Bridgend County Borough Council

Bridgend Electric Vehicle Charging Strategy

Draft, December 2024

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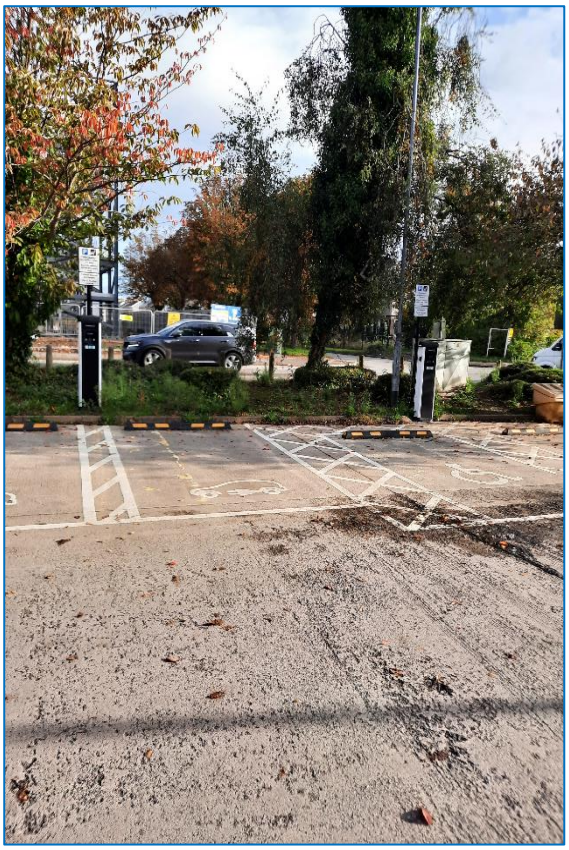
Glossary

Battery Electric Vehicle (BEV)	A vehicle powered entirely by electricity stored in batteries.
Charge Point Operator (CPO)	An entity responsible for the operation and maintenance of EV charging stations.
Department for Transport (DfT)	The UK government department responsible for transport policy and regulation.
Distribution Network Operator (DNO)	A company that operates the electricity distribution network in a specific area.
Electric Vehicle (EV)	A vehicle that uses one or more electric motors for propulsion.
Kilowatt (kW)	A unit of power equal to 1,000 watts.
Kilowatt per hour (kWh)	A unit of energy representing one kilowatt of power used for one hour.
Local Area Energy Plans (LAEP)	A strategic plan for energy infrastructure and services within a local area.
Light Goods Vehicle (LGV)	A commercial vehicle with a gross weight of 3,500 kilograms or less, such as a van or pick-up truck.
Plug-in Hybrid Electric Vehicle (PHEV)	A vehicle that can be powered by both an internal combustion engine and an electric motor, with batteries that can be recharged by plugging into an external source.
Zero Emission Vehicle (ZEV)	A vehicle that produces no tailpipe emissions.

Executive Summary

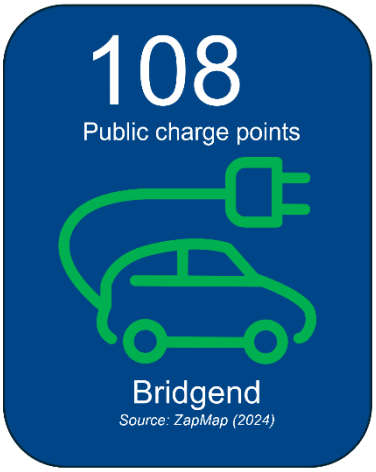
Bridgend County Borough Council declared a Climate Emergency in June 2020, committing to become a net zero carbon local authority by 2030, and targeting net zero carbon emissions across the borough by 2040. Transport remains the largest domestic sector for emissions in the UK at more than 25%, with Bridgend attributing 51% of its emissions to transport. Transitioning to cleaner road transport is crucial for the UK to meet its net zero emissions target by 2050. The recent surge in both the supply and demand for Electric Vehicles (EVs) has highlighted charging infrastructure as the primary challenge to this goal.



This draft EV Strategy has been created to facilitate a scalable shift to Zero Emission Vehicles over the 5 years to 2030, as part of Bridgend's commitment to addressing the climate emergency. This strategy aligns with the Welsh Government's Electric Vehicle Charging Strategy, which aims to ensure that by 2025, all users of electric cars and vans in Wales can access charging infrastructure when and where they need it. We are committed to consulting on this draft EV Strategy in 2025 and use the actions to support our funding applications to Welsh Government which will "turbo-boost" investment and delivery of EV infrastructure in Bridgend.

Bridgend's strategy aims to provide accessible, reliable, and inclusive EV charging infrastructure for all residents, visitors, and businesses. This ensures that everyone will have access to dependable, inclusive and affordable EV charging facilities.

This strategy includes an action plan detailing how the EV strategy will be implemented, supporting the delivery of our key objectives and the realisation of our vision. Proposed actions for each objective are categorised over the next 3-5 years.



Bridgend have been actively increasing its public EV charging network over recent years, particularly in public community spaces such as leisure facilities, and are committed to developing this network further. The County currently has 12 public chargepoints that have been commissioned by the Council, 52 that have been commissioned by the Cardiff Capital Region (CCR), alongside an additional 44 chargers that are operated independently at locations such as supermarkets.

The main focus for the next five years is delivering a public charging network aimed at residents, with the right types of chargers in the right locations.

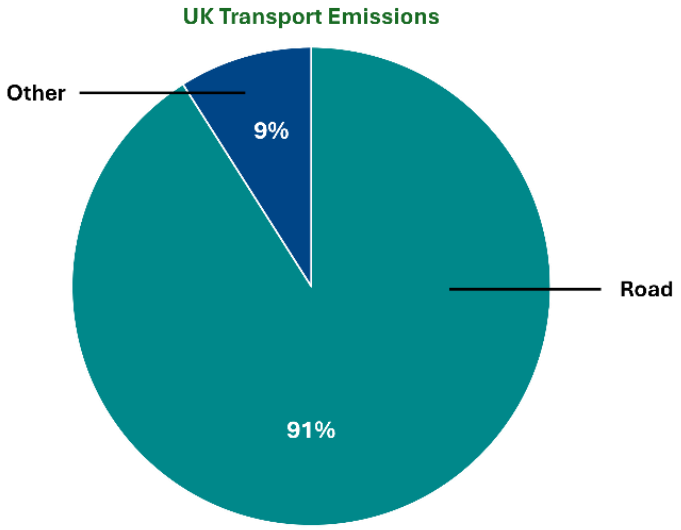
1. The purpose of this strategy

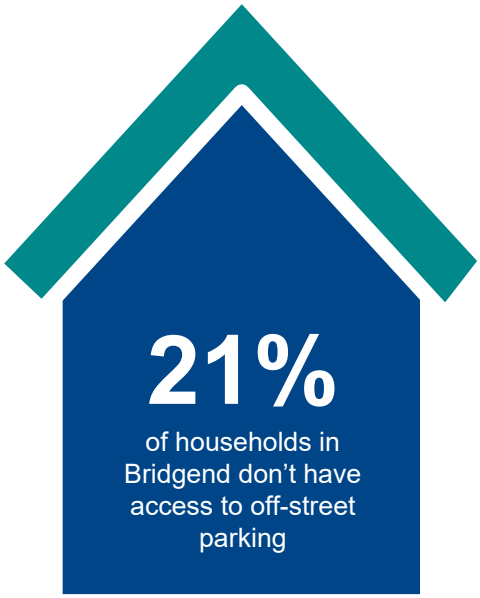
Bridgend County Borough Council is **committed** to delivering an **accessible** and **affordable** EV chargepoint network for everyone who lives, works and visits Bridgend. This is in line with our 2030 commitment to become a net zero carbon local authority, and our 2040 commitment for net zero carbon emissions across the borough by 2040, supporting our Net Zero Carbon Strategy. This will involve enhancing the EVCI provision across the County, building on the more than 60 chargers already delivered by us and CCR.

The purpose of this strategy is to set out our vision and plans for delivering an inclusive charging network by 2030, so that we can get your feedback and secure the necessary public and private funding to meet our future needs. This includes using the actions to support our funding request to Welsh Government to "turbo-boost" delivery of EV infrastructure in Bridgend.

In the UK, transport is the largest emitting domestic sector, with road transport accounting for the majority of these emissions. In order for the UK to achieve the UK governments mandate of net zero emissions by 2050, there needs to be widespread transport decarbonisation.

In order to support and facilitate this transition to EV and encourage EV adoption, an expansion of public EV charging infrastructure in Bridgend is required. EVs will play a crucial role in supporting transport decarbonisation, although this is only one part of Bridgend's and Wales' approach to tackling transport emissions.





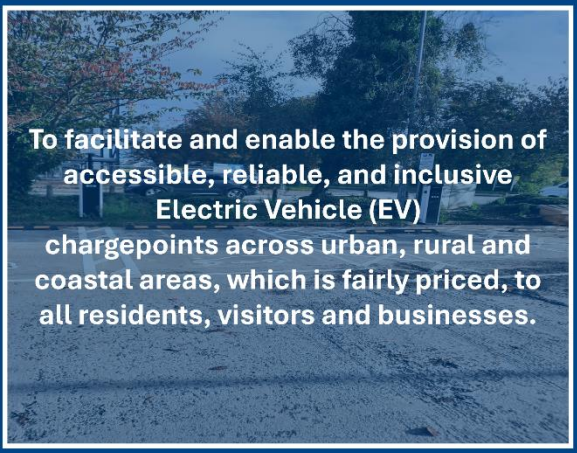
Bridgend has a large variety of housing types, with the more urban areas of Bridgend town centre, Maesteg, Pontycymer, Ogmore Vale, alongside some areas of the coastal resort of Porthcawl, having greater proportions of dense terraced housing that typically do not have access to off street parking. The delivery of accessible and convenient public charging infrastructure is key to overcoming barriers to EV adoption and encouraging EV uptake. It is important that no household is left behind in the transition to transport decarbonisation and that all households have equitable access to the Bridgend EV public chargepoint network.

This Draft EV Strategy has been developed in collaboration with Bridgend County Borough Council officers, council members and key stakeholders. We will continue to update and engage with these stakeholders throughout implementation of the strategy to ensure that the needs of those who live, work and visit Bridgend are considered. The EV Strategy is underpinned by previous experience gained through the delivery of public EV chargepoints and best practice from other local authorities developing an EV Strategy.

Our vision for EV charging in Bridgend

Our strategy is built on a vision, alongside clear aims and objectives, to successfully deliver EV chargepoint infrastructure over the next three to five years up to 2030. Our ambitions do not stop then and Bridgend County Borough Council will review progress against the planned actions in the Strategy by 2030.

Our Vision



To facilitate and enable the provision of accessible, reliable, and inclusive Electric Vehicle (EV) chargepoints across urban, rural and coastal areas, which is fairly priced, to all residents, visitors and businesses.

Aims

1) The further development of an EV charging network
2) Fair and accessible access to chargepoints
3) An inclusive high-quality experience
4) Reduced carbon emissions
5) Working with public chargepoint operators to best benefit the residents of Bridgend

Objectives

1. Increase awareness and knowledge of EVs across the county
2. Develop a network of public chargepoints ensuring appropriate coverage of the right type of chargepoints across the county
3. Ensure the EV chargepoint network is inclusive, reliable and accessible
4. Develop an EV chargepoint network which is sustainable economically, technically and fairly priced for users
5. Facilitate a transition to EVs for both private and commercial users while encouraging walking and cycling reducing car ownership and car mode share

2. What is driving the EV transition?

Political

In order to achieve the Council's ambition to be a net zero Council by 2030.

Environmental

EVs are a crucial part of reducing the transport sectors UK greenhouse gas emissions.

Community

Reducing air pollution will benfit public health and investing in public chargepoints will support a fair transition.

Technological

Consumers have a wider choice of EVs as vehicle manufactuers ramp up production alongside a growing second hand EV market.

Regulatory

The UKs net zero target by 2050 is legally binding and the Zero Emission Vehicle Madate comes into force from 2035.

Economic impact

Local benefits range from job creation and chargepoints can help attract visitors and tourists to destinations.

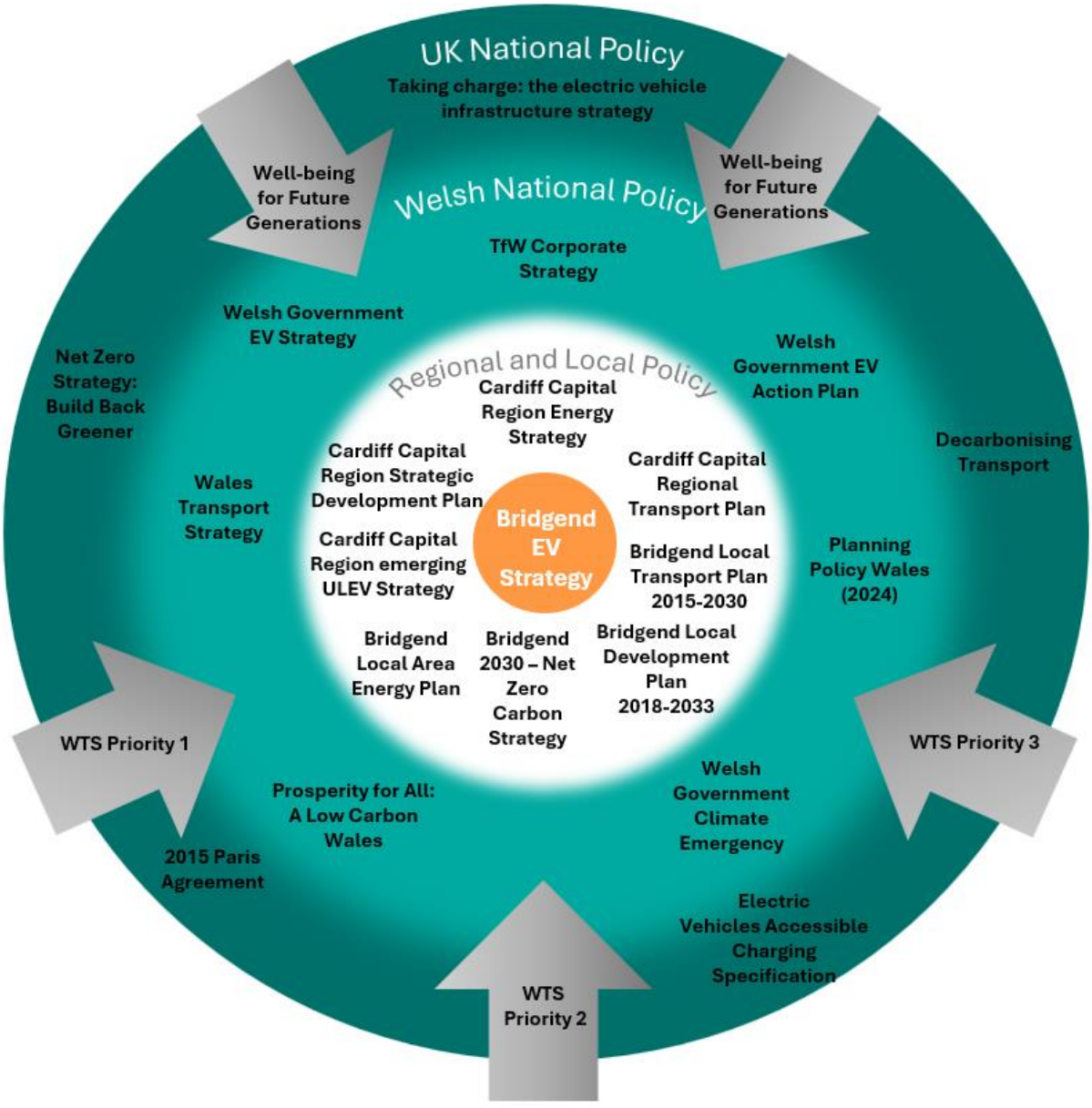
3. Where are we now?

Bridgend's draft EV strategy is building on the ambitions, commitments and progress of the UK and Welsh Governments (see Figure 1). Since 2019, local authorities across Wales have delivered over 100 EV charging projects, with commercial Charge Point Operators (CPOs) delivering many times more. This was supported by Transport for Wales' (TfW) early interventions to ensure the most rural sites on the Strategic Road Network had rapid chargers, building on the base network to ensure 50kW charging at least every 25 miles.

Across the County, we have already delivered more than 60 chargers over more than 30 sites, and there are more than 2,900 electric vehicles now registered in our area.

Policy position

Figure 1 National, Regional and Local Policy Context

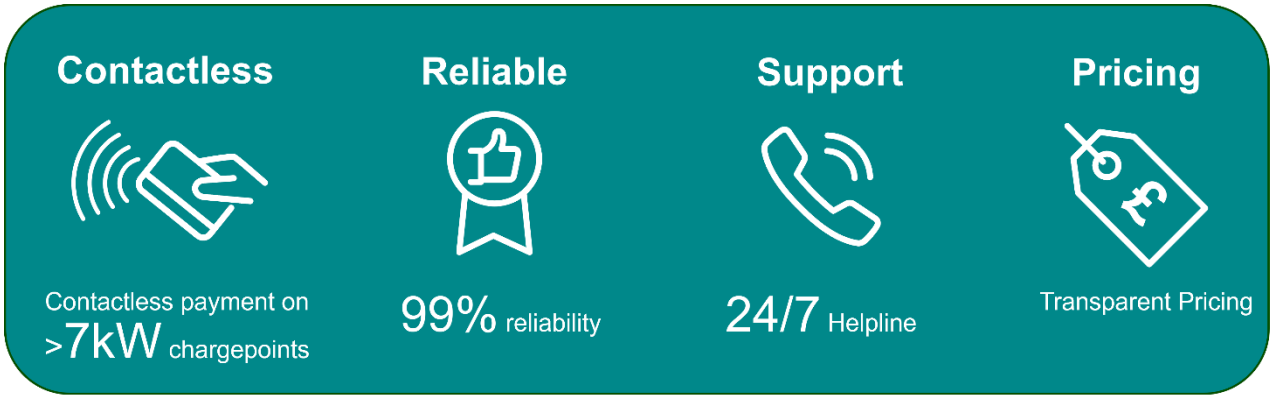


UK National Policy

The UK Government has pledged to achieve net zero emissions across all transport modes by 2050, as detailed in the documents 'Decarbonising Transport: A Better Greener Britain' and 'Powering up Britain'.

The 'Taking Charge' plan outlines a national strategy for implementing EV chargepoint infrastructure. The goal is to eliminate barriers to EV adoption by making chargepoints more affordable and convenient, ensuring that everyone can easily find and access reliable public chargepoints with both on-street and off-street options. In September 2023, the UK Government announced that new petrol and diesel cars and vans can continue to be sold until 2035, extending the previous deadline which required all new car and vans to be zero emission at the tailpipe by 2030.

The 'Public Chargepoint Regulations' introduced in 2023 aim to enhance the EV user experience by setting standards for contactless payment. These include:



Welsh Government Policy

Welsh Government declared a climate emergency in 2019 and have committed to delivery of Wales' target of net zero by 2050. Wales' EV strategy followed from UK government guidance, with a host of other policy documents that support or relate to this EV strategy as demonstrated in Figure 1.

Welsh Government published an Electric Vehicle Charging Strategy in 2022, which sets out an objective 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 Welsh Government position on EV charging is synonymous with Central Government messaging and policy around the topic, with a targeted transition to EV being central to transport decarbonisation, removing charging infrastructure as a perceived and real barrier to EV adoption.

Local Policy

Both Cardiff Capital Region and Bridgend County Borough Council's existing policies have net-zero ambitions and sustainability embedded within them, which will support the emerging Bridgend EV strategy. CCR's emerging ULEV Strategy seeks to reduce emissions and improve charging infrastructure, with a reduction in road transport emissions of 60% by 2035 across the region targeted as part of the CCR Energy Strategy.

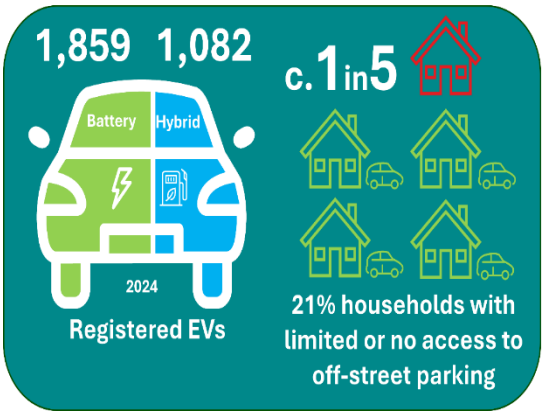
The Corporate Joint Committee (CJC)se has been actively involved in advancing the Strategic Development Plan (SDP), which is currently at the delivery agreement stage, and the Regional Transport Plan (RTP), which is out for consultation.

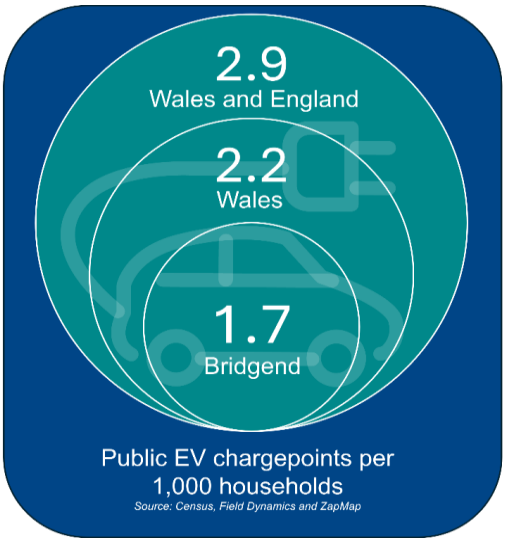
Further information on relevant policy from the UK Government, Welsh Government and Bridgend County Borough Council is outlined in Appendix A.

Current progress

To date, public EV charging deployment that has been led by Bridgend County Borough Council has been focused on public places such as council owned car parks in leisure centres and facilities. This has created 12 EV chargepoints across these locations. There are also 52 chargepoints that have been installed by CCR at a number of Council car parks and on-street locations.

Chargepoints are also available at a variety of private premises such as the supermarkets in Bridgend and Maesteg. These provide a combined total of 108 public EV chargepoints across Bridgend at present.

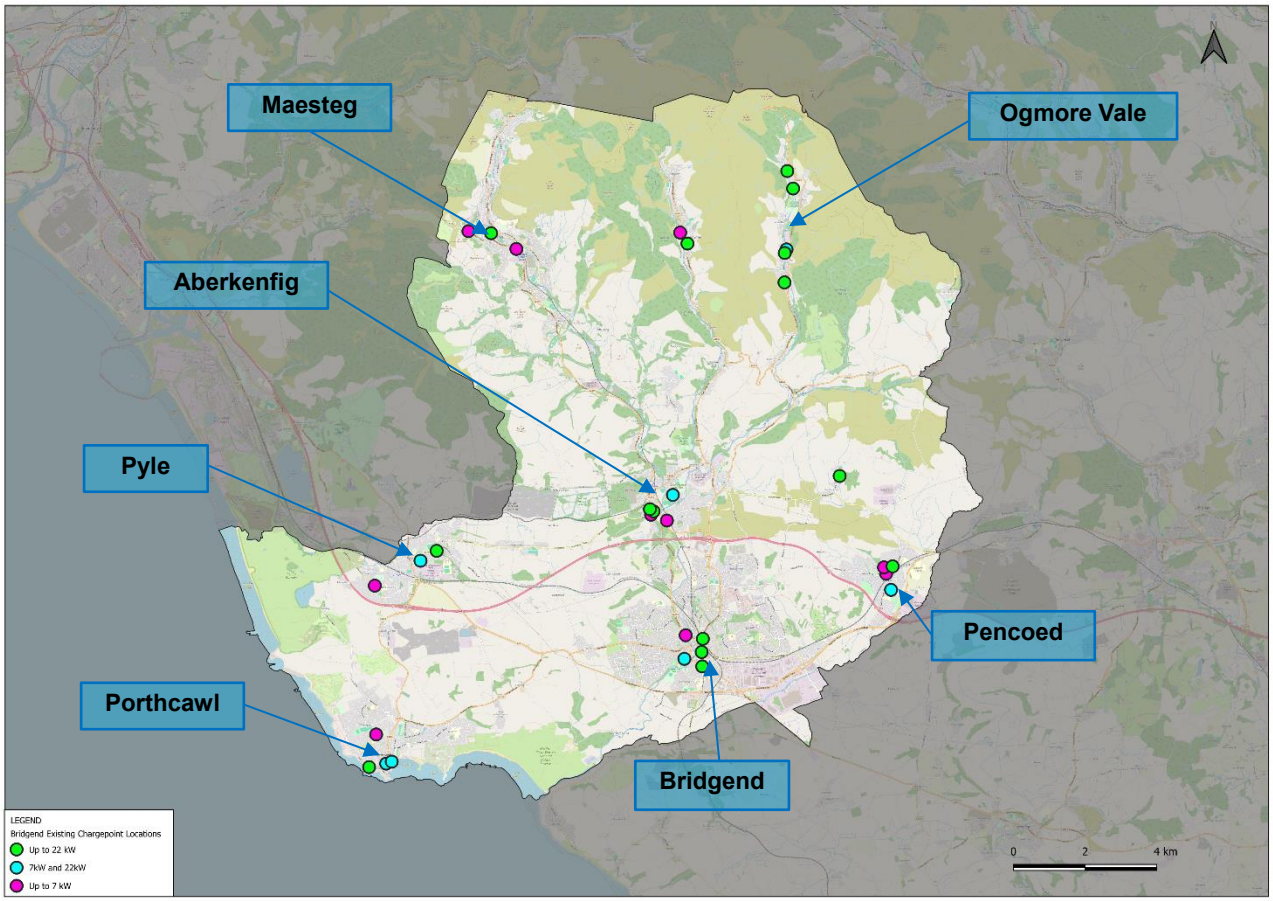




Existing infrastructure, which includes two chargepoints at each of the 6 sites mapped in Figure 2, has been commissioned by Bridgend County Borough Council and are operated by a private operator on our behalf. All current chargepoints are slow to fast chargers that deliver up to 7kW only, 7kW and 22kW depending on the socket used and and to 22kW.

Figure 7 in Section 6 provides further information on the types of charging speeds currently available and the potential scenarios best suited to each speed.

Figure 2 Map of Bridgend's Existing Council Commissioned EV Chargepoints

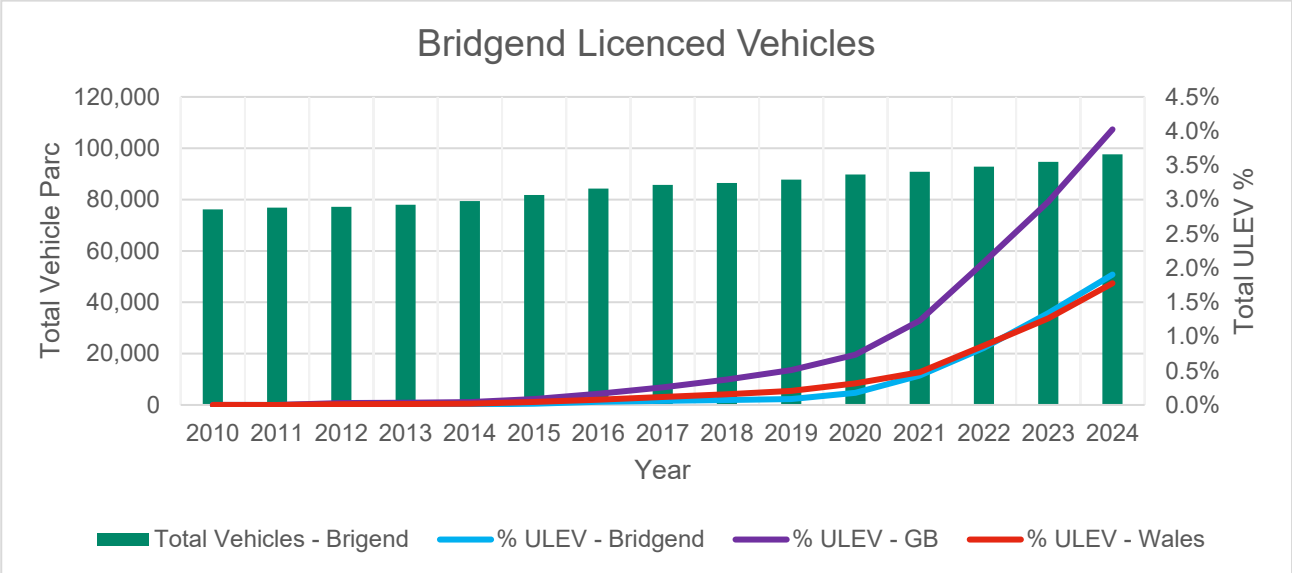


The coverage these Council commissioned chargepoints provide across the County is equivalent to 26% of the population within a 5 minute walk as shown in Figure 3. The chargepoints at Maesteg Row, 2 Heol Llan and Tremains Road Car Park in Bridgend currently serve the greatest number of households, with approximately 1000, 880 and 870 households within a 5 minute walk of each respectively.

Figure 3 Current extent of chargepoint coverage within a 5 minute walk across Bridgend

Understanding how the current chargepoint provision reflects the overall percentage of EVs as a proportion of all vehicle types is also a key consideration. Using registered vehicles across the County, Figure 4 shows an increase in BEVs/PHEVs as a proportion of the overall number of registered vehicles in Bridgend, as well as the Welsh National and Great Britain trends, since 2010. Bridgend is currently falling behind in EV uptake compared to trends across the whole of Great Britain.

Figure 4 Number of registered EVs in Bridgend compared to Great Britain and Wales (correct to the time of writing)



To ensure the number of EVs continue to grow and does not plateau, it is vital there is an equitable network of public EV chargepoints across the Bridgend area which serve the needs of all of those who live, work in, travel through and visit Bridgend.

The role of the Council

Bridgend County Borough Council will play a crucial role in helping our residents, businesses, and visitors make more sustainable travel choices by providing new infrastructure such as additional EV chargepoints. In 2020, we declared a climate emergency, and as part of our response, we are taking steps to reduce transport-related carbon emissions from our services.

As a Council, we must thoughtfully consider the social, financial, and technical aspects and implications of EV charging infrastructure. Numerous stakeholders will play a role in the transition to EVs, and we aim to ensure our actions are supportive and well-coordinated to achieve the best outcomes for the County.

We will carefully select locations for EV chargers, taking into account placemaking principles to avoid street clutter and minimise the impact on heritage assets like listed buildings and conservation areas. This will ensure that our installations enhance the community's environment without detracting from its historical and visual appeal. Engaging with the Local Planning Authority (LPA) early in the process will help us navigate planning permissions and align with local development plans.

Councils are not energy providers and generally lack dedicated budgets for EV charging infrastructure. Therefore, our role is to facilitate the deployment of slow, fast, rapid, and ultra-rapid chargepoints across the County through partnerships with the private sector and government-funded initiatives designed to kickstart the efforts of Councils, businesses, and residents.

This approach will involve direct collaboration with chargepoint operators and other local landowners to identify and establish practical, accessible sites and affordable solutions that can deliver high-quality, reliable charging options for the future.

The role of the Council is summarised as being to:

- **Promote Equity**: Provide charging infrastructure in underserved and rural areas to ensure all communities have access to EV charging, promoting a fair transition to EVs.
- **Support Local Businesses**: Install charging points in commercial areas to attract EV drivers, boosting local businesses and encouraging economic growth.
- **Leverage Public Assets**: Utilise council-owned properties, such as car parks and public buildings, to host charging stations, optimising the use of existing resources.
- **Encourage Private Investment**: Create a favourable environment for private sector investment in EV infrastructure by demonstrating the council’s commitment and providing initial support.

4. Where are we going?

The number of EVs in Bridgend and Wales is expected to continue to rise. This will be accelerated by the UK Government ban on the sale of new petrol and diesel vehicles in 2035, with almost all vehicles forecast to be fully electric by 2050.

We have used a best practice EV uptake forecast methodology to develop our aspirations for EV chargepoint growth in Bridgend based on a "medium" uptake scenario to best meet our vision for public EV charging. This will require a total of 332 chargepoints by 2030 to meet the "medium" scenario EV uptake demand (see Figure 6). This equates to an additional 224 public EV chargepoints that will be needed by 2030.

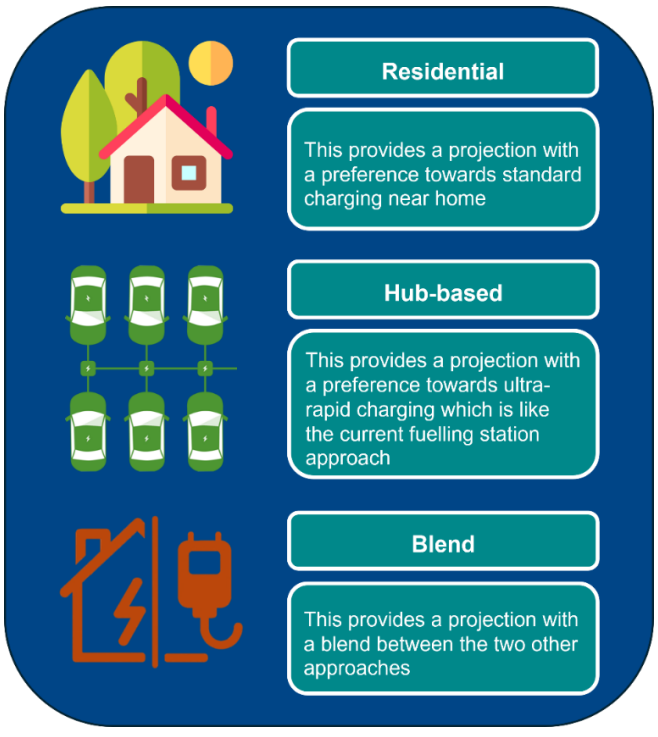
Modelling has been carried out using a best practice EV uptake forecast tool[1], to forecast the future number of EVs in the Bridgend area. As with any projection methodology these forecasts should be taken as indicative estimates which will need to be revisited and updated as and when new information becomes available.

The EV uptake scenarios define the proportion of new vehicle sales each year which are EV. Three scenarios are represented by the tool and are represented as slow, medium or fast electrification of the vehicle parc (e.g. all vehicles on the road). Further detail regarding the forecast uptake methodology can be found in Appendix B.

Utilising DfT vehicle registration and licensing data target points have been added to allow an adoption curve to be constructed from the historic data to the target. These target points are taken from existing policy positions:

- Low: low EV sales up to 80% of all sales by 2030 (70% for commercial vehicles)
- Medium: 2035 ban – 100% of new car and LGV sales are BEV by 2035
- Fast: 2030 ban – 100% of sales are EV by 2030, and 100% BEV by 2035

The forecasts also consider three EVI Strategy approaches:



[1] The National EV Insight & Support (NEVIS) tool. See Appendix B for further information.

Of the three approaches the “medium[2]” approach is being considered by Bridgend as this approach meets our aspirations and vision for public EV chargepoint infrastructure in the area. Details outlining the forecast number of EV vehicles and the expected number of EV chargepoints under the “low” and “fast” uptake scenarios are outlined in Appendix C. The forecasts for the expected vehicle types and associated number of chargepoints required in Bridgend up to 2050 are shown in the figures below. These identify that an additional 18,575 EV vehicles are forecast within Bridgend by 2030, 39,572 by 2035 and 79,377 by 2050. These will require an additional 224 public chargepoints by 2030, 476 by 2035 and 872 by 2050 to serve this increase from current levels.

Figure 5 Forecast Vehicle Types Across Bridgend by 2050

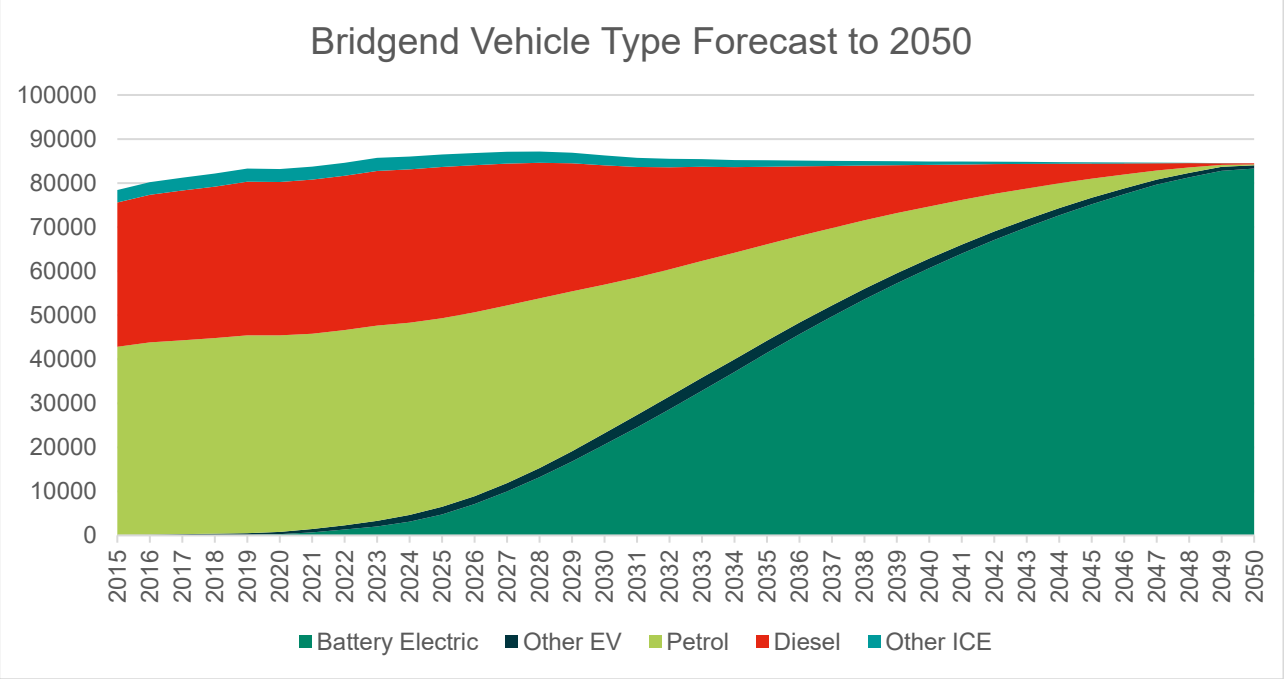
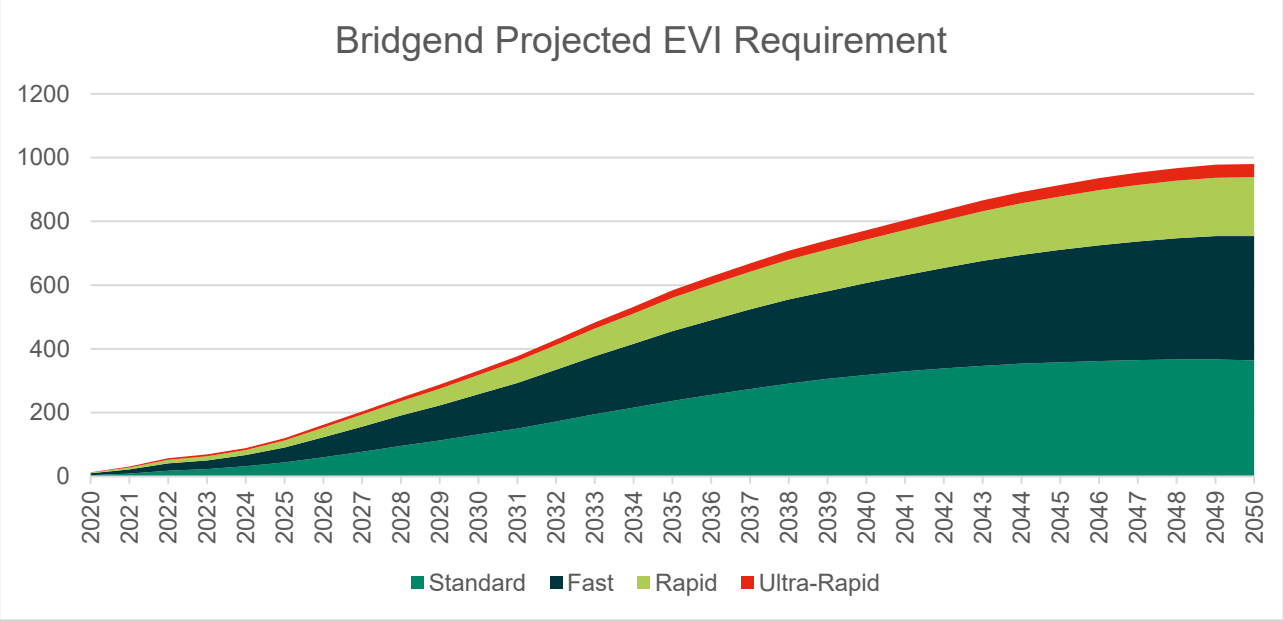


Figure 6 Forecast Required Chargepoints Across Bridgend by 2050



[2] The medium scenario corresponds to the 2035 phase-out of non-EVs

5. What are the drivers and barriers to EV uptake?

Drivers

Environmental Benefits

As a driver, knowing that switching to an EV helps reduce emissions and improve air quality can be a strong motivator. It's a way to contribute to a cleaner environment.

Cost Savings

Over time, EVs can be cheaper to run than petrol or diesel cars due to lower fuel and maintenance costs. Government incentives and grants can also make the initial purchase more affordable.

Technology and Performance

Modern EVs offer impressive performance, with quick acceleration and a quiet, smooth ride. The latest models also come with advanced technology features that can enhance the driving experience.

Barriers

Availability of Charging Infrastructure

As a driver, the availability of charging points is crucial. The high demand for on-street parking and issues with grid capacity limiting the number of charging stations can be a significant barrier.

Range Anxiety

The fear of running out of battery before reaching a charging point can be a major concern. This is especially true for longer journeys or in areas with fewer charging stations.

Upfront Costs

The initial cost of purchasing an EV can be higher than that of a traditional vehicle. Even with potential savings on fuel and maintenance, the upfront expense can be a deterrent for drivers.

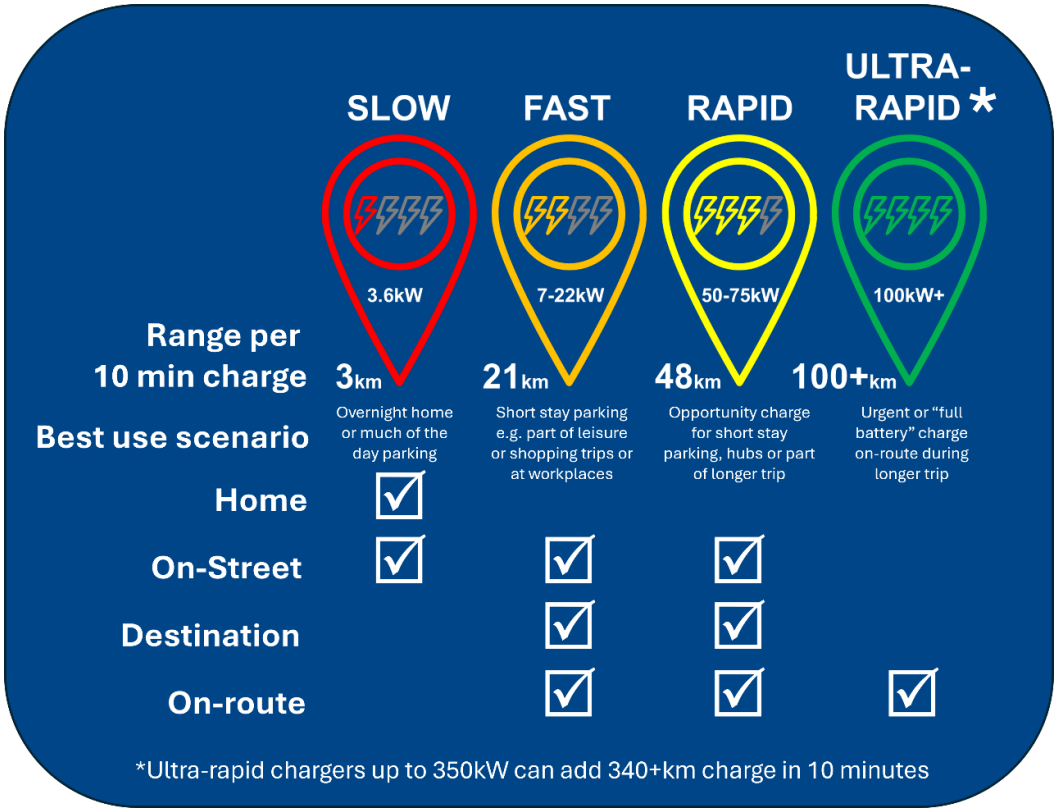
6. What are our chargepoint options?

How should chargepoint speeds be decided?

A number of chargepoint speeds are possible to install at potential future chargepoint sites as shown in Figure 7. These range from “slow” (3-7kW) to “ultra-rapid” (>100kW). The type of chargepoint needed depends on the location. At homes or workplaces, where people spend longer periods, slower chargepoints are ideal. Conversely, rapid and ultra-rapid chargepoints are more suitable for destinations or on-route charging, such as motorway services or visitor hotspots including beach resorts like Porthcawl, alongside parks. Faster chargepoints generally require more space, are more expensive to install and use, and place a higher demand on the power grid. In rural areas, limited grid capacity can pose significant challenges and additional costs for installations. Therefore, having a mix of chargepoints in an area is beneficial to meet various user needs and site constraints.

The provision of charging infrastructure for LGVs will also be considered. For example, opportunities for fast and rapid chargepoints in business parks and commercial areas to serve as opportunity chargepoints will be considered, alongside ensuring slow chargers are available in residential areas that are able to accommodate van users.

Figure 7 Chargepoint Speed Options



In Bridgend, groups of people likely to be partly or fully reliant on public chargepoints or alternatives include:

- **Residents in urban areas** who don’t have access to off-street parking or park in nearby car parks, including those living in terraced homes and flats.
- **Visitors and tourists** who do not have access to a chargepoint at their accommodation, especially those on longer journeys exploring the scenic landscapes.
- **Tenants in rented accommodation or developments** with communal car parks, where the property owner or manager has not installed chargepoints.
- **Travellers** on longer routes who need to ‘top up’ mid-journey, particularly at popular tourist destinations and service areas.

Given Bridgend's diverse community and the importance of tourism, having a variety of chargepoints is crucial. This approach ensures that the needs of both residents and visitors are met, while also addressing the challenges posed by rural grid capacity constraints.

What types of chargers are being developed?

Whilst EV charging technology for private driveways and car parks is well developed, on-street solutions are currently at an earlier stage of development. Across the market there is a range of upcoming chargepoint innovations being trialled and piloted, predominantly for use in on-street settings. Bridgend will monitor the development of these technologies and trials to understand which solutions would be most appropriate to the County.

Wireless Charging

Wireless EV charging uses inductive charging technology to recharge the vehicle battery without the need for physical cables. The innovative technology is still being researched, tested and developed through a small number of pilots and trials globally. The technology is not currently commercially or technically ready.

Advantages

✓ No street clutter and trip free way to run cables across pavements, reducing the risk of accidents

✓ EV owners are able to charge at home on their own energy supply, utilising cheaper tariffs

✓ Easy installation

Disadvantages

× Vehicles will need to be retrofitted

× Low technology readiness level

× High cost of installation and maintenance

Cable Gully Charging

Cable gully provides a solution to households who do not access to off-street parking. Cable gullies are channels installed in the pavement that provide a discreet and safe way to extend charging cables from homes to the roadside. Installation does not require heavy machinery and can be done by LAs.

Advantages

✓ No street clutter and trip free way to run cables across pavements, reducing the risk of accidents

✓ EV owners are able to charge at home on their own energy supply, utilising cheaper tariffs

✓ Easy installation

Disadvantages

× Can be expensive, especially if extensive groundwork is required

× New form of infrastructure requirements for LAs to update local policy planning and process

× Limited use for flats and multioccupancy residential buildings

Pop-up Pavement Charging

Pop-up EV chargerpoints posts offer a solution to households who do not have off-street parking. They remain hidden in the pavement when not in use, keeping footways clear. Currently, they are mostly available in trial phases in select cities.

Advantages

- ✓ Minimised street clutter by promoting space efficiency due to being able to retract into ground when not in use
- ✓ They can be installed in clusters, allowing for multiple chargers in one area with extensive infrastructure changes
- ✓ Improved safety as they are flush in the pavement when not in use

Disadvantages

- × Initial high installation costs especially if groundwork is required
- × Installation can be complex due to groundworks
- × Not widely available, mostly in trial phases

Lamppost Charging

Lamppost charging, including the retrofitting of existing lampposts, provides a solution to households who do not access to off-street parking. New lampposts with integrated chargers or existing lampposts with a chargepoint fitted retrospectively can provide a new charging option without requiring additional street furniture. The installation does not require footways to be dug up and can charge up to 7.36kW.

Advantages

- ✓ No additional street clutter and trip free way to run cables across pavements, reducing the risk of accidents
- ✓ EV owners are able to charge at home on their own energy supply, utilising cheaper tariffs
- ✓ Easy installation

Disadvantages

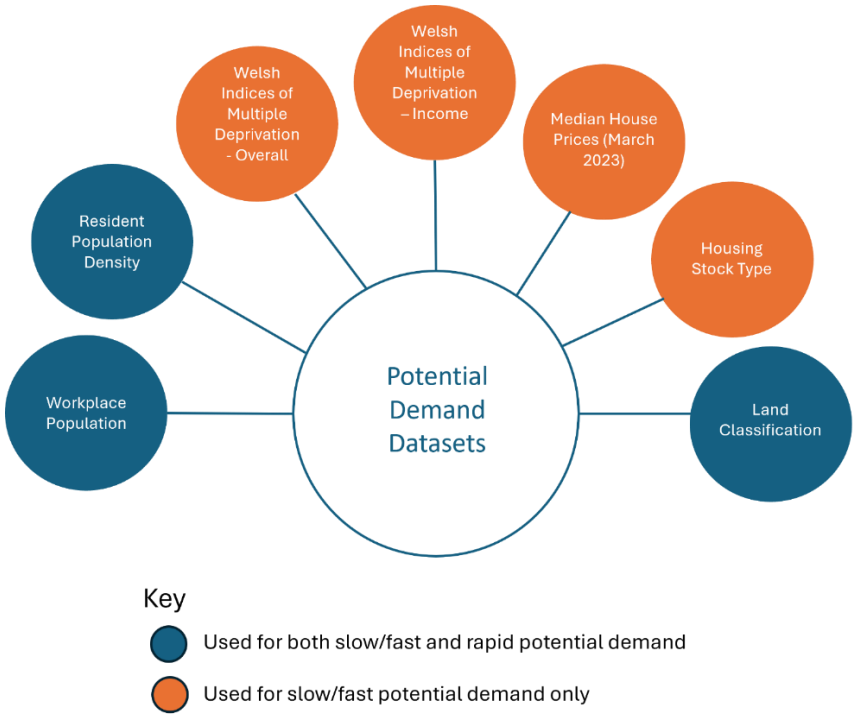
- × Can be expensive, especially if extensive groundwork is required
- × New form of infrastructure requirements for LAs to update local policy planning and process
- × Limited use for flats and multioccupancy residential buildings

7. Where will we need chargepoints by 2030?

To date, chargepoint rollout undertaken by the Council has been undertaken based on identifying suitable Council owned car parks in leisure-based settings which provide suitable locations for fast chargers. The rollout of CCR chargers has similarly identified suitable Council owned car parks, as well as some on-street locations, to deliver a mixture of slow/fast chargers across the County. To deliver the future forecasted number of chargers that will be required in Bridgend by 2030 (as identified in Section 4), it is important to consider where and when they are needed across the whole County, including in on-street settings, using a more evidenced spatial approach. A demand led approach has therefore been used to determine particular areas within Bridgend which are likely to require the largest share of the expected number of chargepoints.

Using a demand led approach to identifying the need for chargepoints

To develop a proactive EV chargepoint deployment strategy, we have evaluated the underlying potential demand for EV charging infrastructure across Bridgend. Several different indicators have been used to support this analysis including:



These indicators have been adapted based on charging speed. The demand potential for rapid chargers focuses on urban retail and manufacturing areas within the land classification indicator, excluding factors like housing stock type, deprivation, and house prices. Conversely, slow/fast charging demand focusses on residential and employment type areas. In both scenarios, areas with higher resident and workplace populations have been rated as having a greater potential for chargepoint demand. However, only slow/fast charging has taken higher percentages of flats or terraced housing within the housing stock indicator, alongside lower levels of deprivation and higher house prices, to indicate a greater potential demand for chargepoints. Further detail regarding the appraisal process is included in Appendix D. The results of this analysis have been visualised using “hexcell” based GIS data analysis to estimate the underlying demand for:

- Slow/Fast charging focusing on charging needs of residents without access to a driveway to charge their vehicles at home, alongside employees with extended periods at one location; and
- Rapid charging at points of interest, for fast top-up charging by residents, visitors and customers.

As locations are identified, it may be necessary to adopt a mixture of charging point speed to factor for a variety of charging purposes. For example, if a mobility hub type facility consisting of features such as EV

charging bays, cycle storage and public transport connections is considered at a strategic site, both slow and rapid chargers will be considered. Slow chargers will serve employees commuting into an area of employment, whilst rapid chargers will better serve shorter stay visitors travelling for leisure or personal business. It is also worth considering "passive" provision[3] of infrastructure to support quick installation of future connections as demand grows.

Demand for Slow/Fast (7-22kW) EV chargepoints

The highest potential for on-street slow/fast chargepoints are in locations where there is high population density alongside lower access to off-street parking. Slow/Fast charging demand is currently solely met by 22 kW EV chargepoints that have been commissioned by Bridgend County Borough Council. As of November 2024, there are currently 6 Council and 26 CCR commissioned locations in Bridgend with slow/fast chargers. These are listed in Table 1:

Table 1 The 30 Current Council Commissioned Slow and Fast Chargers in Bridgend

Current Council Commissioned Slow & Fast EV Chargepoints	
Garw Valley Leisure Centre (Up to 7kW)	Five Bells Car Park, Bridgend Centre (Up to 22kW)
Ogmore Valley Life Centre (7kW and 22kW)	Station Yard Car Park, off Commercial Street, Ogmore Vale (Up to 22kW)
Pencoed Swimming Pool (7kW and 22kW)	Dinam Street Car Park, Nant y Moel (Up to 22kW)
Pyle Swimming Pool (7kW and 22kW)	Former Railway Yard, Commercial Street, Nant y Moel (Up to 22kW)
Ynysawdre Swimming Pool (7kW and 22kW)	Oxford Street Car Park, Pontycywmer (Up to 22kW)
Bridgend Bowls Club car park (7kW and 22kW)	Hope Street Car Park, Aberkenfig (Up to 22kW)
Brackla Street Surface (Up to 22kW)	High Street Car Park, Heol y Cyw (Up to 22kW)
Tremains Road Car Park (Up to 22kW)	Penprysg Car park, Pencoed (Up to 22kW)
Tondu Road Car Park (Up to 7kW)	Pisgah Street (off Park Street behind Heath Bridge Surgery), Kenfig Hill (Up to 22kW)
Sarn Station Park & Ride (Up to 7kW)	Heol y Llyfrau car Park, Aberkenfig (Up to 22kW)
Maesteg Multi-Storey Car Park (Up to 22kW)	Maesteg Row, Maesteg (Up to 7kW)
Neath Road (Up to 7kW)	119 Bridgend Road, Aberkenfig (Up to 7kW)
Pencoed Railway Station Park & Ride Car Park (Up to 7kW)	2 Heol Llan, North Cornelly (Up to 7kW)
Porthcawl Seafront - on street (Up to 22kW)	25 Green Valley, Pencoed (Up to 7kW)
Hillsboro Place Car Park, Porthcawl (7kW and 22kW)	5 Suffolk Close, Porthcawl (Up to 7kW)
Eastern Promenade, Porthcawl (7kW and 22kW)	Park Avenue Car Park, Ogmore Vale (Up to 22kW)

These, alongside the expected relative demand for slow/fast EV chargepoints by 2030, with a focus on on-street charging, are mapped in Figure 8. Highest potential demand is represented by the darkest areas and lowest by the lightest areas respectively. Figure 8 identifies that the south of the County currently has the greatest demand for an enhanced number of EV chargepoints up to 2030.

[3] Passive provision is when the necessary underlying infrastructure (e.g. cabling to parking spaces) is in place to ensure simple installation and activation of a charging point at a future date.

Figure 8 Potential Demand for Slow/Fast Chargepoints by 2030

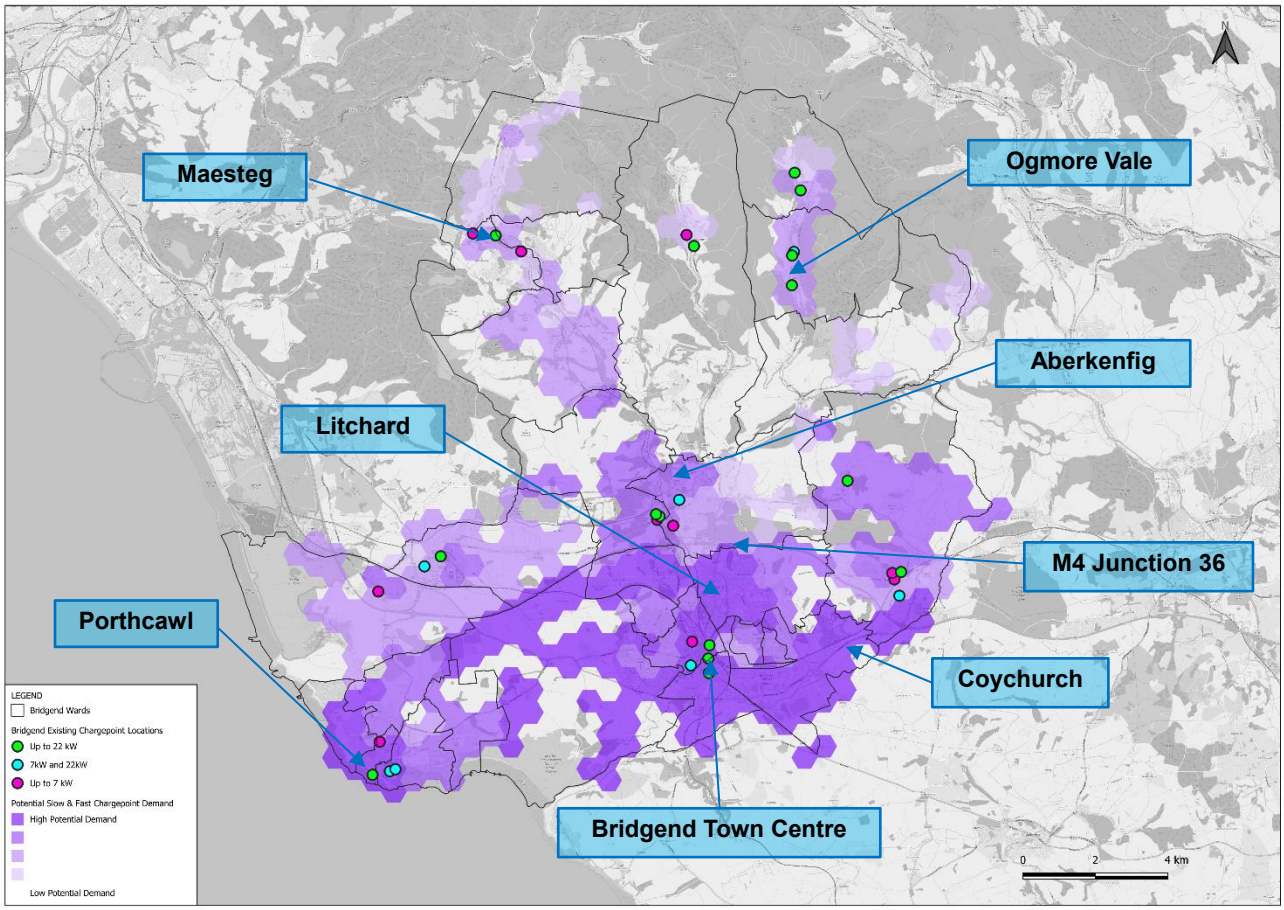


Table 2 further identifies a number of wards that have the greatest potential demand and key places and point of interest contained within them. These places will therefore be prioritised when identifying new EV chargepoints going forward. Consideration will also be given to valley communities such as Maesteg and Ogmore Vale where suitable locations can be identified, as these locations are shown to have a medium level of demand potential.

Table 2 Highest Priority Wards for Slow/Fast Chargepoints by 2030

Ward	Key Locations	Points of Interest
Brackla East and Coychurch Lower and Brackla West	• Brackla	
Coity Higher	• Coity • Litchard • Coychurch • Bridgend Industrial Estate	• Princess of Wales Hospital • Castell Coety • Bridgend Designer Outlet (Supermarket and Hotel)
Bryntirion, laleston and Merthyr Mawr	• Broadlands • Laleston • Merthyr Mawr	
Bridgend Central	• Town Centre • Ystrad Fawr • Brynhyfryd • Newcastle • Wild Mill	• Bridgend and Wild Mill station • Bridgend Bowls Club
Porthcawl (East & West Central, Nottage and Rest Bay)	• Town Centre	• Rest Bay • Sandy Bay • Trecco Bay • Coney Beach Pleasure Park

		• Royal Porthcawl Golf Club
Oldcastle	• Oldcastle • Whiterock	
Pen-y-Fai	• Pen-y-Fai	• Glanrhyd Hospital
Pencoed and Penprysg	• Pencoed	• Pencoed Station • Pencoed Business Park • Bocam Park
Aberkenfig	• Aberkenfig	• Sarn Station (Park and Ride) • Parc Slip Visitor Centre and Café • Tondu Enterprise Centre

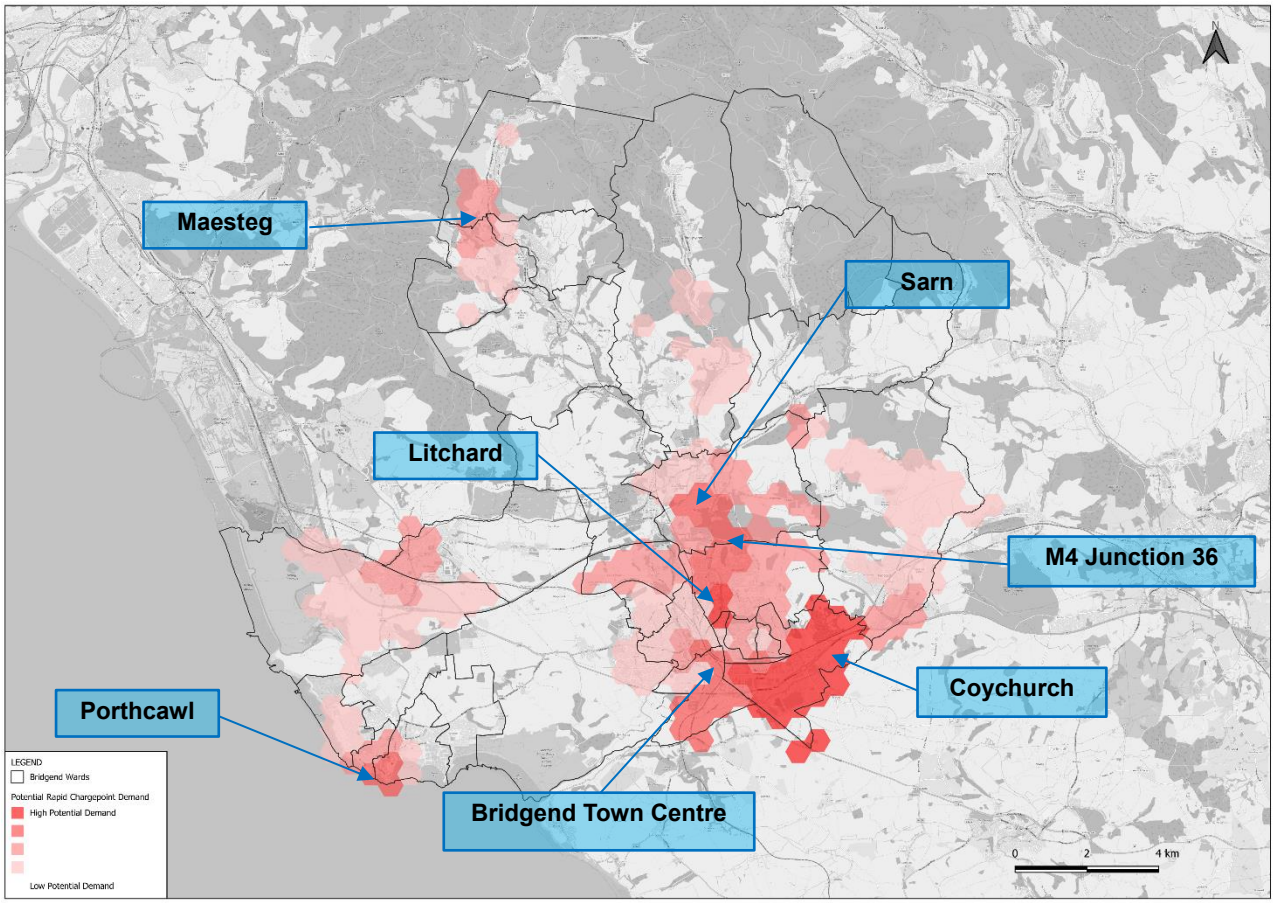
Note: Existing Council commissioned EV chargepoint locations are highlighted in red.

Rapid (50-100kW) EV chargepoint relative demand

Furthermore, key locations for potential rapid or ultra-rapid chargepoints have been identified, considering both the key destinations across Bridgend (i.e., locations with higher dwell time) and the availability of space to locate rapid chargepoints (either standalone or as a hub). These locations include high opportunity areas (e.g. retail, high-street car parks, industrial areas and tourist locations). These chargepoints will help meet the need of residents for top-up charging, as well as that of visitors, small businesses, taxi and PHV drivers travelling into the borough.

Bridgend currently has no rapid chargers that have been commissioned by the Council or CCR. A number of third-party operators do however operate such chargers across the County. We are therefore looking to begin developing our own rapid network of chargers at key locations that have been identified in the heat demand map in Figure 9. Highest potential demand is represented by the darkest areas and lowest by the lightest areas respectively. Figure 9 identifies that the wards closest to Bridgend town centre have the greatest potential demand for rapid chargepoints, alongside the area surrounding Junction 36 for the designer outlet and Sarn Park service station. Notably, wards containing Porthcawl town centre, Cornelly and Maseteg town centre are also identified as having a potential demand for rapid chargepoints.

Figure 9 Potential Demand for Rapid Chargepoints by 2030



In addition to those highlighted in Figure 9, some further wards for rapid chargepoint consideration are identified in Table 3, alongside some potential key locations and points of interest for consideration.

Table 3 Highest Priority Wards for Rapid Chargepoints by 2030

Ward	Key Locations	Points of Interest
Brackla East and Coychurch Lower and Brackla East Central	• Brackla	
Coity Higher	• Coity • Litchard • Coychurch	• Bridgend Industrial Estate • Princess of Wales Hospital • Castell Coety • Bridgend Designer Outlet (Supermarket and Hotel)
Oldcastle	• Oldcastle • Whiterock	
Bridgend Central	• Ystrad Fawr • Brynhyfryd • Newcastle • Wild Mill • Town Centre	• Bridgend Bowls Club
Porthcawl (East & West Central)	• Town Centre	• Coney Beach Pleasure Park • Sandy Bay • Trecco Bay
St. Bride's Minor and Ynysawdre	• Sarn • Brynmenyn	• Tondu Iron Park • Bridgend Designer Outlet (Stores) • Welcome Break Sarn Park Services M4 • Ynysawdre Swimming Pool • Sarn Station Park and Ride

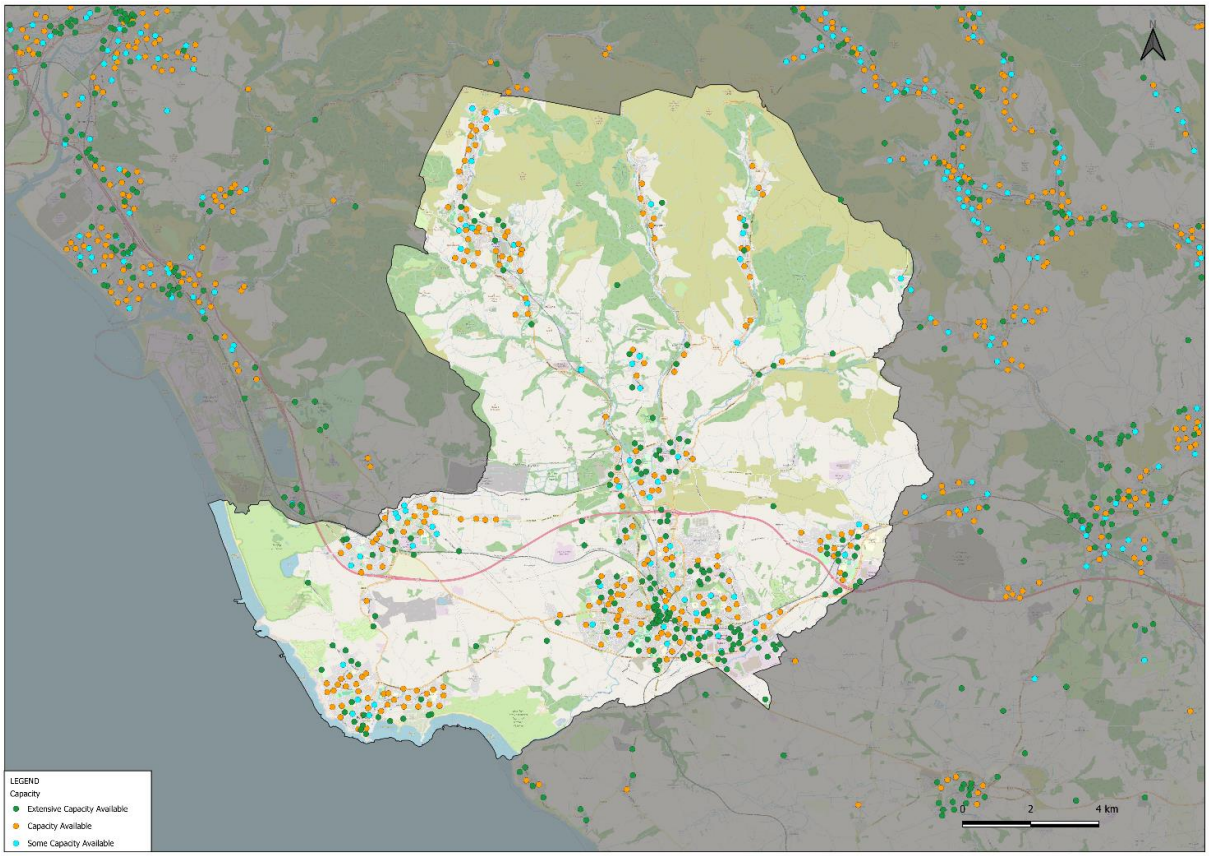
Caerau	• Caerau • Nantyffyllon • Spelter	
Pyle, Kenfig Hill and Cefn Cribwr	• Pyle • Kenfig Hill • Cefn Cribwr	• Village Farm Industrial Estate • Pyle Swimming Pool
Cornelly	• North Cornelly • South Cornelly	• Kenfig National Nature Reserve • Sker Beach
Pencoed and Penprysg	• Pencoed	• Pencoed Business Park • Bocam Park • Pencoed Swimming Pool • Pencoed Station
Maesteg West	• Maesteg • Town Centre	• Maesteg Community Hospital • Maesteg Ewenny Road Station
Pen-y-Fai	• Pen-y-Fai	• Glanrhyd Hospital

Note: Existing Council commissioned EV chargepoint locations are highlighted in red.

Grid capacity and constraints

The identification of suitable EV chargepoint locations will also consider distances to existing electricity sub-stations and their available or spare capacity, so the costs for grid connections and cabling to the EV chargepoints can be minimised. To deliver any potential rapid EV chargepoints or Charging Hubs where suitable capacity is currently unavailable, the Council will consider requesting new sub-stations and grid enhancements. Bridgend's current substation capacity and its ability to accommodate EVs across the County is shown in Figure 10. Where only some capacity is available, we may need to consider some management of charging but we only expect this to be a reactive solution in certain cases whilst we create additional local capacity.

Figure 10 Bridgend Substation Capacity Available for EVs



Data Source: National Grid Electricity Distribution PLC EV Capacity Data[4]

[4] National Grid - EV capacity map

8. How will the chargepoints be delivered?

As the EV market has matured the range of potential operating models and funding opportunities for the deployment of public EVI has evolved. Commercial approaches adopted in the earlier stages of rollout have been refined to leverage greater private investment and reduce the risk to local authorities.

There are many variations to reflect the unique requirements of each local authority, taking into account socioeconomic and geographical challenges. Key differentials in the various commercial models focus on who owns it, who operates it, who is responsible for operation and maintenance costs, and who benefits and how. The table below outlined the five most common models. We as a Council are currently considering the potential delivery models that are available, with a preference towards the land lease model. Each delivery model comes with its own individual strengths and weaknesses, with risk apportionment distributed differently across each option. A careful balance is required between the opportunity to generate revenue for Bridgend and the potential risks and other commercial considerations. A full list of advantages and disadvantages for each option is included in Appendix E.

Delivery Models	Potential Control by Bridgend County Borough Council	Potential Risk to Bridgend County Borough Council
Own & Operate: (Contractor Supply and Install only) Paid for and owned by the public sector, with capital and maintenance costs recouped from usage charges. Operations are contracted to a CPO.	**Highest**	**Highest**
Joint Venture: A joint venture between a local authority and a partner business, sharing responsibilities, risks, and benefits, will establish a new entity to own and manage the chargepoint network.	**High**	**High**
Public Private Commercial Partnership – External Operator: Capital costs are funded by the public sector, while the Charge Point Operator (CPO) covers some or all ongoing expenses in return for a share of the revenue.	**High**	**Medium**
Public Private Commercial Partnership – Concession: Capital costs are usually partially funded by the public sector, with the remaining costs covered by the Charge Point Operator (CPO). All operational costs and risks are transferred to the CPO.	**Medium**	**Low**
Land lease: All costs paid by CPO, which is granted a long-term lease/ license by the Local Authority, to allow the CPO to recover its costs.	**Low**	**Low**
TfW supply / install, LA operate: Paid for and owned by TfW, with capital and maintenance costs recouped from usage charges. Operations are carried out by LA.	**Medium**	**Low**

Current contract arrangements

For the majority of our EV chargepoints, Bridgend County Borough Council works with CCR and our chargepoint operator (Connected Kerb) to identify suitable locations to deliver new EV chargepoints across the County. CCR are responsible for the delivery of these chargepoints and for their day to day operation. For the 6 current Council commissioned EV chargepoint sites at leisure centres across the County, these have been delivered separately to the CCR chargepoints using an 'Own & Operate' contract model. Going forward, we are open to exploring a number of different contract and delivery options that deliver best value for money for the residents of Bridgend.

Funding opportunities

There are several funding schemes which can help with the rollout of EV chargepoint infrastructure. The Council have previously successfully applied for funding grants from the UK Government and Welsh Government including the Welsh Government Local Transport Fund. This has included over £75,000 for active travel improvements in Bryntirion and over £55,000 for pedestrian and cycling safety schemes over the current 2024-25 financial year. Figure 11 summarises the funding opportunities available to Bridgend County Borough Council. Details on these funding opportunities can be found in Appendix F.

Car club permits

Alongside formal funding routes local authorities can also consider car club permit funding options. For example, some local authorities have combined their parking permit process for car clubs with a commitment to secure funding for an EV chargepoint from operators (where feasible). In the London Borough of Kensington and Chelsea the Council offer a £0 permit fee to car club operators for up to three years in return for installing an EV chargepoint.

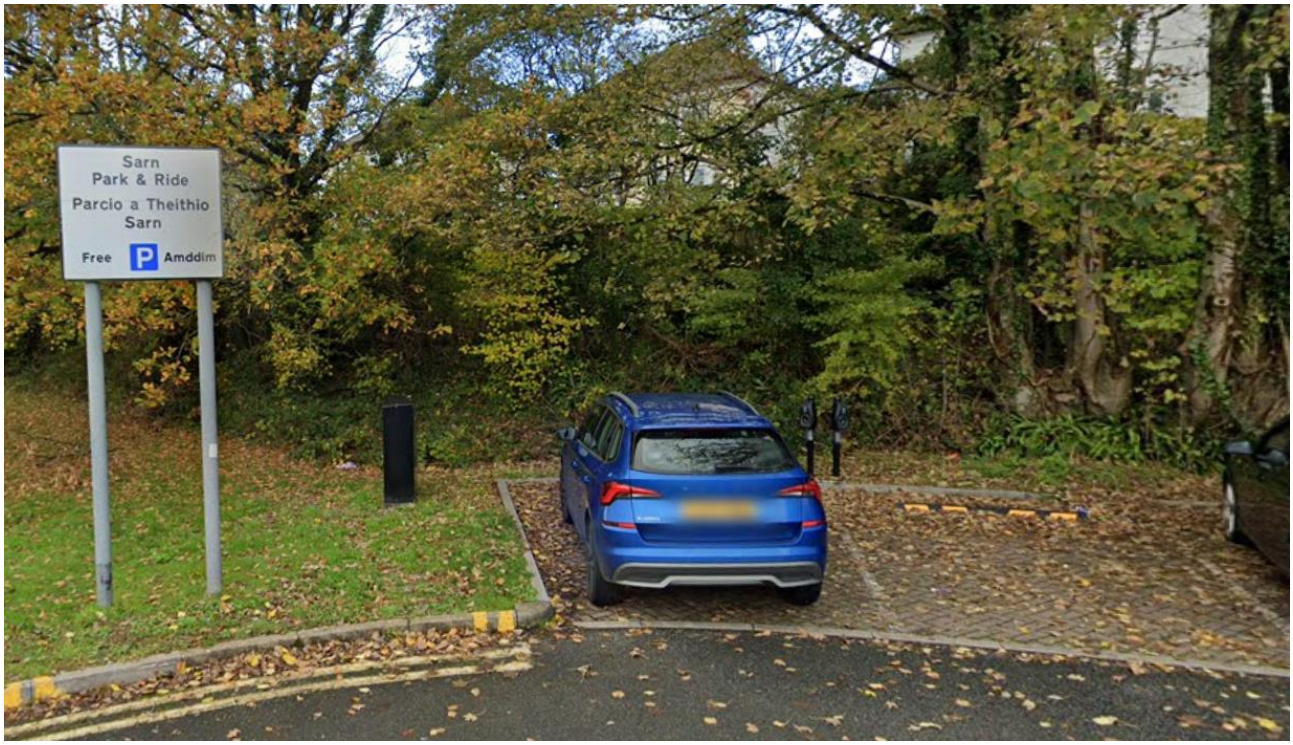
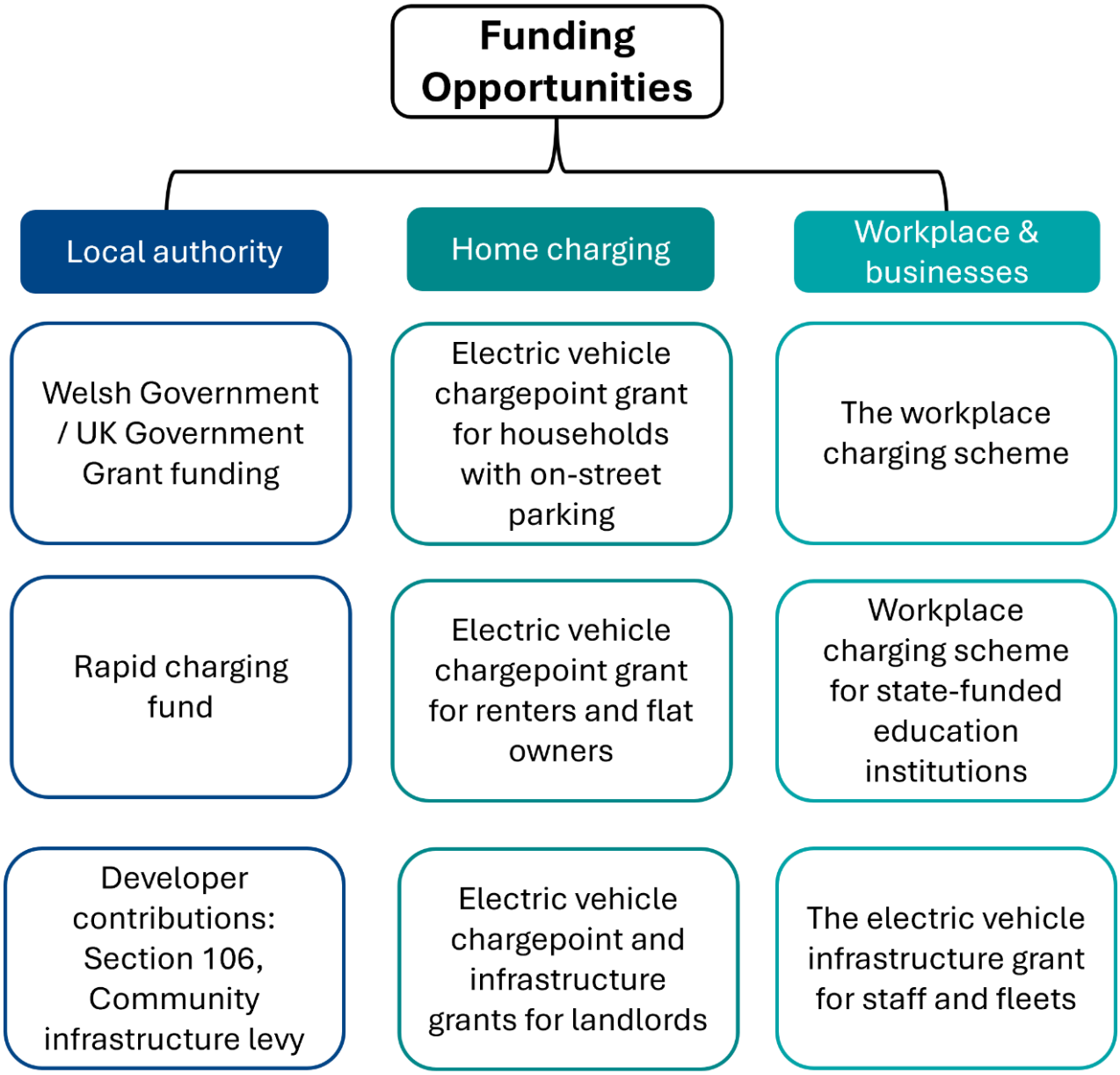


Figure 11 Funding Opportunities



9. When and how will chargepoints be delivered?

The Strategy has been prepared to help ensure Bridgend can bring the EV Strategy vision to life through delivering the required charging infrastructure to meet demand. This will enable an accelerated uptake of EVs up to 2030 and beyond. A list of actions has been identified over the following pages to support the achievement of the objectives and vision of the EV Strategy. The proposed actions provided a high-level implementation timeline and the corresponding role of the Council.

The timeframes listed in the table relate to the following years:

- **Short term** – between now and 2030
- **Medium term** – between 2030 and 2035
- **Long term** – 2035 and beyond.

	Priority Action Areas and Proposed Tasks	Bridgend County Borough Council role	Timescales
Action Area 1: Increase awareness and knowledge of EVs across the County			
1.1	Continue to use the existing Bridgend County Borough Council website as a mechanism to update, inform and highlight to residents, businesses and visitors' educational information on EV chargepoints.	Deliver	Ongoing
1.2	Support and promote local engagement activities (depending on the campaign and funding availability) to increase awareness of EVs and encourage uptake.	Deliver	Ongoing
1.3	Continue to highlight ways for the community to register expressions of interest for the installation of public EV chargepoints.	Deliver	Short
Action Area 2: Develop a network of public chargepoints that achieve appropriate levels of coverage			
2.1	Develop a prioritised roll-out plan for the procurement of EV chargepoints across Bridgend County Borough Councils' estate (such as Council car parks, community facilities and housing estates) based on underlying demand and utilisation data from existing chargepoints.	Deliver	Short/mid
2.2	Undertake a refinement of proposed locations for chargepoints, building on demand modelling findings	Deliver	Short/mid
2.3	Undertake design guide development with Bridgend planning and highways teams, to ensure a joined up approach where the most appropriate types of public chargepoints are identified for different situations. This will factor for heritage / environment sensitive locations. Options for a residents' tariff will be considered within this.	Deliver	Short/mid
2.4	Work with stakeholders to add public chargepoints to third-party land e.g. large trip attracting sites such as Bridgend Designer Outlet, retail areas and leisure facilities	Engage	Short
2.5	Install more public EV charging stations at popular tourist destinations, hotels, and key locations such as parks and beaches.	Deliver	Mid/long
Action Area 3: Ensure the EV chargepoint network is inclusive, reliable and accessible.			
3.1	Engage with Distribution Network Operators (DNOs) to identify rural areas with suitable grid capacity connections and understand where the Council may anticipate high upgrade costs.	Engage	Short
3.2	Facilitate peer-to-peer community charging schemes which allows residents with private home chargepoints to share these with other drivers.	Deliver	Mid/long
3.3	Where possible, continue to install charging hubs in car parks for residents which can serve EV drivers without access to off-street parking.	Deliver	Mid/long
3.4	Ensure contactless payments across all chargepoints over 7kW.	Deliver	Mid/long

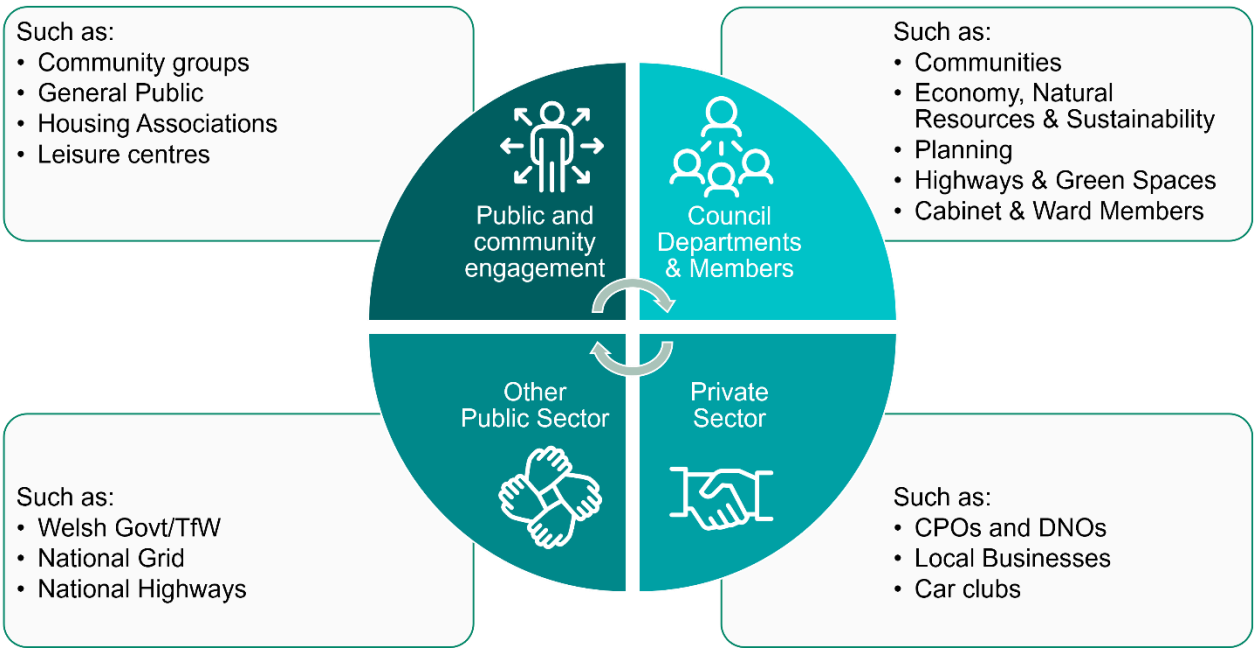
3.5	Ensure all new chargepoints meet the accessibility standards outlined in PAS 1899:2022 (or updated guidance if superceded) where possible based on location and space availability.	Deliver	Mid/long
Action Area 4: Develop an EV chargepoint network which is sustainable economically, technically and fairly priced for users,			
4.1	Explore funding models that allow for consistency in fair pricing across Bridgend County Borough Council commissioned chargers.	Engage/deliver	Short/mid
4.2	Identify a funding and on-going commercial model with chargepoint operators that ensures a fair roll out of future EV chargepoint sites across the County that best serves the residents and visitors of Bridgend.	Engage/deliver	Short/mid
4.3	As new contractual arrangements are required, consider procuring a public-private partnership(s) with CPOs which allow the cross-subsidisation of profitable sites in urban areas with less profitable sites in rural locations, to achieve more equal access to chargepoints overall.	Deliver	Short/mid
4.4	Explore and create opportunities with the private sector to deliver chargepoints without using public funds.	Engage/deliver	Short/mid
4.5	Investigate offering discounts during off-peak hours to make charging more affordable for users.	Influence	Short/mid
Action Area 5: Facilitate a transition to EVs for both private and commercial users while encouraging walking and cycling reducing car ownership and car mode share.			
5.1	Develop mobility hubs where suitable location can be found to allow for strategic areas where individuals and businesses can charge EVs and utilise active travel and public transport as part of their journey to reduce vehicle miles driven.	Deliver	Mid/long
5.2	Investigate introducing car clubs with electric vehicles at appropriate sites to support residents to reduce car trips and car ownership.	Deliver	Mid/long
5.3	When developing new infrastructure and settlements, we will ensure active travel and public accessibility is jointly considered with the provision of EV charging to introduce habits of not requiring a vehicle for every journey early on.	Influence	Short/mid

10. What happens next?

Public consultation and strategy delivery

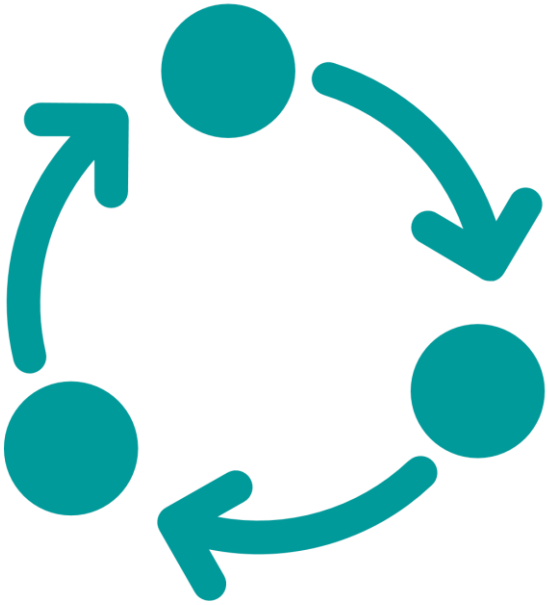
To ensure our EV strategy aligns with the needs of the community, we will be conducting a public consultation. This will provide residents, businesses, and other stakeholders with the opportunity to share their insights and feedback. Your input will be invaluable in shaping a strategy that meets the evolving needs of Bridgend. Additionally, we will adhere to necessary regulatory processes, such as Traffic Regulation Orders (TRO) and planning permissions, to ensure compliance and efficiency. These stakeholders will then be regularly consulted during the delivery of the strategy to ensure we can efficiently deliver EV chargepoints across the County. A summary of the individuals and groups that will be consulted is outlined in Figure 12 below.

Figure 12 Engagement and Delivery Partners



Monitoring and evaluation

Monitoring and evaluating the success of the EV transition in Bridgend will be crucial. This process will involve tracking the performance of the current scheme and integrating any lessons learned into future projects. Keeping an eye on developments elsewhere in the UK will also provide valuable insights.



The Council will implement a monitoring and evaluation plan to track how EV uptake and the roll-out of chargepoints are aligned with forecasts in this strategy and against the related actions.

The Council will continue to monitor the performance of the chargepoints it procures. Data could include chargepoint use (such as chargepoint utilisation,

number of charging sessions, energy delivered, duration of charging sessions, and chargepoint downtime).

Additionally, feedback from residents through community panels will be essential for assessing the effectiveness of the existing infrastructure and suggesting improvements. This approach will ensure the continuous enhancement of Bridgend County Borough Council's EV Network.

Measuring success

Some examples of key performance indicators that may be included to measure success are:

- Number of registered EVs in Bridgend
- Number and utilisation of Council-owned EV charging stations
- Public EV charging density (per capita or per hectare)

Bridgend will implement a comprehensive approach that includes monitoring progress, planning initiatives, engaging stakeholders, and delivering results over the short, mid, and long term. This structured framework will ensure the effective execution and continuous improvement of the EV strategy, adapting to technological advancements and evolving national policies. By maintaining a dynamic and responsive strategy, Bridgend aims to meet the needs of its residents and support the widespread adoption of EVs.

Future updates of the strategy

The adoption of EVs continues to develop at pace and as a result the EV Strategy will need to be regularly reviewed and reassessed to ensure it remains fit for purpose and continues to meet the needs and priorities of the community and the Council.

The Council will review the EV Strategy in five years (2030), to ensure it continues to consider the local needs, most up to date policies and the EV chargepoint infrastructure best practice. This will include sharing information and knowledge with neighbouring local authorities and implementing lessons learnt.

Appendix A Policy Context

National Policy and Guidance

Welsh Government declared a climate emergency in 2019, and have committed to delivery of Wales' target of net zero by 2050. Two key documents effectively initiated the policy response to the demand for EV charging in Wales. **Prosperity for All: A Low Carbon Wales** sets out how Wales would address its carbon budget obligations, naming 76 existing policies from across the Welsh Government, UK Government and the EU plus 24 proposed further measures. Five of the existing policies and four of the proposals relate to EVs and associated charging infrastructure. Around the same time, the **Economy, Infrastructure and Skills Committee** published a **draft report on EV Charging in Wales** which urged accelerated progress on a number of measures, recommending seven interventions, all of which were taken forward.

Notable amongst these were, which have been acted upon strongly by TfW in the years since the report are:

- Ensuring effective stakeholder engagement in delivery of EVCI;
- Ensure lessons learned from the Superfast Cymru broadband project are learned; and
- Maximise uptake of UK Government grants by local authorities.

Welsh Government published an **Electric Vehicle Charging Strategy in 2022**, which sets out an objective 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 builds on the Planning Policy Wales (2018) statement that we should ensure our transportation infrastructure is adaptable to future advances in innovation (e.g. electric vehicles).

The Wales EV charging strategy identifies a need for:

- A substantial increase in the number of slow, fast and rapid/ultra-rapid chargers available in Wales;
- Better quality charging, to improve user experience for electric cars and vans; and
- Working with the current regulatory framework of electricity network owners so that the needs of charging will be met in a way that is efficient for network management incorporating smart technology.

The modelling for EV charging requirement predictions set out in the Welsh Government EV strategy is based on the adoption of fully electric private vehicles from the 'Leading the Way' Future Energy Scenario, modified to account for the 2030 ban on the sale of petrol and diesel cars and vans announced by the UK Government.

It is noted that the UK government have since announced in September 2023 that new petrol and diesel cars will continue to be sold in the UK until 2035. By 2030, 80% of new cars and 70% of new vans sold by vehicle manufacturers will need to be zero emission, and 100% of all sales by 2035.

The Welsh Government EV action plan sets out a series of outcomes and actions, with attributable KPIs, to achieve the ambitions set out within the EV charging strategy including achieving an increased total charging provision, improved quality outcomes, and realise localised benefits.

The Strategic Outline Business Case for EV Charging in Wales was published in 2023 and contains a number of specific actions for the Welsh Government, Transport for Wales, local authorities and other stakeholders. It outlines the scale of investment and growth needed in EVCI and the types of commercial models available to halp facilitate their delivery. It is noted that the forecast demand for EVCI and their costs were able to be more accurately assessed than in the early market period of 2021 and indeed these SOBC forecasts remain as a benchmark against which delivery can be assessed today.

Supporting local authorities in addressing their actions are a number of bodies, including Transport for Wales who provide stakeholder engagement, particularly with commercial CPOs, as well as engagement with other organisations such as Cenex who provide various insights, forecasts and knowledge exchange activities to all Welsh LAs.

Further support for delivery in Wales is provided by the EVCI Welsh National Standards. This document remains as a key item of guidance in the delivery of EVCI in Wales, outlining in condensed form roles and responsibilities, appropriate types of charging, siting of charge points and accessibility[5], and navigating issues surrounding connections and planning.

Since 2019, local authorities have delivered over 100 projects, commercial CPOs many times more. This was supported by TfW's early interventions to ensure the most rural sites on the Strategic Road Network had rapid chargers, building on the base network to ensure 50kW charging at least every 25 miles.

The Welsh Government position on EV charging is synonymous with Central Government messaging and policy around the topic, with a targeted transition to EV being central to transport decarbonisation, removing charging infrastructure as a perceived and real barrier to EV adoption.

[5] Published and partly superseded prior to the issuance of BSI PAS1899 (2022) accessibility standards

Regional and Local Policy and Guidance

Both Cardiff Capital Region and Bridgend County Borough Council's existing policies have net-zero ambitions and sustainability embedded within them, which will support the emerging Bridgend EV strategy. CCR's emerging ULEV Strategy seeks to reduce emissions and improve charging infrastructure, with a reduction in road transport emissions of 60% by 2035 across the region targeted as part of the CCR Energy Strategy.

The Bridgend 2030 – Net Zero Carbon Strategy includes a commitment to oversee the development of a best-practice approach for ULEV technology across the Council's own fleet, staff vehicles and public EV charging. This includes a commitment to prioritise the development of an EV charging infrastructure network plan for the existing estate and includes ensuring EVs are prioritised as replacements for Council owned cars and small vans in the short term, with all conforming to ULEV standards by 2025. The strategy further outlines that the Council will also install EV charging points in new developments beyond minimum standards, and car parks will be future-proofed by installing submerged cabling infrastructure in all new car parking spaces for the provision of future charge points

Additionally, Bridgend's 2021 Local Area Energy Plan (LAEP) has a vision to support Bridgend to transition to an affordable and decarbonised energy system and demonstrates the council's commitment to facilitating EV uptake across the region. The plan identifies that the Council is committed to net zero carbon emissions across the borough by 2040 and becoming a Net Zero Council by 2030.

Appendix B NEVIS Modelling Methodology

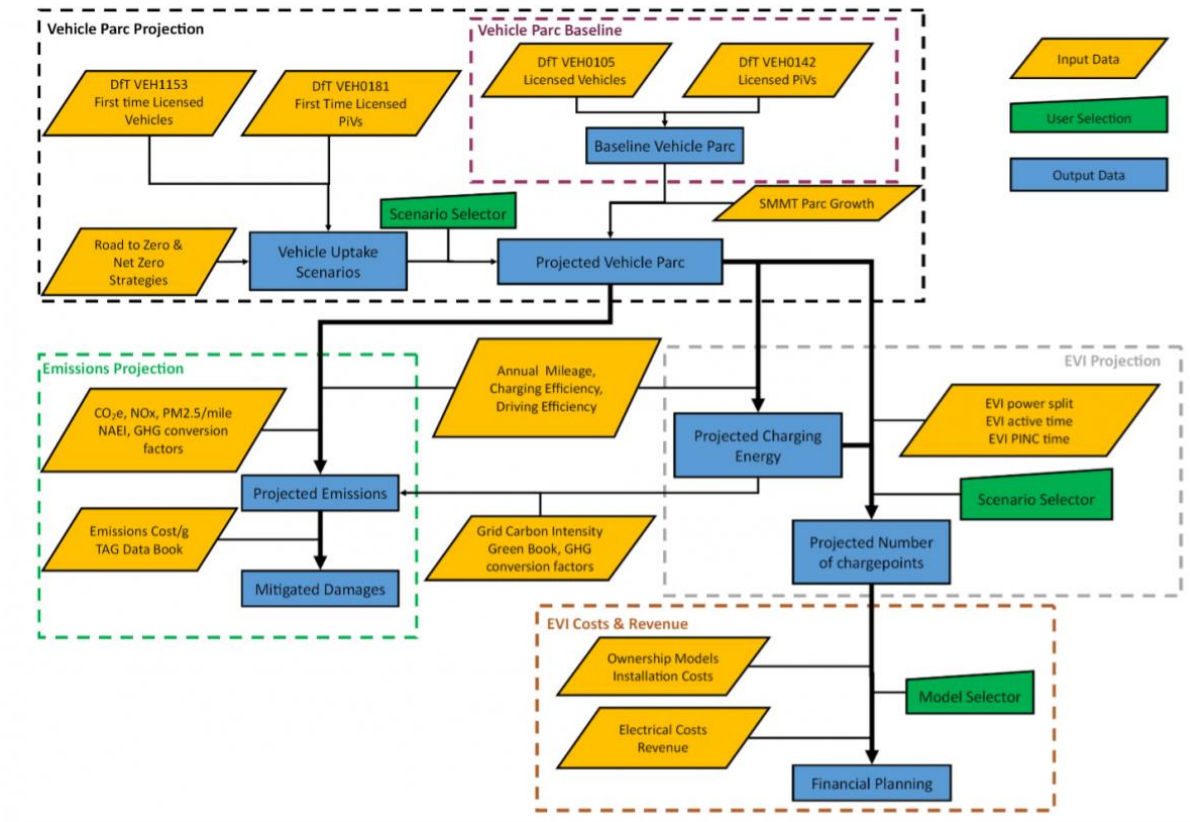
EV Forecast position methodology (adapted from NEVIS)

Utilising DfT vehicle registration and licensing data target points have been added to allow an adoption curve to be constructed from the historic data to the target. These target points are taken from existing policy positions:

- Low: ZEV mandate – Following minimum ZEV mandate BEV sales up to 80% at 2030 (70% for LCVs)
- Medium: 2035 ban – 100% of new car and LGV sales are BEV by 2035
- Fast: 2030 ban – 100% of sales are EV by 2030, and 100% BEV by 2035

In order to join the historic and target data points, an adoption curve is used for the different uptake scenarios (low, medium and fast). To determine the EV projection the total number of new vehicles was calculated as a percentage of the total vehicle parc. For reference, the average rate from 2015 to 2022 was 7% for cars and 8.8% for LGVs; this is assumed to remain constant through the model.

The model then multiplies the percentage of new vehicles by the current parc size for each new year projected. This provides the total number of new vehicles in the UK, where new EVs are split into BEV or Other but new ICE vehicles are split into Petrol, Diesel and Other ICE using an average ratio in the licensing data which remains constant in the model. Then vehicles are scrapped from the vehicle parc to obtain a target total parc size. To identify the total number of scrapped cars the SMMT vehicle parc size projections are used and LGVs using a projected growth from the government's road traffic forecasts. Any new vehicles are then added and scrapped vehicles are subtracted from the previous year's parc to determine the vehicle parc for the following year. A breakdown of the methodology including input data, user selection and output data can be found in the below figure.



EVI forecast position

The first step to determining the required EV chargepoint infrastructure to meet the projected EV demand is to identify the required energy demand projection. The NEVIS tool uses average daily vehicle mileage data and multiplies this by the driving efficiency for each vehicle type and charging efficiency is then added at 90%. This determines the charging energy requirement per vehicle per day. The model multiples this by the number of BEVs from the vehicle parc projections to determine the total energy requirement per day. Whilst Other EVs are assumed to use their ICE capabilities for 68.2% of their mileage and their remaining electric driving energy is then added to the total energy requirement.

The model then accounts for the proportional amount of charging completed at home and on the public charging network. Roughly 68% of all households in the UK have the option for private off-street parking, so it is assumed where this is the case as it is most convenient and likely the cheapest option most will charge at home. Where local on/off-street parking ability is known this value is used and where it is unknown the national average is used.

It is important to account for the circumstances where these drivers may choose to use the public charging network. To account for this, the model assumes 6.31% of all charging demand from these drives is completed on the public charging network. Therefore, the total requirement for public EV chargepoint infrastructure is based on the total charging demand of the vehicle parc minus the demand from those with off-street parking plus the 6.31% of the demand from those with off-street parking.

The EV chargepoint demand is then split between the EV chargepoint power ratings (standard, fast, rapid and ultra-rapid) according to the vehicle's capability (e.g. EV chargepoint power output <vehicle accepted max rate of charge).

It is important to note that different local authorities have opted for different approaches to public charging with some choosing to focus on residential on-street charging and others choosing to focus on rapid charging solutions. Therefore, to allow for the different approaches, the three scenarios (blend, residential and hub) are available which determine the percentage energy demand that is met by EV chargepoint infrastructure of a given power output.

Appendix C Additional EV Uptake Scenarios

Low Uptake Scenario

The forecasts for the expected vehicle types and associated number of chargepoints required in Bridgend up to 2050 under the 'low uptake[6]' scenario are shown in the figures below. These identify that an additional 15,102 EV vehicles are forecast within Bridgend by 2030, 32,240 by 2035 and 73,576 by 2050. These will require an additional 141 public chargepoints by 2030, 351 by 2035 and 804 by 2050 to serve this increase from current levels.

Figure C-1 Forecast Vehicle Types Across Bridgend by 2050 Under the 'Low Uptake' Scenario

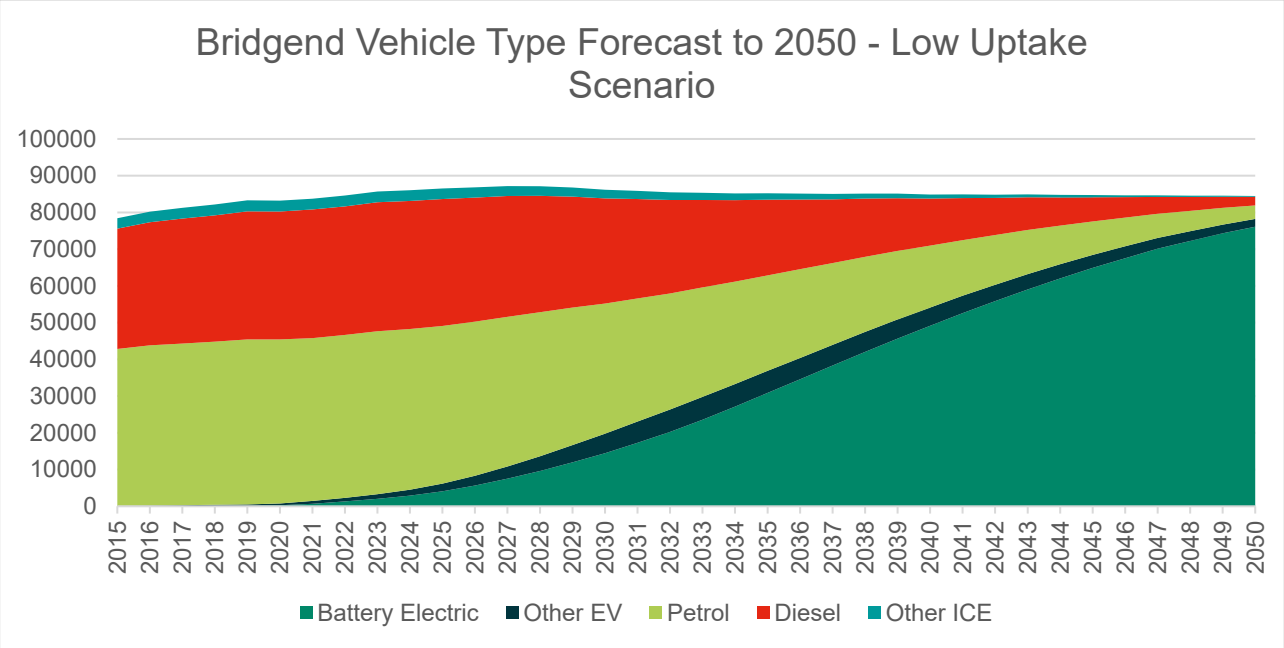
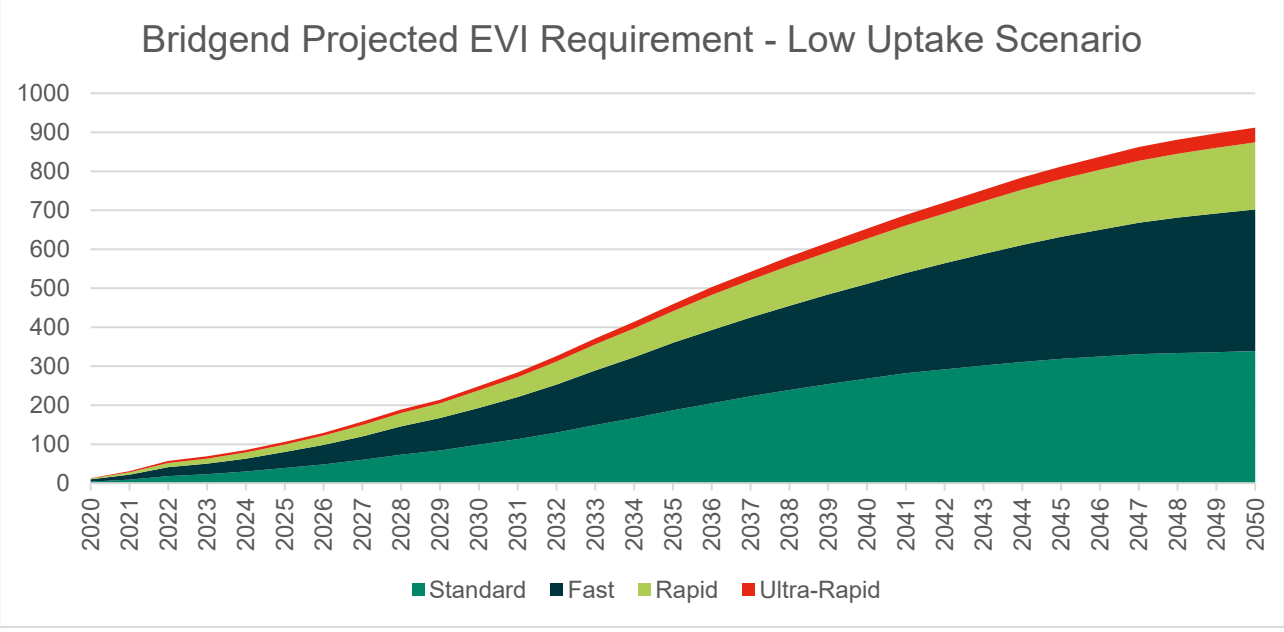


Figure C-2 Forecast Required Chargepoints Across Bridgend by 2050 Under the 'Low Uptake' Scenario



[6] Scenario is based on lower EV sales compared to the 'mid' scenario, equivalent to up to 80% of all sales by 2030 (70% for commercial vehicles).

Fast Uptake Scenario

The forecasts for the expected vehicle types and associated number of chargepoints required in Bridgend up to 2050 under the 'fast uptake[7]' scenario are shown in the figures below. These identify that an additional 25,007 EV vehicles are forecast within Bridgend by 2030, 47,876 by 2035 and 79,819 by 2050. These will require an additional 265 public chargepoints by 2030, 525 by 2035 and 868 by 2050 to serve this increase from current levels.

Figure C-3 Forecast Vehicle Types Across Bridgend by 2050 Under the 'Fast Uptake' Scenario

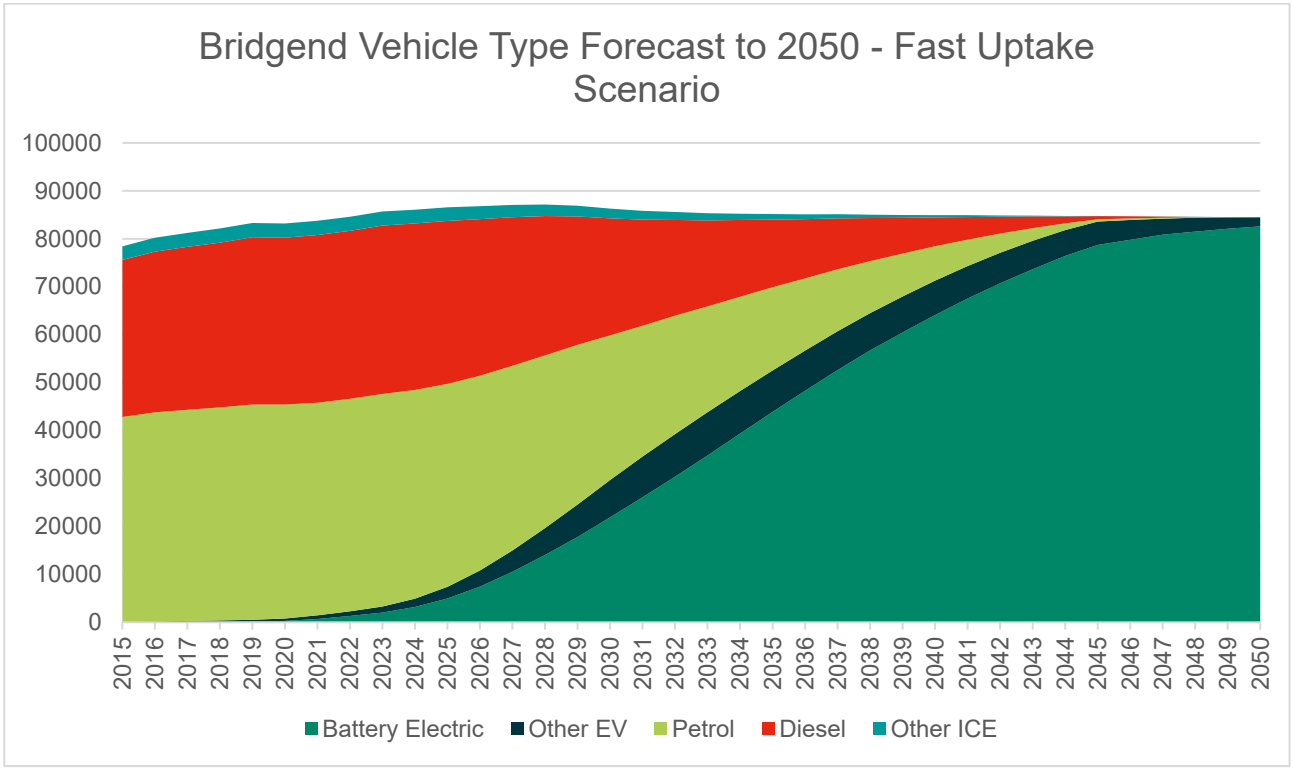
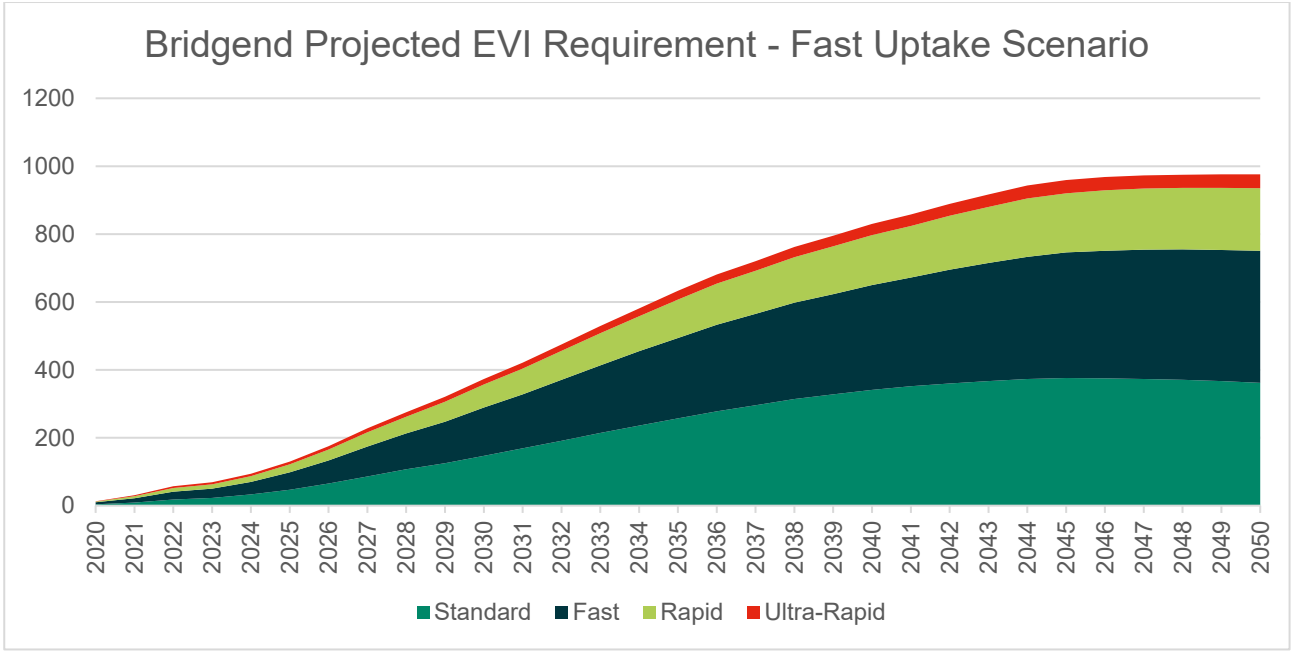
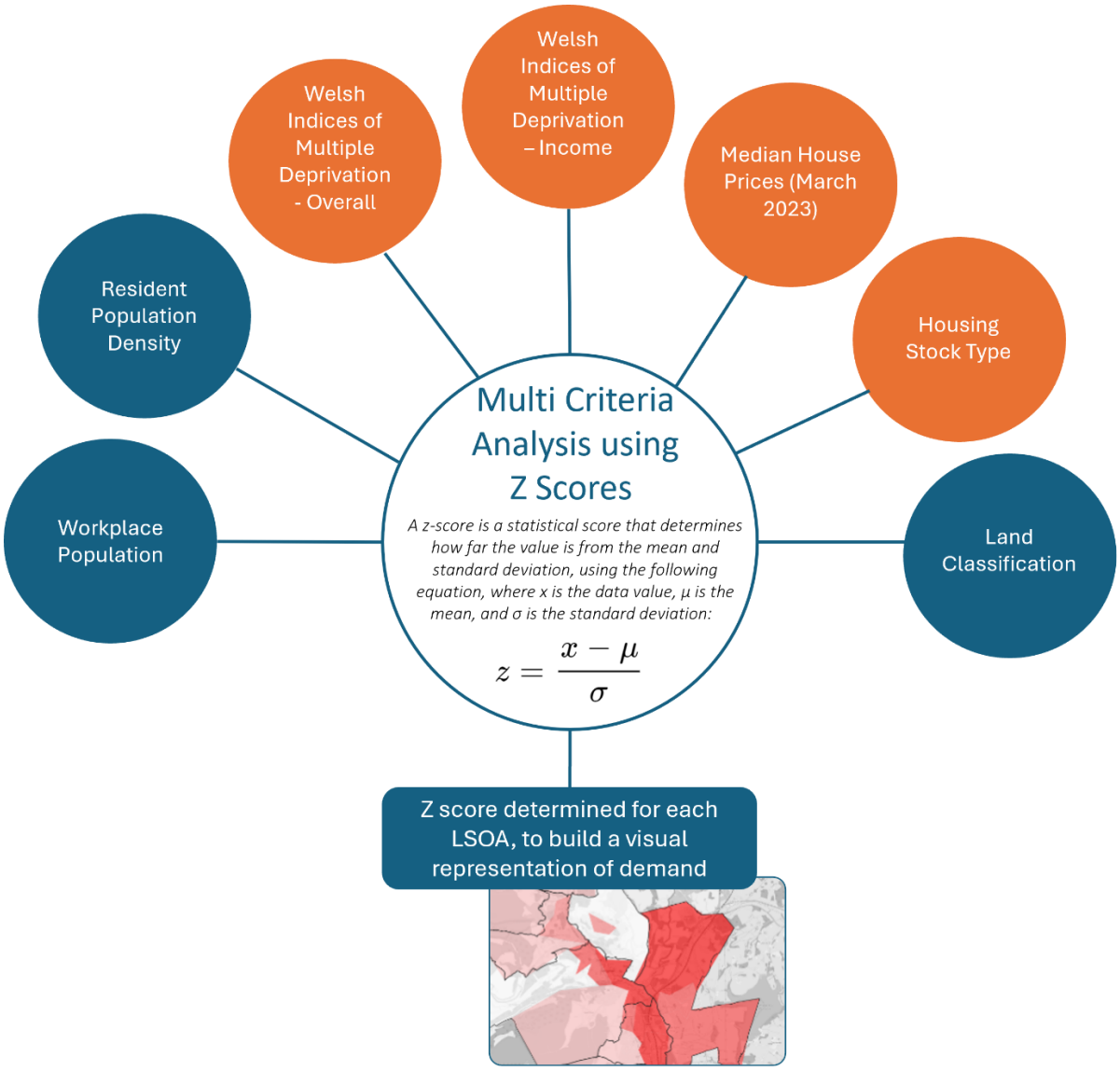


Figure C-4 Forecast Required Chargepoints Across Bridgend by 2050 Under the 'Fast Uptake' Scenario



[7] Scenario is based on a 2030 ban of ICE vehicles, where 100% of sales are EV by 2030 and 100% BEV by 2035.

Appendix D Demand Appraisal Methodology



To identify the potential EV demand, the raw indicator data dependent upon the chargepoint speed being appraised for each LSOA has been converted into a z-score as part of a multi criteria analysis framework. This method of statical analysis standardises the normal distribution of the data within each criterion to ensure a fair comparison of each Lower Super Output Area (LSOA). Z Scores above the mean have positive standard scores, while those below the mean have negative standard scores.

A total Z Score is then extracted for each LSOA which is then used to visually categorise each LSOA in terms of their demand potential for EV chargepoints. The LSOA area is converted into 1km Hexcels for display in the output map.

Appendix E Delivery Models

Delivery Models	Potential Control by Bridgend County Council	Potential Risk to Bridgend County Council	Advantages	Disadvantages
Own & Operate: (Contractor Supply and Install only) Paid for and owned by the public sector, with capital and maintenance costs recouped from usage charges. Operations are contracted to a CPO.	Highest	Highest	• Highest potential income for the local authority • Full control over locations and tariffs	• Requires significant grant funding to cover all costs • Highest risk, in terms of ongoing liabilities, maintenance costs, upgrades, and stranded assets
Joint Venture: A joint venture between a local authority and a partner business, sharing responsibilities, risks, and benefits, will establish a new entity to own and manage the chargepoint network.	High	High	• Innovative arrangement to fulfil complementary objectives • Higher levels of control over installations, tariffs and specification, compared to arms length arrangements	• Resource intensive to establish, manage, finance and monitor a new legal entity, and the delivery of the associated chargepoint network. • Exposure to investment and reputational risks
Public Private Commercial Partnership – External Operator: Capital costs are funded by the public sector, while the Charge Point Operator (CPO) covers some or all ongoing expenses in return for a share of the revenue.	High	Medium	• Reduced liability for operating costs • Retains high degree of control over chargepoint operations	• Requires significant public sector funding to cover all capital costs
Public Private Commercial Partnership – Concession: Capital costs are usually partially funded by the public sector, with the remaining costs covered by the Charge Point Operator (CPO). All operational costs and risks are transferred to the CPO.	Medium	Low	• CPO incentivised and responsible for maintenance • Reduced risk for public sector	• Reduced income share • To be commercially attractive, needs to be a relatively large number of sites so that CPO can balance risk across sites,

			• Less public sector funding needed	and long-term contracts (e.g. 10-20 years
Land lease: All costs paid by CPO, which is granted a long-term lease/ license by the Local Authority, to allow the CPO to recover its costs.	Low	Low	• Lowest risk for the local authority • Rent paid to local authority by CPO provides some guaranteed income • CPO heavily incentivised to maintain chargepoints	• Many areas are currently commercially unviable • Lowest potential income for local authorities • Least control and inability to incorporate wider goals
TfW supply / install, LA operate: Paid for and owned by TfW, with capital and maintenance costs recouped from usage charges. Operations are carried out by LA.	Medium	Low	• Reduced risk for public sector • Less public sector funding needed	• Reduced income share • Resource intensive to manage operations

Appendix F Grant Funding

Fund	Details
Grant funding from Welsh Government / UK Government	For example: Ultra Low Emission Vehicle Transformation Fund (ULEVTF). This fund supports the development of EV charging infrastructure, including rapid and ultra-rapid charging stations across Wales
Rapid Charging Fund	The £950 million **Rapid Charging Fund** will help implement a rapid charging network along the strategic road network such as motorways and major A Roads, to meet consumer demand ahead of consumer need.
Developer contributions	Local authorities can leverage funding through **the Section 106.** This provides a dedicated sum of money towards EV infrastructure as part of new development requirements.
Home charging grants	• The **Electric vehicle chargepoint grant for renters and flat owners** provides up to 75% off the cost to buy and install a socket, up to a maximum of £350. • The **Electric vehicle chargepoint grant for households with on-street parking** provides up to 75% off the cost to buy and install a socket, up to a maximum of £350 and support for residents who are also installing a cross-pavement solution. The **Electric vehicle chargepoint and infrastructure grants for landlords** provides 75% off the cost to buy and install a socket, up to a maximum of £350 per socket. Recipients can receive 200 grants per year for residential properties and a further 100 for commercial properties.
Workplace and business charging grants	• The **Workplace Charging Scheme** provides support for organisations towards the cost of installing up to 40 EV chargepoint sockets at their sites. The scheme covers up to 75% of the total costs of the purchase and installation of the EV chargepoints, capped at a maximum of £350 per socket and 40 sockets across all sites per applicant. The scheme is open to businesses, charities, public sector organisations and small accommodation businesses. • The **Workplace Charging Scheme for state-funded education institutions** provides support towards the costs of the purchase, installation and infrastructure of EV chargepoints. The scheme covered 75% off the cost to buy and install chargepoints up to a maximum of 2,500 per socket and 40 sockets across all sites including any applications made by the Workplace Charging Scheme. The **Electric vehicle infrastructure grant for staff and fleets** provides small and medium-sized business with 75% of the cost of the work of installing EV chargepoints up to £15,000. Recipients can get up to £350 per chargepoint socket installed and up to £500 per parking space enabled with supporting infrastructure for a total of five grants.