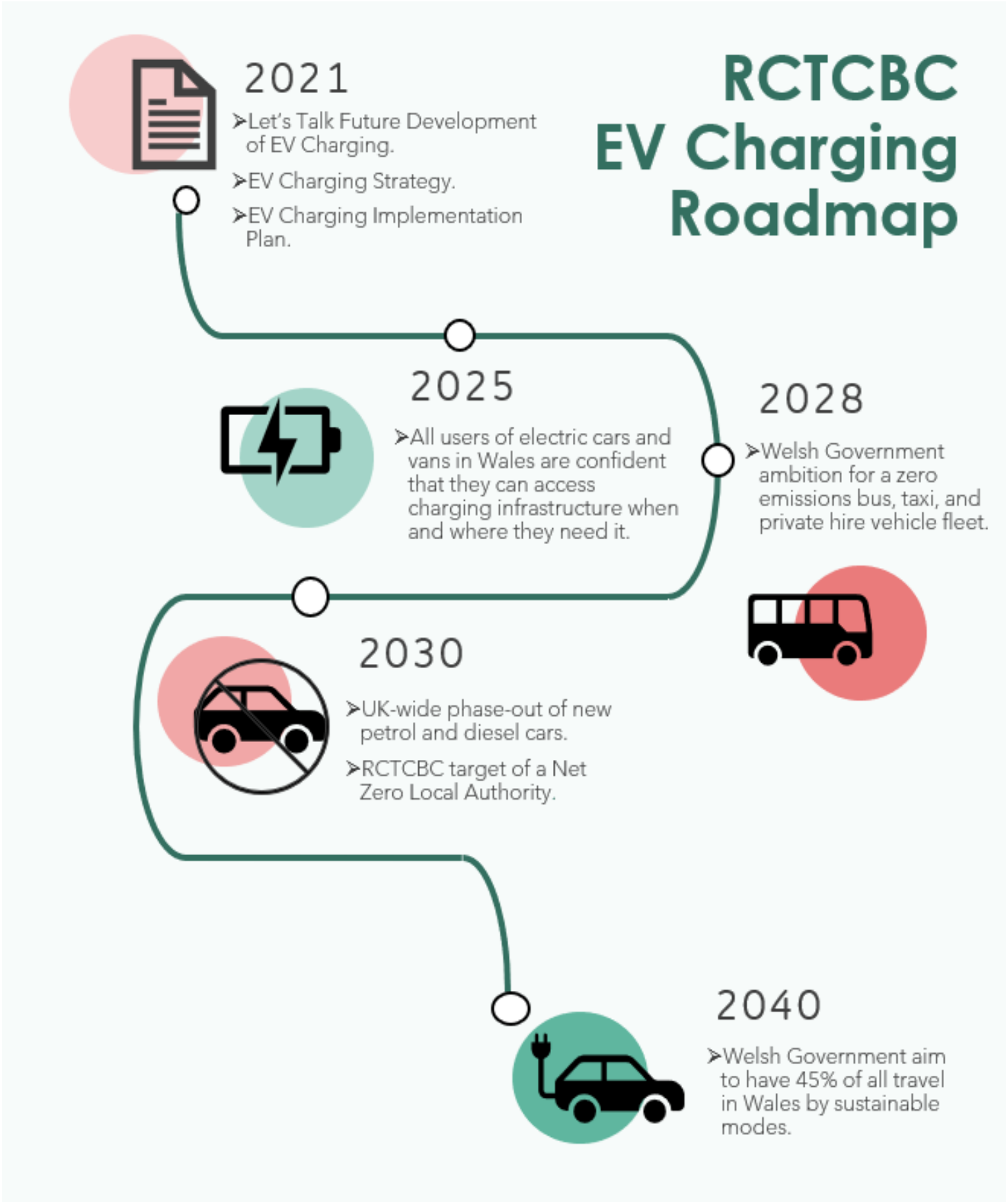

Figure 5: A summary of the key target dates regarding Electric Vehicle (EV) charging.

Planning Locations

The Consultation Report identified that 55% of respondents to the survey have access to their own private off-street parking. However, 42% of respondents have access to on-street parking only. Currently, 68% of respondents use a home charging point for their electric vehicle, typically parked on private land, including driveways and garages, where owners can charge their vehicles at their leisure. As EV ownership increases, there will be a continuing demand for alternative charging points, both for visitors and for those residents who do not have access to private off-street parking when circumstances dictate that on-street facilities cannot be safely provided adjacent to their residence. This highlights the importance in developing a charging network that considers both on and off-street charging options.

In considering where to install EV charging units, several factors must be taken into consideration, including, but not exclusively: Planning regulations, suitability of the local electrical distribution network, accessibility to residents and visitors, existing or projected demand and security and safety. Regardless of which sites are chosen for future EV charging units, the developer must first check whether the new installation requires planning permission or not.

Most typical EV charging units can be installed without planning permission, i.e. they are a "Permitted Development", providing they are sited within an area already lawfully used for off-street parking. However, to be classed as such, the development must comply with the relevant criteria set out in Schedule 2, Part 2, Classes D or E of the Town and Country Planning (General Permitted Development) (Amendment) (Wales) Order 2019.

The criteria set out in the above Order identifies physical parameters regarding the size, positioning and number of units that can be installed without having to apply for planning permission. In summary, Permitted Development would be:

- The installation of a wall mounted EV charging unit within an area already lawfully used for off-street parking, (private drive or car park), if the outlet and casing would not exceed 0.2 cubic metres in size, face onto and be within 2 metres of a highway, or be within a site designated as a scheduled monument.

- The installation of an upstand with an EV charging unit within an area already lawfully used for off-street parking, (private drive or car park), providing the upstand and outlet would not exceed 1.6 metres in height from the level of the surface used for the parking of vehicles, be within 2 metres of a highway, be within a site designated as a scheduled monument, or result in more than one upstand being provided for each parking space.

In addition, a Local Authority can erect EV charging units and any associated infrastructure on land belonging to or maintained by them, e.g. pavements, etc., providing the equipment does not exceed 4 metres in height, or 200 cubic metres in capacity.

Should the proposed installation not comply with the relevant criteria identified above, planning permission would be required.

The Permitted Development criteria set out above is also relevant to installations in designated Conservation Areas, or within the curtilage of a Listed Building. Any installation should be as sympathetic to its surroundings as possible.

However, it advised that any installation within the curtilage of a Listed Building would require separate Listed Building Consent and that any installation within a designated Conservation Area that would involve demolition, either partial or complete of any unlisted structures, would require separate Conservation Area Consent.

Local Electricity Network

In some areas the capacity of the electrical supply network is likely to be a limiting factor, regarding the existing cable infrastructure and its ability to cater for the installation new of EV chargers. Areas of concern will need to be identified at the outset of any project planning process, especially where the intention is to install Rapid or Direct Current charging facilities, as these may not be permitted in certain circumstances.

All new public EV charging installations must have the approval of Western Power Distribution Ltd (WPD), who manage the Electrical Supply Network in South Wales. WPD's role is to ensure that any new EV charging installations can be successfully supported by the local electricity supply network without compromising existing supplies. Where a local network must be upgraded to accommodate new EV units, this can greatly increase the cost and duration of any new EV installation. Western Power Distribution - Connections for Electric Vehicle charge points.

The Council will need to consider the impact of increasing the provision of charge point infrastructure on the local electricity network. Local enhancements to the WPD network and installation of mini substations will add additional costs to charge point installation. Close dialogue needs to be maintained with Western Power Distribution, our local Distribution Network Operator (DNO), to ensure that the true costs in terms of time and money of any proposed EV charger location, are factored into the decision-making process. These discussions will help to give insight to the suitability of locations for charge point installation which will be included by the EVC Implementation Plan.

Security

Adequate security measures will require essential consideration in the rollout of charging infrastructure. The consultation identified that 36% of respondents said the installation of public charging points would "possibly" or "maybe" increase the likelihood of them purchasing an electric vehicle, with security as a common emerging reason for this. Furthermore, 36% of respondents said they would be happy to charge a vehicle in a remote hub / location. Again, one of the main emerging reasons was providing sufficient security measures are in place to ensure the location is a safe place to leave a vehicle.

Personal safety and security are also paramount in the deciding the locations of suitable charge point locations. Consideration should be given to whether the street/car park lighting is adequate, also the installation of CCTV provision at some charge point sites would help in

addressing such concerns. It is also possible that extra bespoke measures may need to be introduced to ensure some locations are safe for the public to use and walk home from.

Parking Enforcement

Parking enforcement will be required to help ensure that public charge point locations, designated for EV use only, are available as often as possible for EVs. The Council's Civil Parking Enforcement team have powers to enforce both off-street parking (in regulated Council car parks) and on-street parking restrictions (which are supported by Traffic Regulation Orders).

It is envisaged that enforcement action may be required to deal with instances of non-EVs parking in designated EVC bays and also those vehicles that overstay time limits for charging, (which may be required to deter such behaviour). The Council will need to consider implementing restricted dwell times on EV bays during certain periods to discourage unfair usage, such as the use of the bay for extended periods, which in turn would prevent other users from accessing the charge point.

Due to the high percentage of terraced housing across the County Borough, the installation of any on-street charging points would require the addition of a marked parking bay reserved solely for the purpose of EV charging. RCT has a high proportion of terraced housing relying on on-street space for personal parking, and generally dedicated on-street residential parking bays, where provided, are orientated parallel to the kerbside and irrespective of designated residential parking zones,. The installation of dedicated EV parking bays could be objected to by non-EV user residents due to the already established high parking pressures, which may lead to neighbourhood conflict where numerous residents are competing for one charging bay, or indeed if the charging bay is used for parking 'traditional' vehicles, thus preventing access to the facility for EV owners.

For on-street parking, a relevant Traffic Regulation Order, (TRO), must be put in place by the Council to enable and support any subsequent civil parking enforcement. Consideration must be given to the additional costs and risk of delay that the TRO process adds to the installation. In addition, as part of the TRO, on-street charging bays will require suitable signage and markings to indicate that such bays are for EV use only and to help prevent longer than necessary occupancy. The Council's subsequent EVC Implementation plan will acknowledge these necessary considerations if and where on-street EV charge points are intended to be installed.

Funding, Deployment and Management

In the process of increasing the provision of additional EV charge points across the County Borough, consideration should be given to how the funding of their installation, management and maintenance will be appropriately resourced. In order to do this, the development of a model that distinguishes the type of ownership and management the Council have over

existing and new charge points is a key requirement of our strategy. Generally, a charge point network will require:

- An owner of the charge point,
- A manager, responsible for the day-to-day running of the charge point, including planned maintenance, reactive repairs and setting costs for charging devices,
- A network operator, responsible for the software system to enable the use of the charge point by customers.

Typically, there are five installation options, or 'models', available in terms of the type of installation, ownership and management of the charge points. Table 2 provides a brief overview of the various options that RCTCBC will have to consider in the roll out of an EV charging network:

Consideration of the most appropriate model option for charge point deployment and back-office management arrangement, i.e., in-house, or the use of a charge point provider to be adopted by RCTCBC is ongoing, with discussions being held to inform the Implementation Plan and deployment and management of a charging network.

Table 2: The various models of charge point infrastructure networks that should be considered.

Option	Owner	Manager	Network Operator	Description
A	RCTCBC	RCTCBC	RCTCBC	High level of investment by the Council but offers the greatest flexibility.
B	RCTCBC	RCTCBC	Supplier	Includes the outright purchasing and maintenance of charge point, with the network run by a supplier with expertise.
C	RCTCBC	Supplier	Supplier	Involves the purchasing of the charge point from a supplier. However, the supplier is employed to manage and maintain the charge points, which reduces flexibility in charge point type, but does provide a point of contact for users.
D	Supplier	Supplier	Supplier	Requires leasing Council land to the supplier for charge point installation. However, this risks the installation of charge points in isolation of public demand and location attractiveness for RCT users. The apparatus may revert to the client on completion of the agreement/contract. Revenue is shared.
E	Private Enterprise			A charge point network developed by commercial providers presents no financial risk to the Council, but risks installation of charge points in isolation of public demand and location attractiveness RCT for users.
F	Hybrid			A Private Enterprise would roll out the majority of the charging points but the complimentary RCT network could 'fill in the gaps' by providing chargers in less attractive locations thus ensuring a high level of equality of provision across the County Borough. This option could be rolled out quickly and would reduce the risk of unequal and perceived to be unfair provision.
G	Community & Social Enterprise			Multiple configurations of ownership and management could be achieved. Funding could be obtained by 'not for personal profit' community groups. There is an option for these community groups to own and/or manage these chargepoints. Alternatively, agreement can be made between the community group and Council enabling the Council to then own and manage these chargepoints. This option would enable greater funding opportunity as community groups can apply for a number of grant schemes.

OZEV Grant Funding Scheme

The Office for Zero Emission Vehicles (OZEV) has recently announced £20 million for the On-Street Residential Charge Point Scheme (ORCS) for the 2021-22 financial year. The scheme offers Local Authorities support to part fund (75%) the capital costs relating to the procurement and installation of on-street EV charge point infrastructure and an associated dedicated parking bay (where required) while the remaining 25% must be secured from other sources. ORCS will provide up to £6,500 per charge point installation, or up to £7,500 per charge point in exceptional circumstances.

UK Government Guidance

In order to determine the role public sector bodies will play in ensuring EV infrastructure is developed to meets the needs of residents, the Local Government Association (LGA) has commissioned Local Partnerships to carry out a research project to identify the role that Councils feel would be most appropriate for them with regards to EV charging, and to identify barriers that prevent them undertaking a more proactive role at the current time. The project's focus is on the charging of private cars and vehicles in residential areas where there is no option for on-street charging (More information here).

The outputs of the study will be used by the LGA to support discussions with Government relating to ongoing funding schemes, such as the ORCS, and provide evidence to define the support required by Local Authorities in increasing the provision of EV infrastructure.

Charge Point Speed and Power Ratings

In addition to the above considerations, the Council will have to consider the fast-paced development of charging solution technology to prevent the installation of charge points that could become quickly outdated. For example, EV batteries are increasing in size, rendering low-power charging supplies less useful beyond the short-term, which may ultimately lead to trickle charging becoming an insufficient charging option for many vehicles.

A summary of the different types of charge points currently available for on street and public use is provided in figures 6 and 7 below:

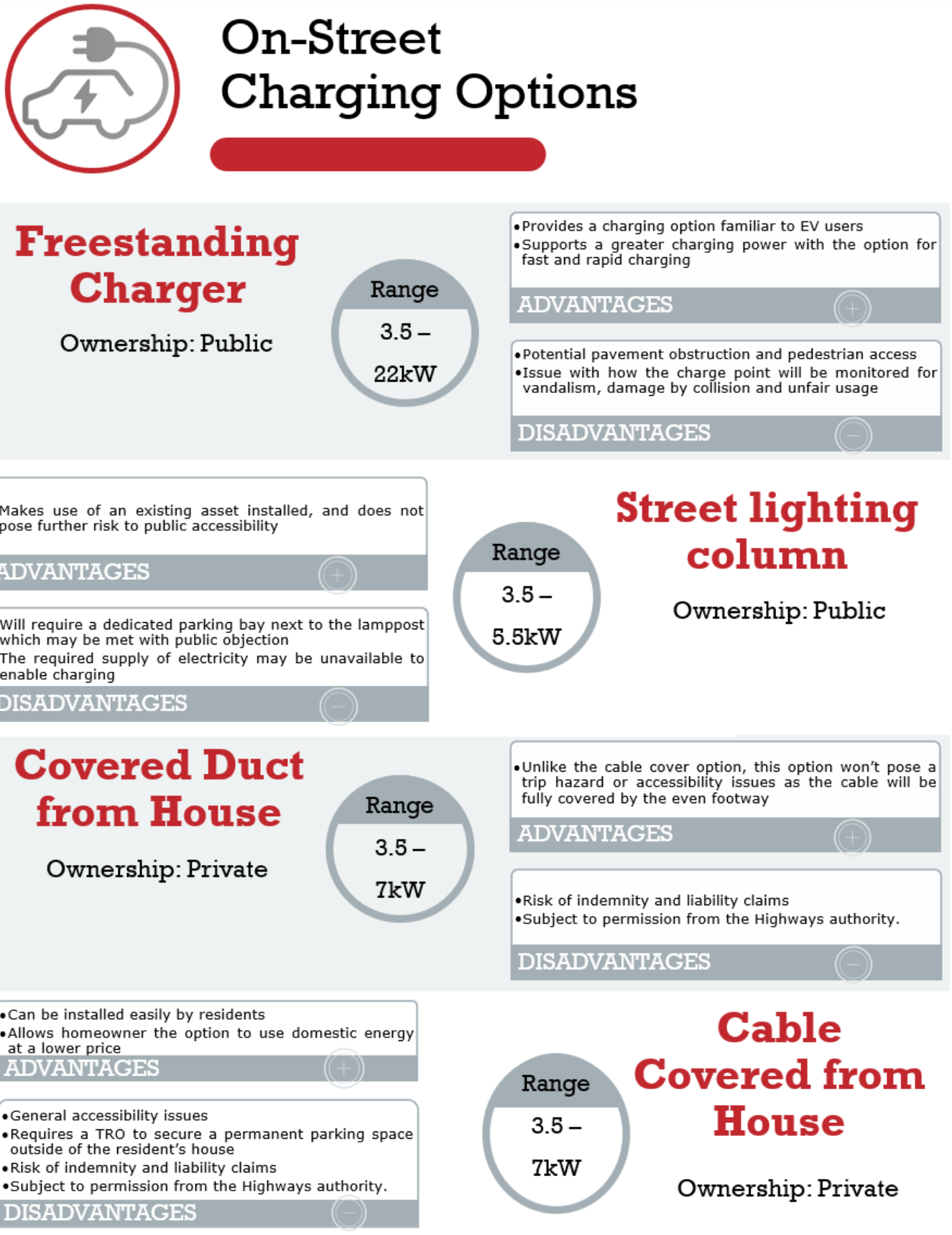

Figure 6: Off-street charge point types.

Important Note: Where supplies are to be derived from private commercial properties or dwellings, design consideration will need to be given to the type of incoming electrical supply and associated earthing arrangements. BS.7671 is quite specific in the requirements for earthing in these areas and any property with a TNC-S (or PME) supply will pose a potential danger to users or passers-by should the incoming neutral be lost or severed. Charging units that automatically disconnect the supply to the vehicle in the event of a neutral fault would be recommended for use in such circumstances, but these come at a far higher cost.

It should be noted that for EV chargers in excess of £7kW, in every case, permission will need to be obtained from Western Power Distribution before installation can commence.

Off-Street Charging Options

Three Pin Plug

Standard three-pin plug that can be connected to any 13 amp socket.

Socketed

An EV charge point that can be connected to by using either Type 1 or Type 2 cable.

Tethered

An EV charge point with a cable attached that has either a Type 1 or Type 2 connector.

CHARGERS

TYPE	RANGE	LOCATIONS
RAPID	43kW plus	On-route short stay destination charging.
FAST	7kW – 22 kW	Car parks, supermarkets, leisure centres and houses with off-street parking.
SLOW	UP TO 3kW	Top-up charging at home, work, and longer-stay destinations.

CHARGING TIMES

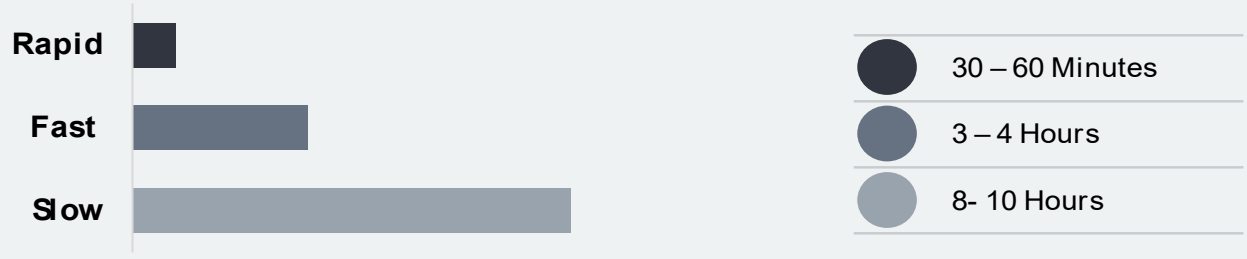

Figure 7 Off-street charge point types (Source: PodPoint).

Important Note: The type of charge point often determines whether a cable is tethered to the unit. Portable charging cables come with different connector options so can be used on untethered units.

Developers will have to consider the suitability of charge points type based on their safety, charging speed, cost, and their appropriate location for installation to closely meet the type of demand for increased EV use across the County Borough.

Destination Charging

Whilst the clear ambition would be to have EV charging facilities in every area of the County Borough, the early roll out of charging units will focus upon so-called “destination sites”. These are sites where people travel to, to access shops, hospitality, cultural and leisure services, and major transport hubs. Thus, the first round of installations will most likely be located in Council car parks, in local shopping areas, and Park and Ride sites.

In addition to any projects being driven by RCTCBC, to develop a charging network, the Council is proactive at a regional level through the Cardiff Capital Region City Deal (CCRCD) and the Cardiff Capital Region Transport Authority (CCRTA).

The CCRTA plan to install, initially, in excess of 30no - 22kW chargers at Council owned public car parks across RCT. This will greatly expand the limited opportunities for residents of electric vehicles to charge their vehicles whilst visiting sites across in RCT and, by extension, across the region as a whole.

The CCRTA is also developing a bid to the OZEV, part of the UK Government, to expand this programme further, with match funding from the City Deal, which could provide up to £100,000 per Local Authority for charging infrastructure.

Many Supermarkets, and Tourism and Cultural attractions are installing EV charging points for their customers and visitors to use. RCT Council will engage with private sector “Destination Sites” to encourage them to provide similar facilities for their customers, whilst also giving prime consideration to the development of EV charge points within key target areas as determined by the Council and its Elected Members.

Residential Charging

The wide range of housing types within Rhondda Cynon Taf presents several challenges to the roll out of residential EV charging. For residential properties with their own private off-street parking, the installation of a charging unit is straightforward and will in most circumstances result in lower charging costs. Indeed, all new residential properties with off-street parking will be required to be “EV Ready” under new Welsh Government planning guidance.

Rhondda Cynon Taf, like all South Wales Valleys areas, has a large proportion of terraced residential houses. Local Authorities across the UK are trialling a variety of different options for on-street EV charging in areas with high levels of terraced housing, including designated charging bays, local community car parks with EV charging and street lighting adapted to provide EV charging. The Council are assessing all options going forward in order to provide a sustainable solution to facilitate accessible EV charging.

Workplace Charging

As the name would suggest, workplace charging is the provision of EV charging units in non-residential car parks, owned and operated by private businesses or public sector organisations. With the sale of new fossil fuelled cars and vans coming to an end in 2030,

many companies and organisations are debating how to respond to this deadline and are beginning to develop proposals to "electrify" their vehicle fleet. The presence of workplace charging facilities also provides the opportunity for employees and visitors to use these units, subject to the agreement of the business or organisation concerned.

The UK Government is supporting the roll out of workplace charging by subsidising the cost of installing EV charging units through the Workplace Charging Scheme. (Workplace Charging Scheme: guidance for applicants, charge point installers and manufacturers - GOV.UK (www.gov.uk))

The Welsh Government's Future Wales Planning Policy Plan 2040 also sets out that all new or substantially refurbished non-domestic buildings with dedicated parking will be required to have at least 10% of parking spaces allocated for EV charging.

The Council will investigate and promote the expansion of its EV charging facilities, both for its own Fleet vehicles and intended staff use and where appropriate, for visitors and users of the Authority's Leisure and Cultural facilities.

Other Electric Vehicles

Taxis

The Council is currently working with the CCRCD and the CCRTA on a Taxi Strategy for South East Wales to convert all taxis to EV by the Welsh Government target date of 2028. Following successfully securing £1.3M of Welsh Government funding during 2020/21, a contract has been let to establish a charging network for taxis across the region, together with a scheme to procure a fleet of wheelchair accessible electric taxis that can be leased to operators on a "try before you buy" basis. Table 5 below provides a breakdown of the ULEV transformation fund grants awarded to the Cardiff City Region in the year 2020-2021. Other initiatives to encourage taxi operators to switch to an electric vehicle fleet will also be rolled out, including incentivisation schemes and webinars to provide information and support towards the transition to electric vehicles.

Table 3: Breakdown of the ULEV transformation fund grant awarded to the Cardiff City Region in the year 2020-2021. (Source: Welsh Government).

Scheme	Amount
Taxi ULEV infrastructure	£ 1,040,000
Bus ULEV infrastructure	£ 100,000
Transport Hub ULEV infrastructure WelTAG 2/3	£ 100,000
EV roadshow with drive and ride opportunities	£ 56,000

Buses

There are a number commercially available electric buses in the UK and some trials are underway, predominantly in urban areas. These vehicles rely upon being charged overnight in their Depots and presently must return to Depot to re-charge. The Council does not operate any public service buses, but in the future will need to work with local bus operators, to

explore the potential of installing additional electric bus charging points in our principal bus stations, should the need arise.

In relation to school transport, the South-East Wales Regional Transport Authority (RTA) have commissioned Cenex to undertake a study on the transition towards an EV bus fleet. Barriers towards this transition have been identified such as the affordability and deliverability due the age of current fleet, and their retrospective large capital cost to replace.

Trials are also underway of Hydrogen fuelled buses in the UK, which are proving to be better suited for longer journeys in urban and rural areas. Another advantage is that hydrogen fuel can be replenished in minutes at a refuelling station, although the number of re-fuelling sites is very limited at present. In the future, hydrogen fuelled buses may prove to be a viable alternative option for regions of the UK, like the South Wales Valleys, but at present both cost and availability remain substantial barriers that need to be overcome.

Car Clubs

Car Clubs operate to provide drivers with a vehicle for short term hire, typically for a couple of hours up to a maximum of 24 hours. These clubs are particularly located in urban areas, where drivers may not want the expense of owning a vehicle but will need access to one on an infrequent basis. Many clubs are now switching to electric vehicles as their fossil fuelled vehicles are replaced.

The Council will explore the potential of engaging with Car Club operators to set up a scheme in the County Borough in the future. The potential implementation of such schemes will have positive socio-economic benefits, as it will increase access to electric vehicles for those that cannot commit to the expense of owning an electric vehicle. The Council could also consider the use of such Car Clubs amongst staff.

E-Motorcycles / E-mopeds

Road legal E-Motorcycles and E-Mopeds are becoming increasingly popular for commuting and as light delivery vehicles. They can all be charged using a standard 3 pin plug and many have the added advantage of removable batteries, enabling a fully charged battery to be inserted whilst the flat battery is put on charge.

Many E-Motorcycles and Mopeds can also be charged at public charging stations, although they are restricted to using Slow (3 – 7 kW) units.

E-Bicycles / Mobility Scooters

E-Bicycles are popular vehicles for commuting and for leisure activities. Due to the battery sizes, they can only be recharged using a standard 3-pin socket and cannot use the public charging stations. Most E-Bicycle batteries are removable and so can be swapped for a fully charged battery, if available.

Consideration will need to be given by planners and developers to the provision of "Destination Charging" for both these modes of transport, together with those immediately above. One option could be to provide indoor public charging facilities for the batteries only, (with bikes/scooters to be parked up and secured as normal), within publicly accessible buildings or sites, (e.g. public libraries or parks buildings).

Expanding the Council Electric Vehicle Network

Fleet Vehicles

At present, the Council's fleet is predominantly diesel based. However, the Council have been trialling Hybrid and EV vehicle options, as well as alternative fuel options, with the intention of moving towards the use of more sustainable forms of fuel. The Council are in the process of formally evaluating its fleet composition with the aim of identifying the necessary measures required to transition to a low emission vehicle fleet. This is being conducted in conjunction with the Welsh Government ULEV project, for which data gathering commenced in December 2020. Direct EV charger requirements to accommodate the changes to fleet are also being considered by the project..

The resource for this study is largely provided by Welsh Government, (after RCT Council successfully bid for Transition support from Welsh Government), and when completed, the report will provide information on the various aspects of road transport emissions and the potential actions to move the area towards the overall Net Zero ambition.

Procurement

In 2017, the Welsh Government set the ambition of achieving a net zero public sector by 2030. The Welsh Government published the document "Prosperity for All: A Low Carbon Wales" in March 2019, which laid out a collection of policies and proposals to help meet carbon budget and emission reduction targets.

In May 2021, the Welsh Government published the Public Sector Net Zero Reporting Guide, which is a guide for the public sector in Wales to estimate their net carbon footprint including both direct and indirect emissions, including procurement. It is important to ensure that all future tenders regarding EV and EV charging infrastructure is completed in a way that will help reduce the Council's footprint.

It is also important to ensure that the development of the EV charging infrastructure network is congruous with the procurement of an EV fleet. The success of the transition from petrol and diesel vehicles to electric vehicles will be subject to how effective and accessible the EV charging infrastructure will be for all EV drivers.

Staff and Visitor EV Charging

The provision of EV charging facilities by both private and public sector organisations for the use of visitors and / or staff will provide an appreciable contribution to the EV charging network in the future.

However, these EV charge points are normally not available to the public, nor are they available 24/7. Many Supermarket operators have installed free EV charging for their customers (on a time limited basis), with some now also offering rapid charging for a small fee. Chargers can also be found at some tourist attractions.

The Council has recently installed an EV charging unit at a Sports Centre for the use of visitors, who must request access from the Sports Centre Reception to activate the unit. Users of this charging facility will pay a small zero-profit hourly-fee for the electricity they use. This unit, when operational, will be available during opening hours of the Sports Centre.

Many recently constructed schools and all new future schools will be required to provide EV charging facilities. These will be solely for the use of school visitors, staff and where available, school vehicles e.g., Minibuses. They will not be available for the public to use.

The Council is surveying its other owned and operated facilities to develop an ongoing programme of similar EV charging installations across its sites.

Impact Assessments

Equalities

The need for a substantial increase in the number of slow, fast and rapid charging devices available across the County Borough has been identified. Promoting equality of access to charging is therefore paramount to this strategy.

Under the Equality Act 2010, RCTCBC has a duty to make decisions with due regard to the need to:

- Eliminate unlawful discrimination
- Advance equal opportunity
- Foster good relations on the basis of protected characteristics

As such, an equality assessment has been undertaken to ensure the Council is making informed, effective and fair decisions whilst being in compliance with relevant legislation such as the aforementioned Equality Act 2010.

Furthermore, the Well-being of Future Generations Act (WBFGA) requires public bodies in Wales to think about the long-term impact of their decisions, to work better with people, communities, and each other and to prevent persistent problems such as poverty, health inequalities and climate change. To achieve this, the Act puts in place seven well-being goals which public bodies must work to achieve, as illustrated by figure 8 below.

A more equal Wales is one of the well-being goals which ensures that the Council works towards a society that enables people to fulfil their potential no matter background or circumstances. This strategy will emphasise how the Council aims to create a more equal society with focus on disability equality and socio-economic equality. The Council has undertaken Impact Assessments detailing how this strategy will deliver on the well-being goals set out in WBFGA.

Figure 8: The Well-being of Future Generations Act 2015 Well-being Goals.

Enabling Equality

The Council is committed to removing the barriers that disabled people face in society, including those that prevent people from accessing Council services. The UK Government's Automated and Electric Vehicles Act details no specific regulations or definitions promoting access for disabled people. In addition, there are currently no national or international design standards both for the charging units themselves, nor the installation layout to ensure its accessibility to all EV drivers. In most cases, EV drivers with a disability do not have access to charging units away from their own home. A study by the charity Motability and RiDC on the opinions of disabled electric vehicle drivers found that charging infrastructure may not be accessible for a large proportion of disabled people, and by 2035 it is estimated that there will be 2.7million drivers with disabilities, with approximately 1.4million being mainly reliant on public charging facilities.

In light of this, work is being undertaken to make EV charging infrastructure in the UK accessible for people living with disabilities. A set of accessibility standards for EV charge points across the country will be developed in partnership with Mobility, the UK Government and the British Standards Institute (BSI). These standards are expected to be published by summer 2022 and will provide guidance on how to make charge points more accessible.

Despite the lack of published guidance to date, this strategy will advocate for disability and accessibility equality in the roll out of EV charge points, in line with the Council's Diversity and Equality Policy. Working with the Council's Disability Forum, the Implementation Plan will aim to address identified barriers and set uniform standards regarding kerb height, adequate spacing and charge points being of a height suitable for wheelchair users.

Socio- Economic Equality

The official measure of relative deprivation for small areas across Wales is provided by the Welsh Index of Multiple Deprivation (WIMD). It provides insight into those communities across Wales with the highest levels of deprivation. Deprivation refers to the lack of access to opportunities and resources in our society. Figure 9 below provides an overview of the overall deprivation in Wales. According to the WIMD data, RCT contains some of the most deprived areas in Wales.

The Council strives to work towards achieving the well-being goal of a more equal Wales and to abide by the Equality Act 2010 by increasing access to opportunities and resources, in this case by promoting access to an affordable EV charging infrastructure. The Council aims to achieve this by ensuring equal access to charging facilities, no matter background or circumstance. The Strategy will aim to help alleviate poverty and deprivation, improve access to employment opportunities, improve access to skills and to develop improved infrastructure and healthier communities. To ensure this, the Council will ensure that charging infrastructure will be designed inclusively and will be priced fairly, to increase both physical and financial accessibility.

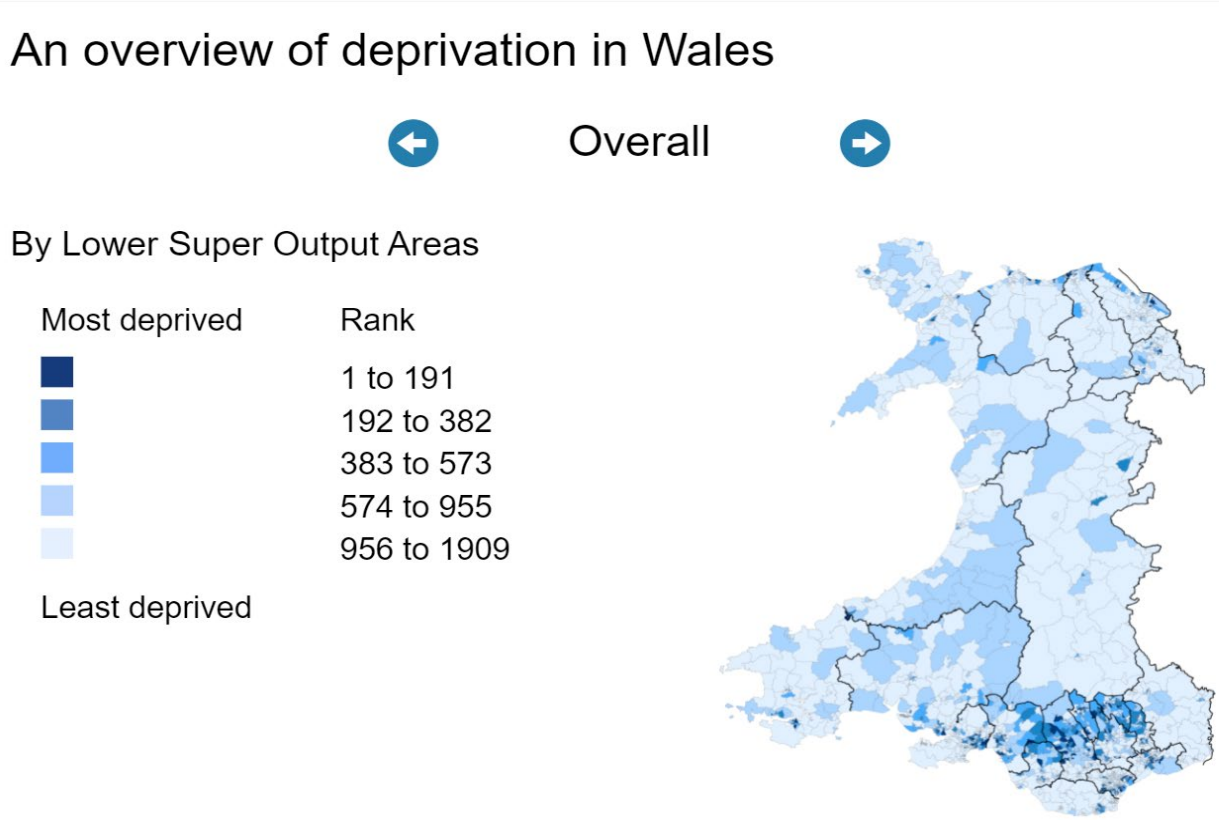

Figure 9: The overall overview of deprivation in Wales. *(Source: WIMD.Gov.Wales).*

Welsh language

Public bodies must work to achieve all seven well-being goals put in place by the WBFGA, with achieving a Vibrant Culture and Thriving Welsh Language being one of the seven goals. The Welsh Government's ambition is to see the number of people able to enjoy speaking and using the Welsh language to reach a million by the year 2050, for further information see the Cymraeg 2050 Welsh Language Strategy. The Council hopes to encourage this ambition by providing the conditions to facilitate an increase in the use of the Welsh language.

To ensure that enough consideration and importance is placed on our statutory requirements arising from the Welsh Language (Wales) Measure 2011, we have undertaken a Welsh Language Impact Assessment to ensure we assess the likely (or actual) effects of initiatives on the Welsh language within our workforce or in the community and seek out ways to mitigate any negative impacts or better contribute to positive impacts.

Following completion of the impact assessment this EVC-strategy will aim to provide bilingual text on the charge points used in the roll out of a charging network across the County Borough. The Council will also promote the procurement of EV charging via suppliers that provide users with the option to complete the transaction through the Medium of Welsh.

Accessibility

All charge point locations will need to be designated for EV use only when charging and should ideally be available 24/7, particularly if the intended users are local residents. The expectations of residents will need to be promoted judiciously, particularly in the case of on-street charge point installation, where several health and safety issues will also come into play, both of a technical and practical nature.

A Vision for Charging in Wales:

> *"By 2025, all users of electric cars and vans in Wales are confident that they can access electric vehicle charging infrastructure when and where they need it."*

To achieve the Welsh Government's vision for charging in Wales, there is a clear need for better quality charging to improve the user experience for electric cars and vehicles, including better accessibility and inclusivity. As such, all charge point locations will need to be designed to safely meet accessibility standards, which will make charging facilities available to everyone, particularly for those most vulnerable and those with accessibility needs.

Glossary

Climate Change:

Net Zero – Some carbon is still released but is offset by renewables we pay for.

Carbon Neutral – Some carbon is still released but is offset by someone else or somewhere else.

Decarbonisation – The action of cutting greenhouse gas emissions.

Vehicle Types:

Electric Vehicle (EV) – Term used to encompass all vehicles that use electric as a fuel source.

Ultra-Low Emission Vehicle (ULEV) – A vehicle that produces less than 75g of Carbon Dioxide for each kilometre driven.

Battery Electric Vehicles (BEV) – A vehicle that runs entirely on electric powered by a battery and charged using a dedicated charge point using mains electricity supply.

Hybrids – Combustion engine and electric propulsion motor. Battery charged through regenerative braking, very low zero emission range.

Plug-in Hybrid Electric Vehicles (PHEV) – A vehicle that combines both traditional combustion engine with an option to plug in the vehicle to extend use of the battery. On average these vehicles will travel 30 miles on an electric battery, after this point the combustion engine will be used.

Plug-in Vehicle (PiV) – Refers to all vehicles that must be plugged in to charge.

Low Carbon Vehicle (LCV) – Refers to vehicles which emit fewer toxic and harmful gases than a standard car.

Heavy Goods Vehicle (HGV) – Refers to vehicles over a weight of 3.5 tonnes.

Charging:

Trickle Charge – The slowest form of charge at less than 2kW using a 3-pin plug. Time intensive, usually used for at-home overnight charging.

Slow Charge – Typically charge at less than 7kW and generally used for overnight charging of BEVs and top ups for hybrid vehicles, with a charge-up time of 8- 12 hours. Faster charging times and better safety features than 3-pin plugs.

Fast Charge – Typically charge at 7- 22kW with faster charging times and enabling users to make better use of off-peak energy tariffs. Typical charge-up time of 1.5- 5 hours.

Rapid/ Ultra Rapid Charge – Typically charge at 43- 350kW with an average charge time between 15- 45 minutes. These are generally located at service stations and public locations.

Type 1 Inlet: Type of connector with a 5-pin plug commonly used by Asian and American manufactures.

Type 2 Inlet: Type of connector with a 7-pin plug commonly used by European manufacturers. This connector type is more favourable with EV development due to their ability to carry a three-phase power supply.

Socketed: A charge point, with a socket, where you can connect either a Type 1 or Type 2 cable.

Tethered: A charge point, with no socket, but with a cable attached, with either a Type 1 or Type connector at the "vehicle end".

Energy:

Kilowatt (kW) – A measure of working power available.

Kilowatt Hour (kWh) – Measure of energy stored or used, used to measure EV battery energy use.

Appendices

Appendix I

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Appendix II

Charging Devices in Wales

This map shows the density of charging devices by local authority. Figure 13 and 14 below illustrate:

- Devices per 100,000 population
- Rapid devices.

Note: Where a device has more than one speed of connector, it is classified as the highest-speed available.

Each map follows the same colour scale, with the bottom 20% of local authorities, the ones with the lowest number of devices being shown by pale yellow and the top 20% by dark blue.

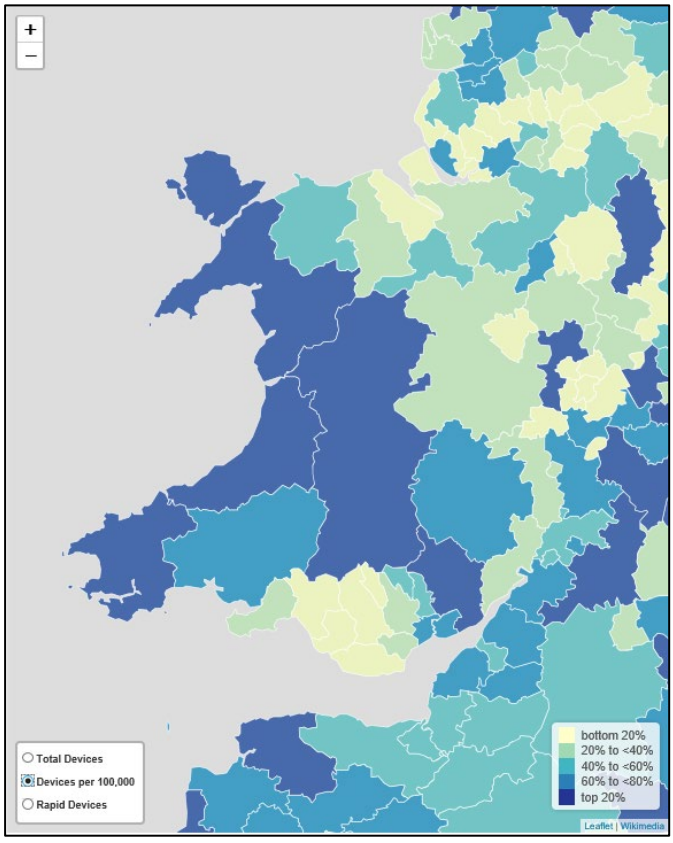

Figure 10: The total number of public electric vehicle charging devices in Wales per 100,000 of the population, based on Office for National Statistics Population estimates for mid-year 2019. *(Source: Department for Transport).*

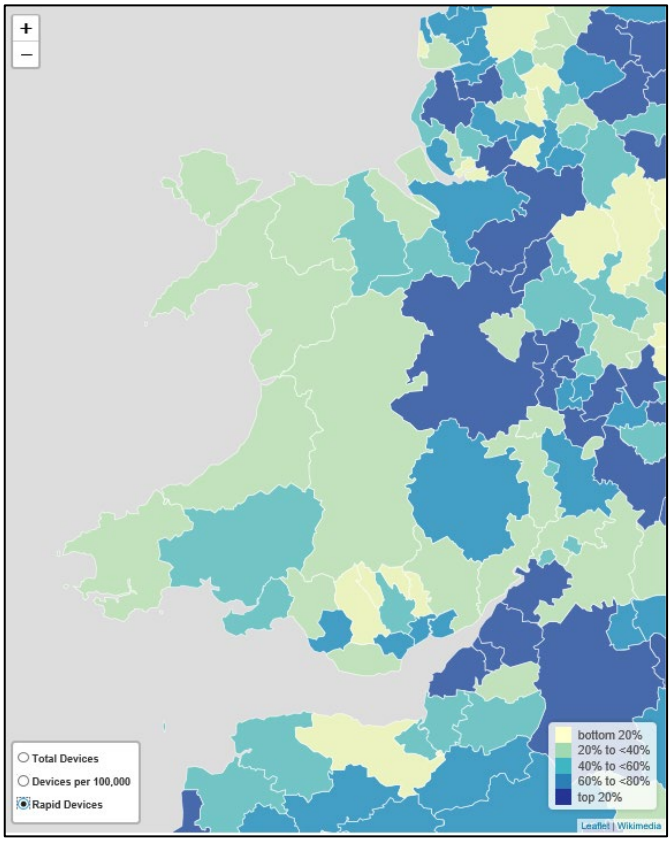

Figure 11: The total number of public rapid electric vehicle charging devices in Wales. 'Rapid devices' are those whose fastest connector is rated at 43kW or above. *(Source: Department for Transport).*