

# Lancashire and Blackburn with Darwen Electric Vehicle Infrastructure Strategy

## Electric Vehicle Infrastructure Strategy

Lancashire County Council and Blackburn with Darwen Borough Council

May 2023



## Notice

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# 1. Executive Summary

Atkins, in collaboration with Field Dynamics, was commissioned by Lancashire County Council (LCC) and Blackburn with Darwen Borough Council (BwD) to understand the need for Electric Vehicle Charging Infrastructure (EVCI) across the region and to develop an EVCI strategy that would support the needs of EV drivers and facilitate the increased adoption of Electric Vehicles (EVs).

The aim of this strategy is to provide clear direction and transparency to the deployment of electric vehicle infrastructure across Lancashire and Blackburn with Darwen. It presents a summary of the analysis work, estimates the projected future demand for EV charging infrastructure and sets out recommendations and action to deliver the vision:

To deliver appropriate, accessible, and equitable EV charging provision across Lancashire and Blackburn with Darwen, in collaboration with commercial operators, to meet the expected growth in EV usage and demand from residents, businesses and visitors without access to off-street charging.

The objectives to achieve this vision are:

- to effectively coordinate EVCI deployment activities at county and district levels and establish an EV Working Group
- to identify the optimal locations for chargepoints that recognises the local, regional, and national policies and the demographics of the county.
- to determine the best operating and funding models, and to secure government funding for public infrastructure
- to deploy 6,655 chargepoints (across the public and private sectors) throughout Lancashire and 825 chargepoints across Blackburn with Darwen by 2030, assuming no major changes to the underlying assumptions
- to implement monitoring, evaluation, and feedback activities to build a better understanding of actual charging usage and behaviour, EV uptake and user feedback, to inform regular reviews and updates to the strategy
- to increase awareness, understanding and capabilities in EVCI to support the roll-out and operational aspects

Opportunities will also be sought to reduce emissions that electric vehicles offer and mitigate the impact of EV charging infrastructure on the local and national grid. This could be achieved by encouraging and promoting the use of renewable energy for EV charging, encouraging 'off-peak' usage, and exploring technical options to manage grid demand such as battery storage and load balancing.

Engagement with Lancashire district representatives highlights the importance of a joined-up approach to EV infrastructure rollout, as well as close engagement between the districts within Lancashire. A coordinated approach across all stakeholders, including Distribution Network Operators and industry, will be beneficial to ensure charging provision is fit for purpose and located most appropriately.

Modelling of future demand estimates that by 2030, a total of 244,728 vehicles will be electric in Lancashire, representing 36% of all cars and vans.

For Lancashire, it is estimated that there will be a need for a total of 6,655 **chargepoints to support a current projected fleet<sup>1</sup> of 245,000** vehicles by 2030. For Blackburn with Darwen over the same timeframe, it is estimated that there will be a need for **825 chargepoints to support an estimated fleet of 30,000** vehicles.

<sup>1</sup> The term 'fleet' is used throughout this report to describe the total number of electric vehicles (cars and vans) that will require the use of charging infrastructure, including both private and company vehicles.

Interim projections for 2026 have also been determined, with the required infrastructure provision split by three infrastructure types:

- ‘Nearby’ - a chargepoint that is within a reasonable walking distance of a household, typically this could be around 5 minutes.
- ‘Primary’ - a chargepoint that is visited for the primary purpose of charging.
- ‘Secondary’ - a chargepoint that is visited for some other primary purpose, where charging is a secondary purpose (for example charging whilst shopping).

The modelling analysis work and projections are discussed in Section 6 of the strategy and summarised below. For Lancashire, these projections are:

Year	Nearby	Primary	Secondary	Total
2026	1576	93	491	2160
2030	4871	272	1512	6655

For Blackburn with Darwen, these projections are:

Year	Nearby	Primary	Secondary	Total
2026	189	11	59	259
2030	606	36	183	825

The exact type, number and location of chargers are subject to considerations such as charging behaviours, parking space and grid capacity available, as well as policy decisions. These aspects are considered at a high level as part of this strategy work but will require further exploration at a local level.

As this strategy is adopted it will be important to regularly review these projections to validate the assumptions, consider any future technology changes and updates to national and regional policy and the impact on EV uptake and provision of EV charging infrastructure.

## 2. Introduction

Lancashire County Council (LCC) and Blackburn with Darwen Borough Council (BwD) are taking action to address the need for electric vehicle infrastructure within the region. LCC and BwD are looking to support the demands of electric vehicle (EV) drivers, whilst providing an effective use of public funds. Atkins, with the support of Field Dynamics, was commissioned to support this activity by investigating the context, engaging with district representatives, and conducting a demand modelling exercise to develop an electric vehicle charging infrastructure (EVCI) strategy that gives clear direction and transparency to the deployment of electric vehicle infrastructure across Lancashire and Blackburn with Darwen. The project was split into two work packages, with this report following the same structure:

### Work Package 1 - Background Context

- **Rapid Evidence Review**

This focused on understanding the context in which this strategy sits. A literature review, focusing on UK, regional and local policies and strategies, was conducted to provide an understanding of which targets, aims and objectives the strategy would need to support.

- **District Engagement**

Engagement with district representatives was conducted. This took the form of three workshops and a follow-up survey. Such engagement enabled the districts to input their priorities into the strategy and demand-zoning activities whilst also allowing the project team to understand the predisposition of different districts to adoption of EVs.

### Work Package 2 - Demand Modelling

This involved conducting a demand modelling exercise into the future charging provision, conducted by Field Dynamics. This work involved the first three stages of the Field Dynamics JumpStart process. JumpStart is a data driven, structured and proven approach that builds an evidence foundation specific to regional needs. It progresses through several stages where key national data sets are adapted around the needs of an authority. The outputs are then combined and presented in such a manner that they can be used for future analysis, including comparison with other forecasting tools, such as Transport for the North's EV Charging Infrastructure Framework and the Cenex National EV Insights and Strategy (NEVIS) tool.

The three stages of the JumpStart process used are as follows:

- **Planning Horizon**

A Planning Horizon provides the point in time and size of the total EV fleet to plan for. It is established by selecting an adoption curve and a date along that curve from which an adoption rate can be read and expected EV fleet size predicted. The Planning Horizon provides a number of benefits including:

- A common goal to focus on
- A common forecast for multiple projects
- A substantive research point to aid stakeholder engagement
- A reference point to compare evolving behaviours

- **Scale of Challenge**

Having established a predicted EV fleet size, the next step is to understand the size of the public charging infrastructure required to support that fleet. Charging infrastructure for large commercial vehicles has not been considered. Without mainstream adoption, it is impossible to accurately predict the shape of future infrastructure, but it is possible to shape a Scale of Challenge. This Scale of Challenge provides perspective and context for short to medium term investment decisions.

- **Demand Zoning**

Residents that have off-street parking and can install a home charger will be far less reliant on any public chargers than those that cannot. Therefore, it is beneficial to zone a region based on need and access. Demand zoning does this and splits the region into 5 zone types. Evidence based zoning enables the prioritisation of investment based on clear robust data and evidence those decisions clearly

to various stakeholders. The zoning identifies the location of different demand profiles but acknowledges that supply may be sited outside of these zones.

## 3. Background Context

This section provides the background policy and strategy context, supplemented with the engagement of Lancashire district representatives to understand the landscape from a qualitative perspective.

### 3.1 Policy Context

National, regional and local documents have been considered and reviewed to highlight any policies or objectives that could impact the development of this strategy.

The policy documents that have been reviewed fall into three categories, as follows:

- UK-wide – Policies or relevant documents that apply to the whole of the UK (unless otherwise specified), including those published by the UK Government;
- Regional – Policies or relevant documents that apply to the North of England only; and
- Local – Policies or relevant documents published by local authorities or councils in Lancashire.

#### 3.1.1. National

At UK level, there are key policy, guidance and activities that will impact the deployment of EVCI within Lancashire (the area covered by the districts described in Section 4.2) and Blackburn with Darwen. These include the following:

- As described in '[Taking Charge: the electric vehicle infrastructure strategy](#)', published by UK Government, the sale of new petrol and diesel cars and vans will be phased out by 2030. As such, local governments will be asked to develop chargepoint strategies and scale up the rollout of public chargepoints on local streets. In addition, the Government will regulate and provide guidance to make sure chargepoints are reliable and easy to use. The private sector will also have a critical role to play regarding the provision of infrastructure.
- [Decarbonising Transport: A Better, Greener Britain](#) (Department for Transport, 2021) sets out the strategic objectives and commitments designed to cut carbon from transport. Accelerating a modal shift to public transport and active travel is the top priority. Increasing the share of journeys undertaken by walking, cycling, or public transport may influence EV take-up and therefore the number of chargepoints required.
- The process and cost of connecting charging infrastructure to the electricity network can be a major barrier to roll-out. The Government is working with Ofgem and others to make getting new connections as timely, efficient, and affordable as possible. Through its '[Access and Forward-Looking Charges Review](#)' (published May 2022), Ofgem is consulting on whether more, or all, of the costs associated with a new connection could be socialised across energy bill payers, reducing the costs for the connecting customers.
- The Energy Saving Trust [Local Government Support Programme](#) is funded by the Department for Transport to assist local authorities, share knowledge and expertise and directly support the development of more EV infrastructure delivery plans and applications to the on-street scheme.
- Building on the £1.9 billion from the Spending Review 2020, the Government committed an additional £620 million to support the transition to electric vehicles through vehicle and charging infrastructure grants. The funding will support the rollout of charging infrastructure, with a particular focus on local on-street residential charging, and targeted plug-in vehicle grants. Government funding available is described further in Section 6.6.

National policy will be kept under review to ensure change is taken into account in the delivery of this strategy and action plan.

#### 3.1.2. Regional

There are objectives issued specifically for the North. Some of the overarching goals of Transport for the North [2] are as follows:

- A 56% reduction in emissions from 2018 to 2030, achieved mostly through mode-shift and demand reduction;

- A 96% reduction in emissions from 2018 to 2040, reflecting longer-term decarbonisation measures, such as a high proportion of zero-emissions vehicles in the vehicle fleet;
- Cut carbon emissions to almost zero by 2045 from surface transport in the North. This is a challenging benchmark reflecting the ambition of the partners and their desire to push further and faster than current national policy; and
- A total carbon budget of approximately 290 mega-tonnes of CO<sub>2</sub> from 2018 to 2050.

Additionally, the TfN EV Charging Infrastructure Framework seeks to develop an understanding of charging need by use of regional analytics. The framework's evidence base provides clarity regarding the scale and pace of implementation required across the region. Field Dynamics' modelling can be used by authorities to validate the framework through comparison of outputs.

### 3.1.3. Local

Most councils across Lancashire have agreed climate ambitions. Lancashire County Council has resolved to transition the Lancashire economy away from carbon by 2030 and Blackburn with Darwen Borough Council has declared a climate emergency and set an ambition to be net zero by 2030.

The [Lancashire Net Zero Pathways Options Report](#) provides an evidence-based assessment of Lancashire's carbon footprint and options for achieving net zero targets. The report highlights the importance of the following:

- Rapid application of identified mature technology measures and rapid ramp-up of roll-out across sectors.
- Rapid sourcing and rapid mobilisation of sufficient resources and funds to pursue targets.
- Support national roll out of Zero Emission Vehicles through roll out of well-planned and integrated charging and fuelling networks.
- Encouraging acceleration of ULEV uptake through measures including updates to public fleet requirements for suppliers, support for car clubs and corporate fleet updates, with the aim to accelerate EV uptake to the point that it is 6 months ahead of the national average by 2030 and 12 months by 2035.

Lancashire's fourth Local Transport Plan (LTP4), which is currently under preparation, will provide the basis for the county council's transport activities and programmes. LTP4 will be required to set out how the local area will deliver quantifiable carbon reductions (QCR) in transport. QCR guidance, being prepared by the Department for Transport, will help Councils to make long term, evidence-based plans for transport by considering the carbon impacts of them at the strategic planning stage. This will put sustainable forms of travel, such as walking and cycling and bus travel for longer journeys, at the forefront. Supporting the transition to EVs will also contribute to this strategic policy aim.

The policy context may change and will, therefore, be kept under review to ensure any changes are taken into account in the delivery of this strategy and action plan.

## 3.2. District Context

Lancashire is comprised of 12 districts councils, each of which have applied some degree of focus to EVCI provision. Some districts have begun installation of council-owned infrastructure via use of grant funding, whilst others have been working in collaboration with private companies to install chargepoints. District councils have generally focussed on council car parks and are now exploring their approach to wider deployment.

To facilitate a co-ordinated, joined-up approach, close engagement between the districts within Lancashire as part of the formal electric vehicle charging infrastructure rollout will be important. This could take the form of an EV Forum or Working Group and will ensure that strategies and development plans across the districts are coordinated, reducing infrastructure overlap.

## 4. Current Electric Vehicle and Charging Infrastructure Provision

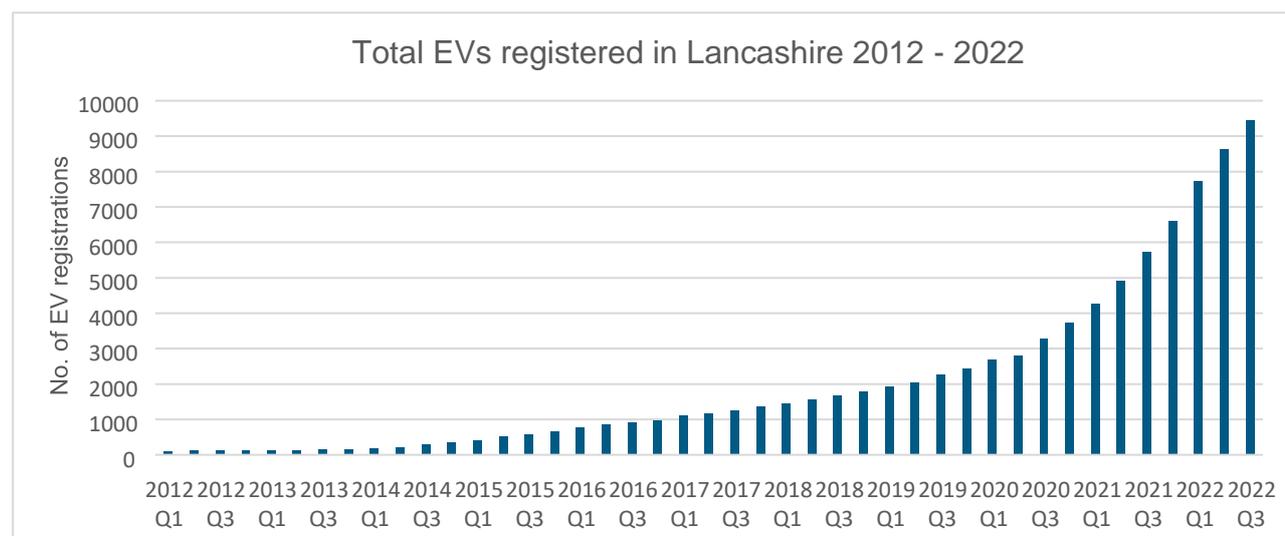
This section assesses the current regional position regarding EV uptake and associated infrastructure provision. This assessment is based on analysis of various data sources, such as those made available through the Department of Transport (DfT), the Driver and Vehicle Licensing Agency (DVLA), and the National Chargepoint Registry (NCR). It should be noted that there are known inconsistencies between the chargepoint quantity data recorded in the DfT and NCR datasets, as described subsequently. The purpose of determining the current uptake and infrastructure provision is to provide a reliable baseline from which future levels of infrastructure provision can be determined.

### 4.1 EV adoption within Lancashire and Blackburn with Darwen

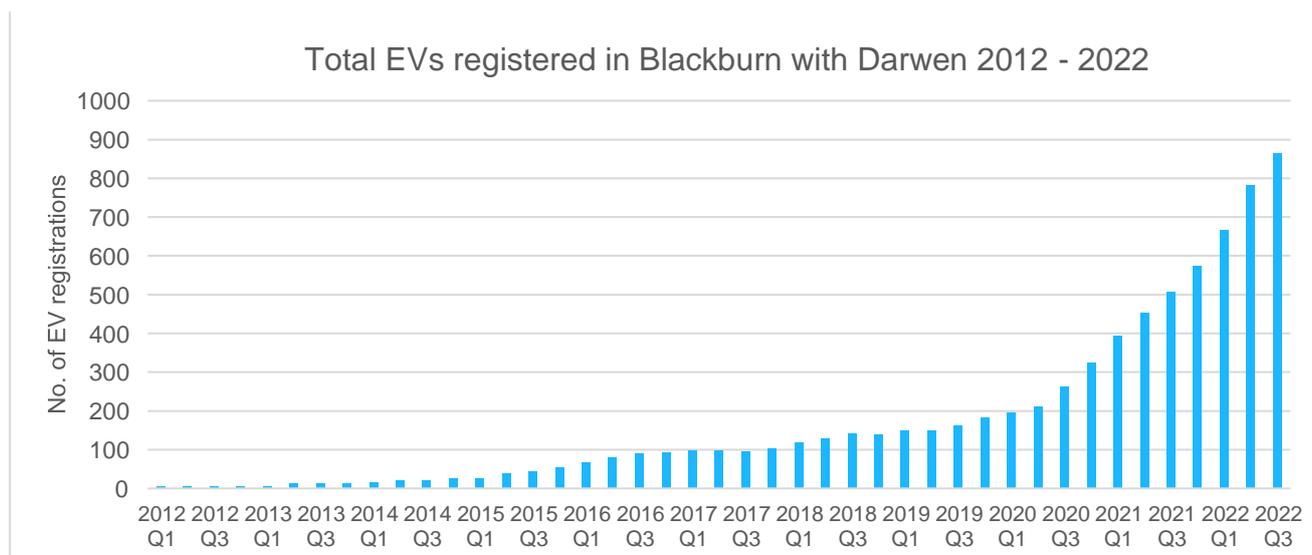
Data from the DfT and DVLA shows that:

- Lancashire had a total of 9447 EVs registered as of December 2022 (excluding buses and HGVs).
- Blackburn with Darwen had a total of 865 EVs registered as of December 2022 (excluding buses and HGVs).

EV adoption has rapidly expanded across both Lancashire and Blackburn with Darwen over the past 10 years. Figure 4-1 and Figure 4-2 show the cumulative total number of EV registrations in Lancashire and Blackburn with Darwen between 2012 and 2022 [3].



**Figure 4-1 - Electric Vehicle Registrations in Lancashire 2012-2022 [3]**



**Figure 4-2 - Electric Vehicle registrations in Blackburn with Darwen 2012-2022 [3]**

## 4.2 EV Charging Infrastructure within Lancashire and Blackburn with Darwen

Charging points in the Lancashire and Blackburn with Darwen areas have been classified by charging speed based on the following criteria:

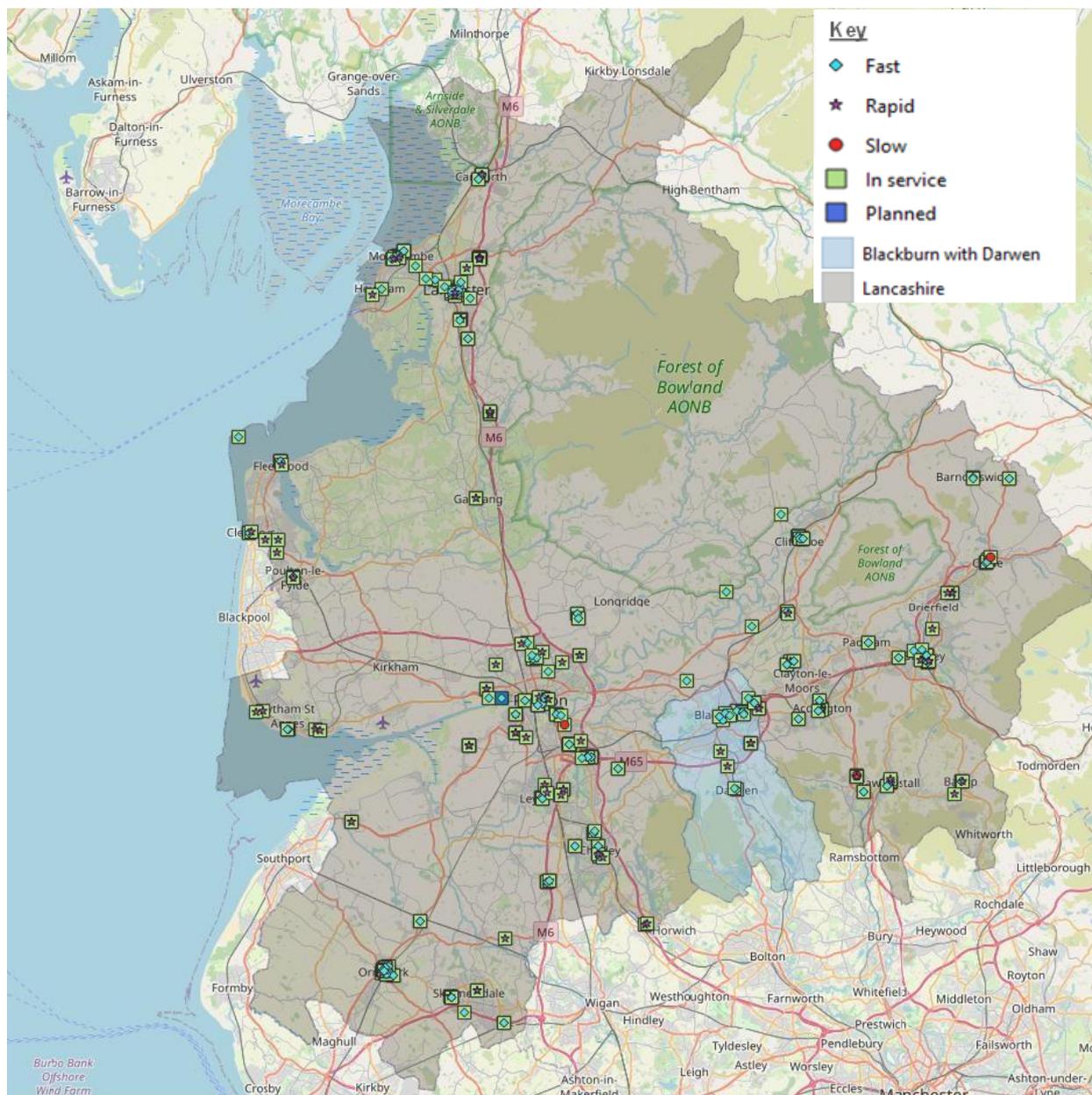
- Rapid – if at least one connector has a charging speed of >43kW;
- Fast – if at least one connector has a charging speed of >7kW and all connectors have charging speeds <43kW; and
- Slow – if all connectors have charging speeds <7kW.

Data from the DfT has been used to determine the existing provision of EV chargers in Lancashire and Blackburn with Darwen [4].

- There were a total of 497 publicly available chargers in Lancashire as of October 2022.
  - 144 of these chargers were classified as Rapid (29% of total chargers).
- There were a total of 46 publicly available chargers in Blackburn with Darwen as of October 2022.
  - 15 of these chargers were classified as Rapid (33% of total chargers).

The current EV infrastructure for Lancashire and Blackburn with Darwen has been modelled in QGIS mapping software as demonstrated in Figure 4-3. The data was obtained from the National Chargepoint Registry (NCR) on the 13 January 2023 and filtered for Lancashire and Blackburn with Darwen [5].

The boundaries for Lancashire and Blackburn with Darwen are represented by the grey and blue transparent background respectively. Each point in Figure 4-3 represents a charging point which has been categorised by charging speed (Fast, Rapid or Slow).

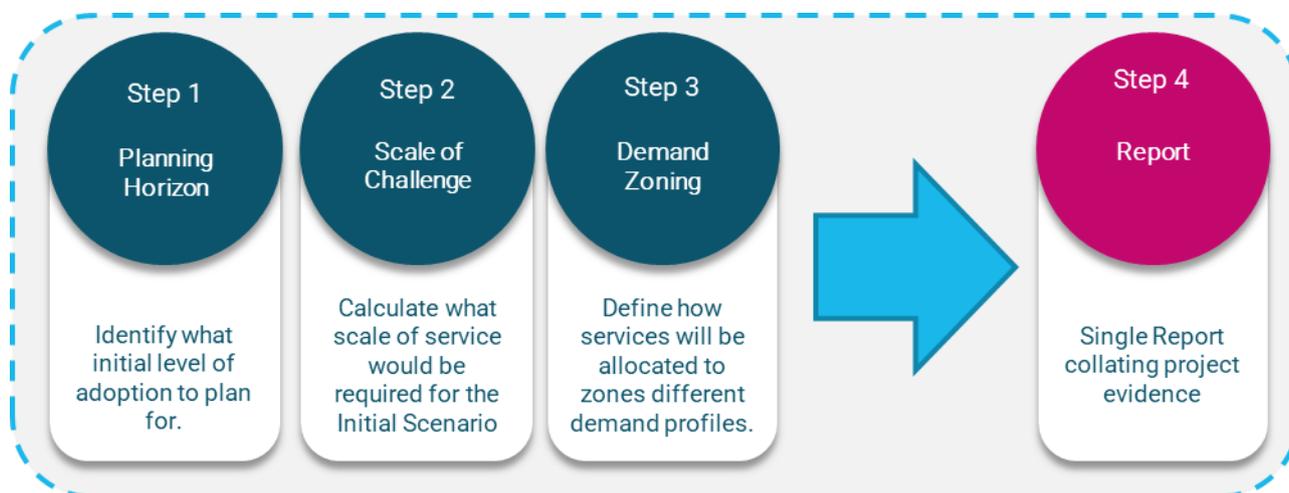


**Figure 4-3 - Existing charging infrastructure across Lancashire and Blackburn with Darwen [5]**

The NCR data, used to inform Figure 5-3, identifies fewer chargepoints than that of the data from the DfT. The DfT dataset omits chargepoint location but is more complete than the NCR in terms of total number of chargepoints installed.

## 5. Future EV Deployment

This section presents and discusses the findings of the modelling conducted for both Lancashire and Blackburn with Darwen by Field Dynamics, using its JumpStart process. JumpStart is a data driven, structured and proven approach that builds an evidence foundation specific to the needs of the local authority. It progresses through a number of steps, as shown in Figure 5-1 and described in Section 2.



**Figure 5-1** - Overview of Field Dynamics JumpStart Process

A target date of 2030 has been selected. The date has been chosen in response to the UK's commitment to phase out the sale of new petrol and diesel cars and vans, as well as Lancashire's net zero ambitions.

The analyses of Lancashire and Blackburn with Darwen have been separated into two sections. The findings for Lancashire are presented below and the Blackburn with Darwen findings are discussed in Section 5.2.

### 5.1. Lancashire Demand Analysis

This section focuses on the demand analysis conducted by Field Dynamics for Lancashire. The methodology employed includes the Planning Horizon, Scale of Challenge and Demand Zoning activities described in the introduction, as well as analysis to prioritise key deployment areas.

#### 5.1.1. Lancashire Planning Horizon

The Lancashire Planning Horizon results are shown in Table 5-1. By 2030, it is expected that 36% of the total vehicle fleet (total number of cars and vans) within the Lancashire region will be electric. This figure has been established by selecting an adoption curve as well as a date along that curve from which an adoption rate can be taken. From this, the expected number of EVs can be predicted. The adoption curve used is the National Grid 'Future Energy Scenarios – Consumer Transformation' (FES) curve, as depicted in Figure 5-2. The data used to model this curve is replenished each year and as such, it is the most up-to-date option available and is widely used. An interim projection for 2026 has also been calculated as per Figure 5-2.

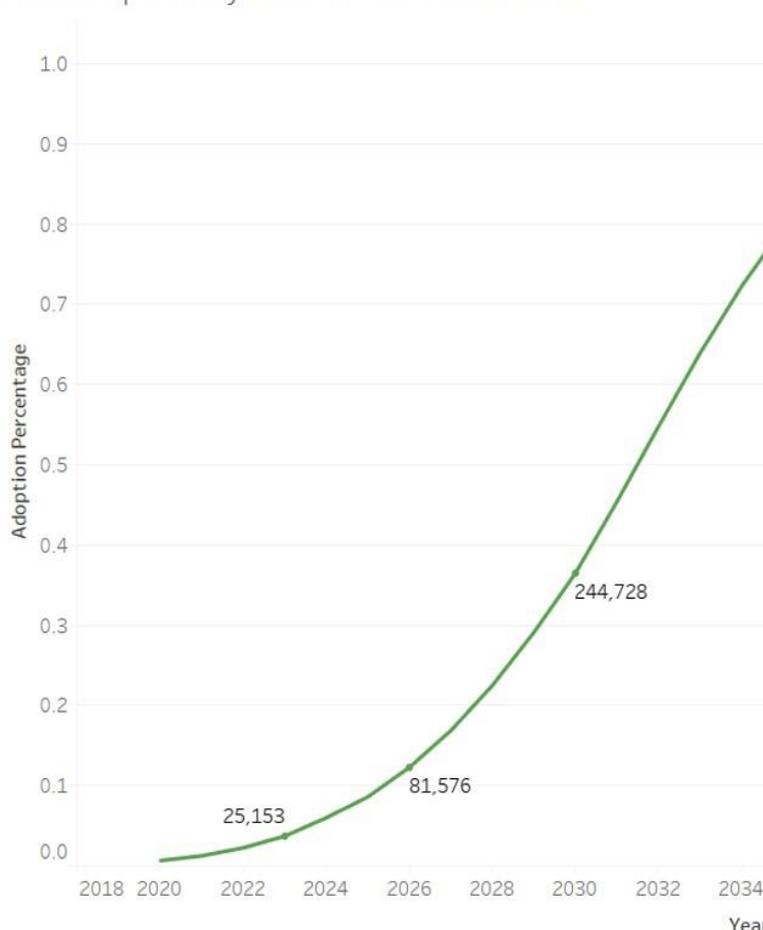
By 2030, it is estimated that 36% of the total vehicle fleet will be electric, a total of 244,728 vehicles. This compares with an estimated current adoption of 2.20% and an assumed EV fleet of 14,946 vehicles.

The baseline figures given in this section differ from those of Section 4, (current EV fleet of 9,447) due to there being no fully accurate way of determining where an EV is kept.

	%	EV Number	Total Fleet
Current Assumed Adoption	2.20	14,956	679,801
Planning Horizon	36	244,728	

**Table 5-1 - Lancashire Planning Horizon outputs for 2030**

BEV Adoption by Year -FES CT Lancashire

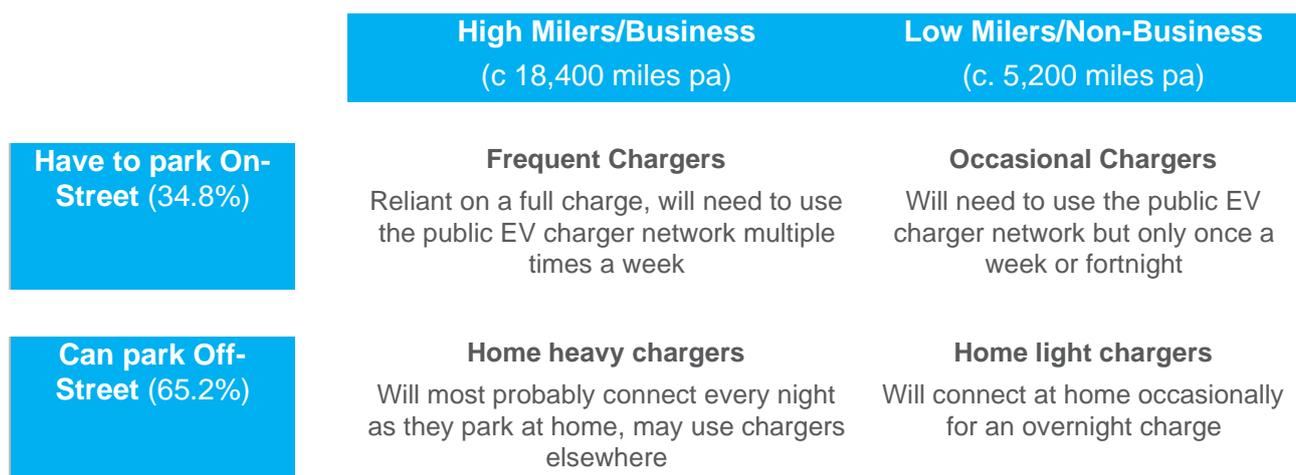


**Figure 5-2 - National Grid FES curve with forecasts for 2023, 2026 and 2030 for Lancashire**

### 5.1.2. Lancashire Scale of Challenge

Having established a predicted EV fleet size for the target date of 2030, the corresponding level of demand for public charging infrastructure can be determined. It is impossible to accurately predict required levels of future infrastructure, however, a Scale of Challenge curve can be selected to provide perspective and context for short to medium term investment decisions.

Eight pre-determined personas, developed by Field Dynamics, were used for the purpose of identifying representative charging behaviours. These personas reflect different types of driver (business, non-business), access to off-street charging and different charging behaviours. They enable an estimate of the weekly total charging requirements in kWh to be determined. These can be condensed down into four user categories based on high or low mileage and ability to park off-street or on-street (see Figure 5-3).



**Figure 5-3** - Overview of charging behaviours

The personas were created to represent the most likely charging behaviours. Households with off-street parking are likely to adopt faster than those without, who find EV ownership less convenient. It is also reasonable to assume that those reliant on high mileages (around 1 in 6 vehicles) are likely to adopt at a slower rate than those who drive less miles. The process of remote ‘refuelling’ for petrol versus electric is likely to deter many high mileage drivers.

For each persona, charging profiles were developed, defining percentage share of off-street and on-street parking and the type and frequency of charging they would require. The total fleet was broken down into the percentage represented by each persona. These personas were then used to model the total number and type of chargepoint they would most likely require, taking into account business and personal travel. The chargepoint types are defined as:

- Nearby – a chargepoint within a reasonable walking distance of a household, typically this could be around 5 minutes
- Primary – a chargepoint that is visited for the primary purpose of charging
- Secondary – a chargepoint that is visited for some other primary purpose where charging is a secondary purpose (for example, charging whilst shopping).

### 5.1.3. Lancashire Charger Requirements

To determine the required infrastructure to be deployed, the number, blend, and type of chargepoints needed to achieve the scale of challenge was assessed.

The resulting analysis (see Table 5-2) provides a breakdown of required chargers across each persona in order to meet expected demand by 2030.

<b>Driver Type</b>	<b>Nearby</b>	<b>Primary</b>	<b>Secondary</b>
<b>On-street business driver</b>	3247	30	149
<b>On-street non-business driver</b>	1624	134	1201
<b>Off-street business driver</b>	0	30	45
<b>Off street non-business driver</b>	0	78	117
<b>Total</b>	<b>4871</b>	<b>272</b>	<b>1512</b>
	<b>6,655</b>		

**Table 5-2** - Lancashire breakdown of required chargepoints across each persona

Using the interim adoption projections as per Figure 5-2, a projection for 2026 has also been calculated for Lancashire as follows:

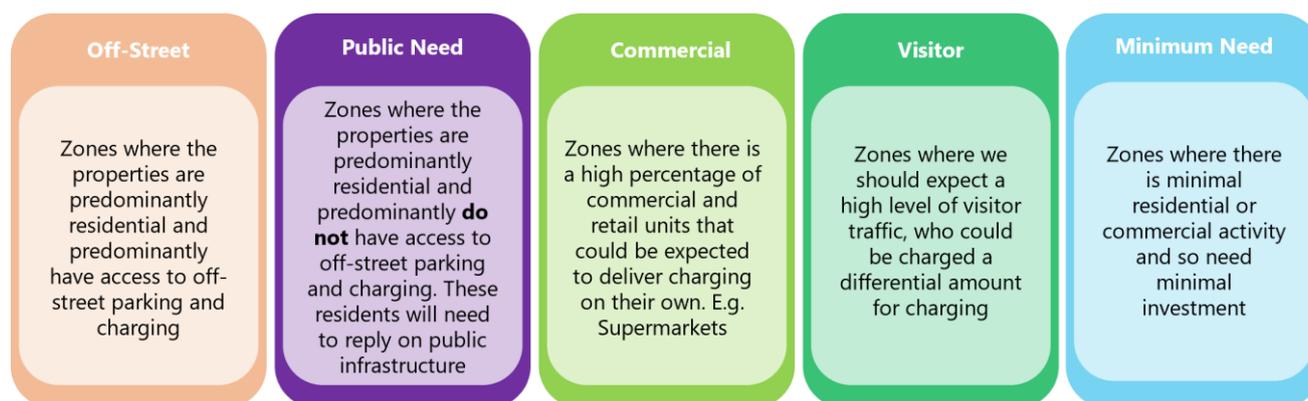
Year	Nearby	Primary	Secondary	Total
2026	1576	93	491	2160

**Table 5-3 - Projected infrastructure provision for Lancashire for 2026**

It should be noted that ‘Nearby’ provision refers to the number of chargepoints that are required in residential areas. As such, slow chargers are recommended for this use. Conversely, ‘Primary’ and ‘Secondary’ refer to provision required at destinations, such as in Commercial and Visitor zones. As such, fast chargers of 22kW+ are recommended for this use.

### 5.1.4. Lancashire Demand Zoning

With the overall infrastructure requirements projected, this section undertakes analysis of the data from a geographical perspective to identify the locational needs for EVCI. To achieve this, Field Dynamics has undertaken the demand zoning exercise for Lancashire. These zones have been categorised as Off-Street, Public Need, Commercial, Visitor and Minimum need, as described in Figure 5-4. The nature of this algorithm means that urban centres dominate the results of the demand zoning.



**Figure 5-4 - Zone type descriptions**

The final map of zones is shown in Figure 5-5 and GIS (Geographic Information System) data has been provided for each district. As is evident, the Lancashire region is one of significant rurality as indicated by the blue zones. As such, large areas have been classified as Minimum Need zones (light blue) where there is minimal residential or commercial activity, however, the needs of these areas will need to be considered to ensure they have accessible and equitable provision.

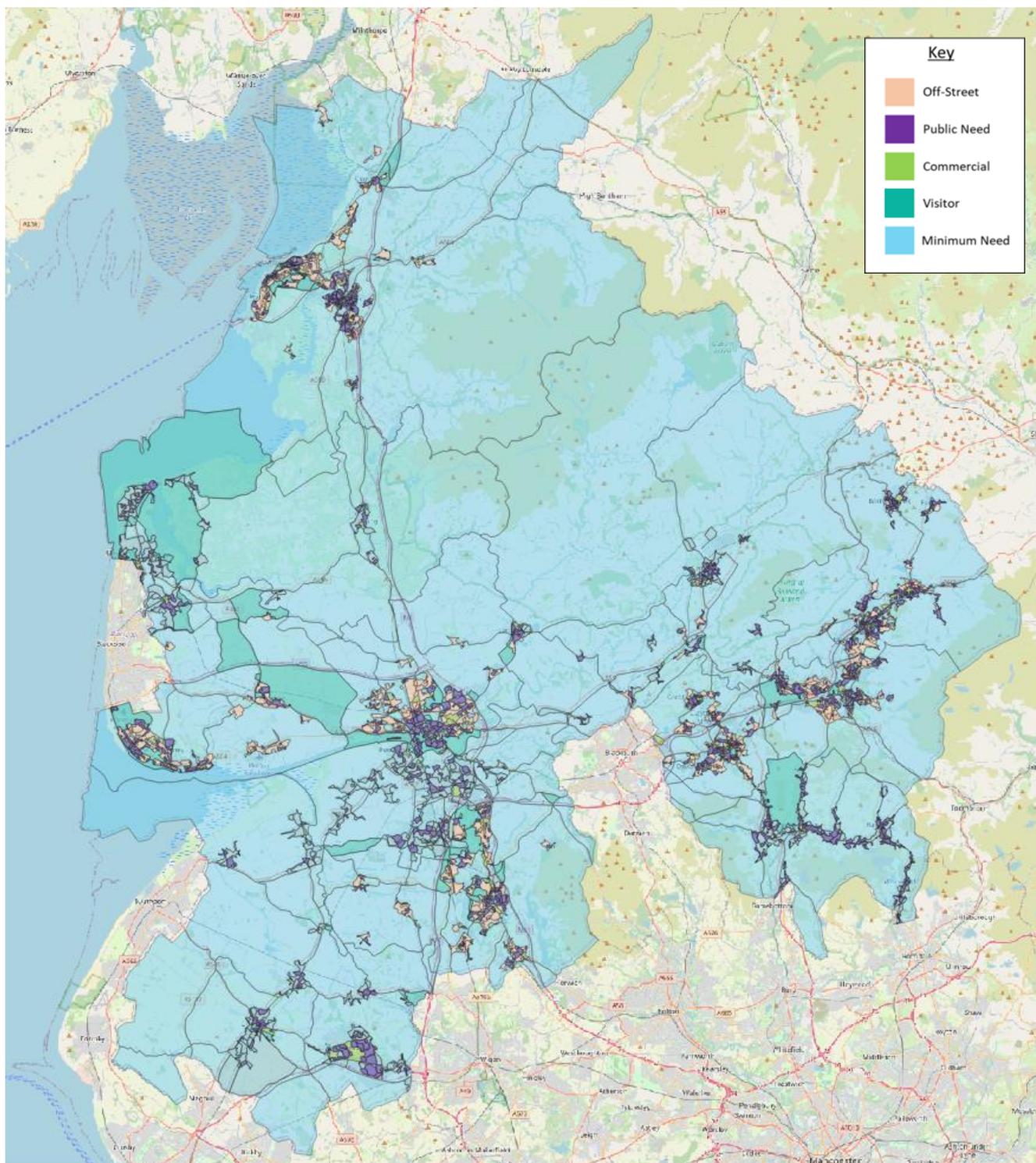


Figure 5-5 - Lancashire zoning map.

### 5.1.5. Lancashire Analysis of Expected Additional Charger Provision

Areas of the County have been categorised as those with off-street parking and those with limited or without off-street parking. Zones have been determined accordingly and those with the greatest number of households without off-street parking identified. Prioritising infrastructure provision by the total number of on-street households favours urban centres, due to the number of homes involved. More detailed planning work will be required to consider socio-economic and demographic factors, as well as practical considerations to identify

specific locations. It should be noted that there are a number of more rural areas, identified as Minimum-Need zones, in which all households are without off-street parking. The needs of these areas as well as visitor / destination charging will need to be considered alongside the prioritisation of on-street provision in urban areas to ensure there is adequate provision.

Requirements for visitor / destination charging will also need to be considered alongside the prioritisation of on-street provision in urban areas to ensure there is adequate provision to attract visitors.

## 5.2. Blackburn with Darwen Demand Analysis

This section focuses on the demand analysis conducted by Field Dynamics for Blackburn with Darwen Borough. The methodology employed includes the Planning Horizon, Scale of Challenge and Demand Zoning activities, as well as analysis conducted by Atkins to prioritise key deployment areas.

### 5.2.1. Blackburn with Darwen Planning Horizon

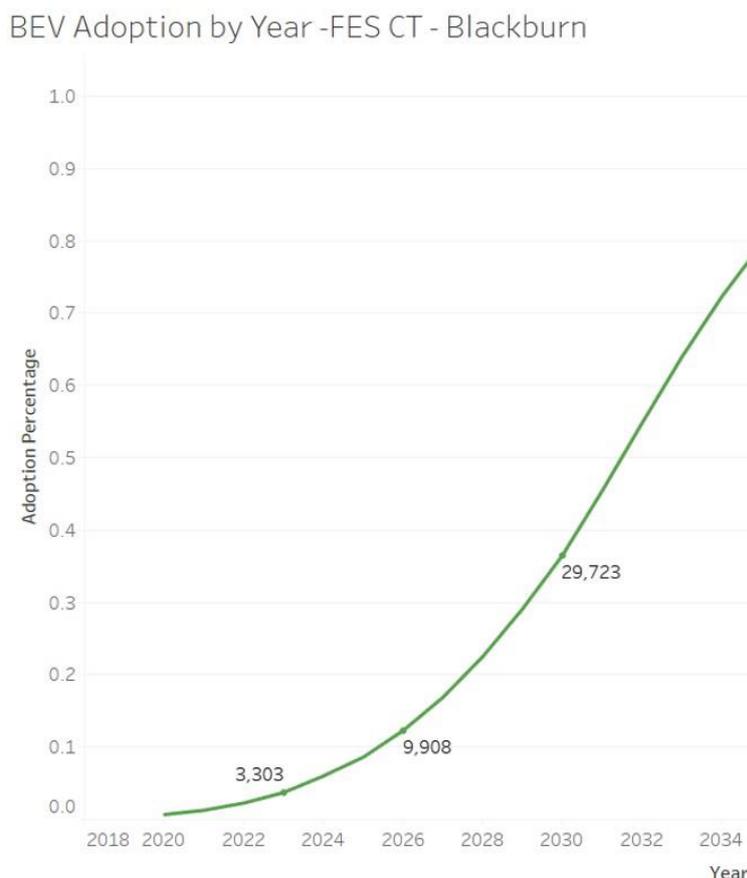
By 2030, it is estimated that 36% of the total vehicle fleet will be electric, a total of 29,723 vehicles. This compares with an estimated current adoption of 2.20% and an assumed EV fleet of 1,816 vehicles. This is shown in Table 5-4.

The adoption curve used is the National Grid '*Future Energy Scenarios – Consumer Transformation*' curve, as depicted in Figure 5-6. The data used to model this curve is replenished each year and as such, it is the most up-to-date option available and widely used. An interim projection for 2026 has also been calculated and is shown in Figure 5-6.

The baseline figures given in this section differ from those of Section 4, due to there being no fully accurate way of determining where an EV is kept.

	%	EV Number	Total Fleet
Current Assumed Adoption	2.20	1,816	82,563
Planning Horizon	36	29,723	

**Table 5-4 - Blackburn with Darwen Planning Horizon outputs for 2030**



**Figure 5-6 - National Grid FES curve with forecasts for 2023, 2026 and 2030**

### 5.2.2. Blackburn with Darwen Scale of Challenge

As per the Lancashire Scale of Challenge, personas were used for the purpose of identifying representative charging profiles based on the behaviours described in Figure 5-3.

Households with off-street parking are likely to adopt faster than those without, who find EV ownership less convenient. It is also reasonable to assume that those reliant on high mileages (around 1 in 6 vehicles) are likely to adopt at a slower rate than those who drive less miles. The process of remote 'refuelling' for petrol vs electric is likely to deter many high mileage drivers.

For each persona, charging profiles were developed, defining percentage share of off-street and on-street parking and the type and frequency of charging they would require.

Similar to Lancashire, the total fleet was broken down into the percentage represented by each persona. This was then used to model the total number and type of chargepoints, taking into account business and personal travel. The chargepoint types are defined as:

- Nearby – a chargepoint that is within a reasonable walking distance of a household, typically 5 minutes
- Primary – a chargepoint that is visited for the primary purpose of charging
- Secondary – a chargepoint that is visited for some other primary purpose, charging is a secondary purpose (for example, charging whilst shopping)

### 5.2.3. Blackburn with Darwen Charger Requirements

To determine the required infrastructure to be deployed, the number, blend and type of chargepoints needed to achieve the scale of challenge was assessed. The resulting analysis (see Table 5-5) provides a breakdown of projected required chargers across each persona for the target year.

Driver Type	Nearby	Primary	Secondary
On-street business driver	392	4	18
On-street non-business driver	214	17	142
Off-street business driver	0	4	6
Off street non-business driver	0	11	17
Total	606	36	183
	825		

**Table 5-5** - Blackburn with Darwen breakdown of required chargepoints across each persona

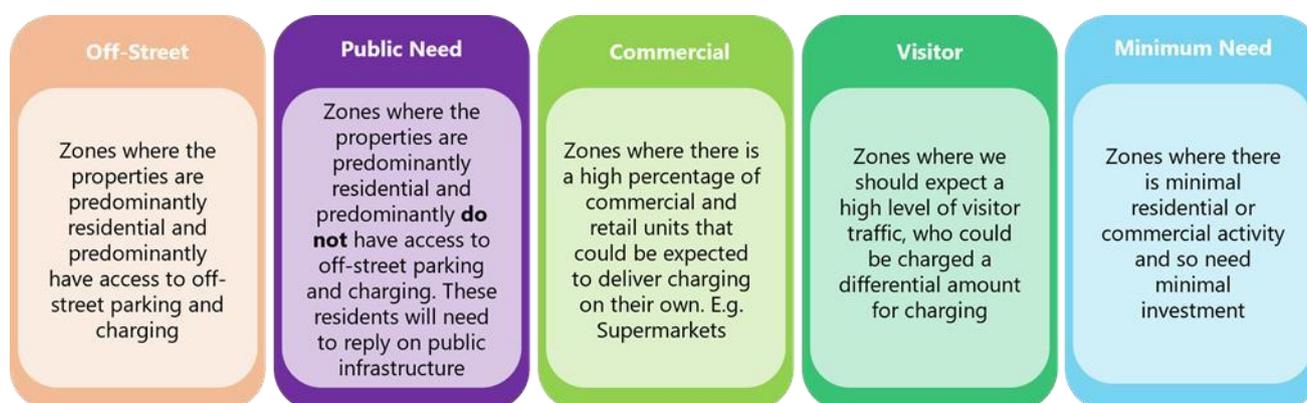
Using the interim adoption projections as per Figure 5-6, an infrastructure provision projection for 2026 has also been calculated for Blackburn with Darwen as follows:

Year	Nearby	Primary	Secondary	Total
2026	189	11	59	259

**Table 5-6** - Projected infrastructure provision for Blackburn with Darwen for 2026

### 5.2.4. Blackburn with Darwen Demand Zoning

Field Dynamics has undertaken the demand zoning exercise for Blackburn with Darwen. These zones have been categorised as Off-Street, Public Need, Commercial, Visitor and Minimum need, as described in Figure 5-7. The nature of this algorithm means that urban centres dominate the results of the demand zoning.



**Figure 5-7** - Zone type descriptions

The final map of zones is shown in Figure 5-8 for the Blackburn with Darwen region.

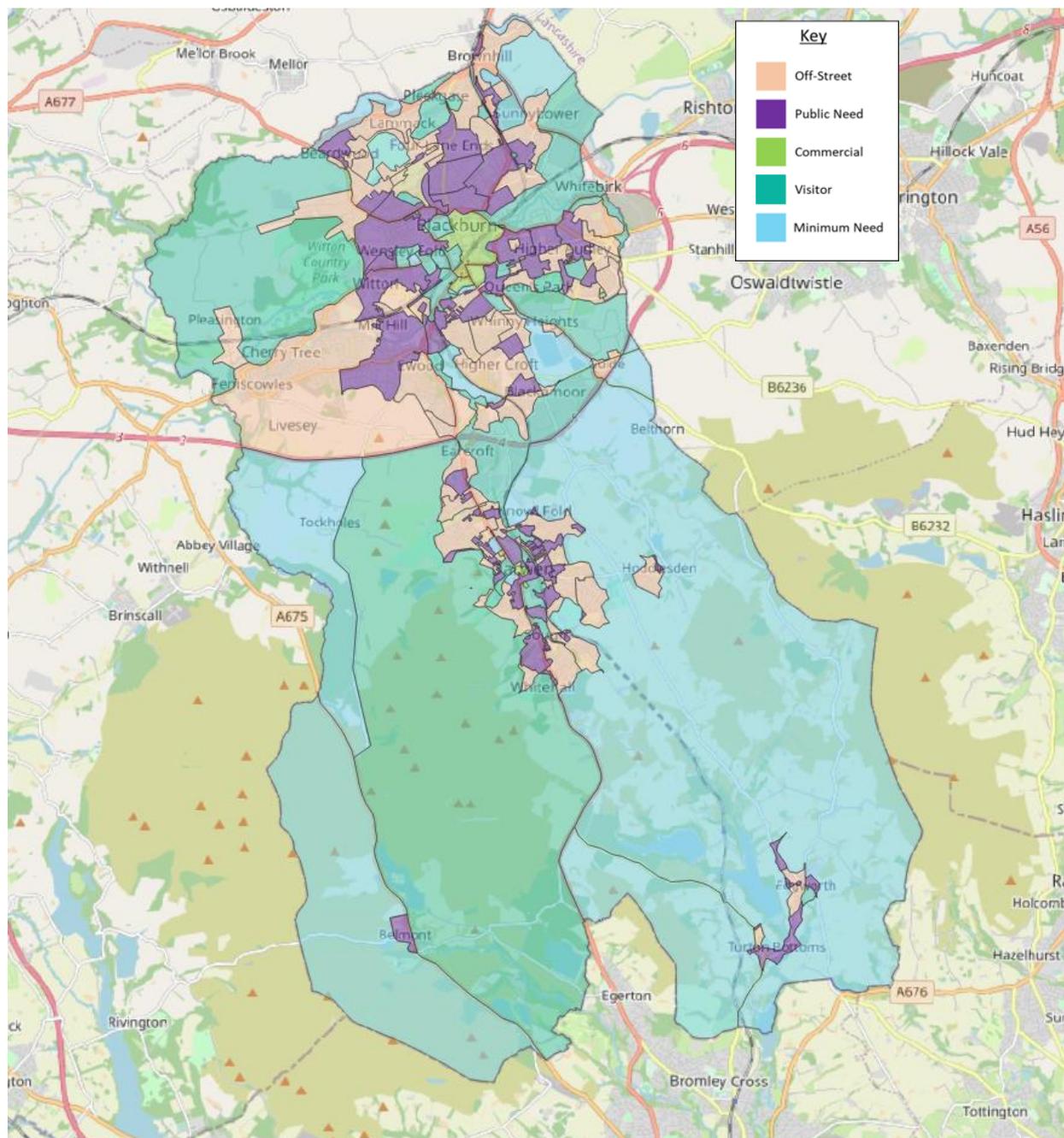


Figure 5-8 – Blackburn with Darwen zoning map

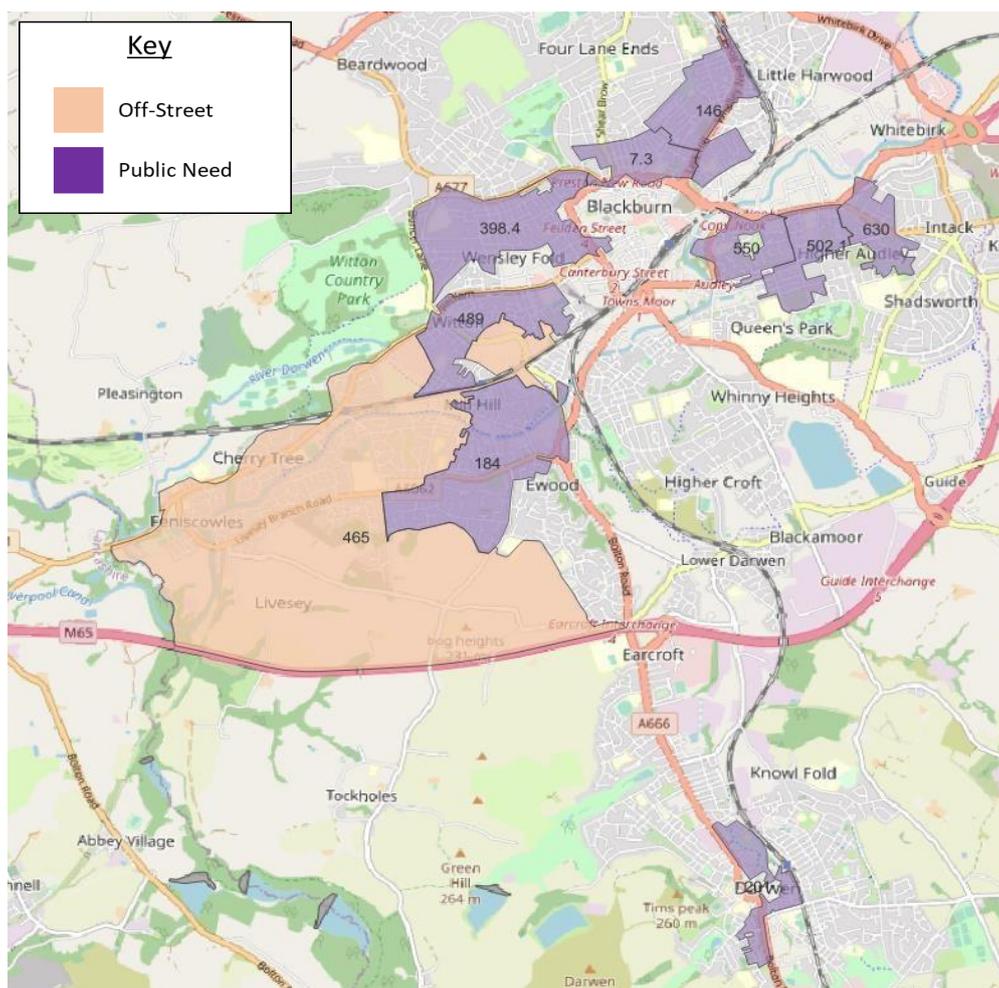
### 5.2.5. Blackburn with Darwen Analysis of Expected Additional Charger Provision

Areas of the borough have been categorised as those with off-street parking and those with limited or without off-street parking. Zones have been determined accordingly and those with the greatest number of households without off-street parking listed. The Zone IDs relate to the zones available in the GIS files provided by Field Dynamics.

Zone ID	Classification	Total Households	Percentage On-Street Households	Total On-Street Households
398.4	public	2799	40.4	1132
184	public	3118	33.8	1055
146	public	1828	52.7	963
7.3	public	1066	74.0	789
489	public	1738	39.6	688
502.1	public	1280	52.5	672
550	public	942	55.2	520
201	public	811	60.7	492
630	public	930	49.4	459
465	off-street	4876	8.8	427

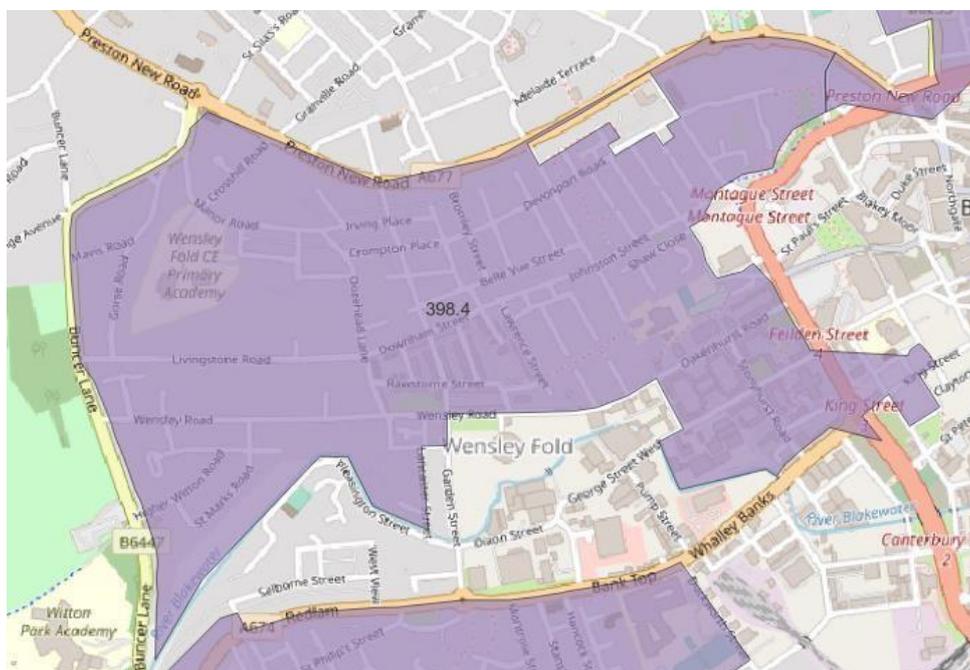
**Table 5-7 – Blackburn with Darwen zone list by total number of on-street households**

These zones are shown on a map of the Blackburn with Darwen area in Figure 5-10.



**Figure 5-9 – Zones with the greatest number of on-street households**

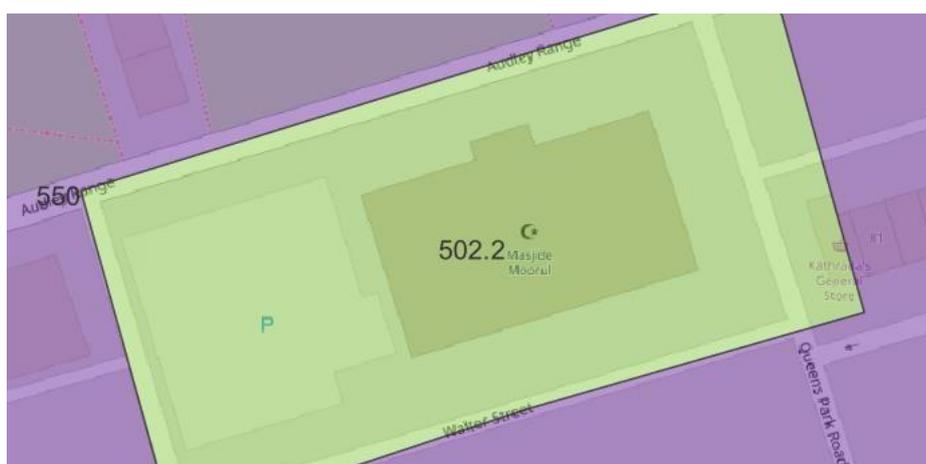
As per Table 5-7, the zones with the greatest number of on-street households are dominated by those classified as Public Need. Zone 398.4, around Wensley Fold, Blackburn, has the highest number of on-street households (1132) and is shown in Figure 5-10.



**Figure 5-10 - Zone 398.4 in Blackburn**

It should be noted that analysing the zones in terms of the percentage of on-street households (across all zone types) favours those in which there are few on-street households and as such, where infrastructure roll-out is currently of minimal need.

For example, Zone 502.2 is identified as a high priority zone, but contains only a single residence, as depicted in Figure 5-11.



**Figure 5-11 - Zone 502.2**

Prioritising infrastructure provision by the total number of on-street households favours urban centres, due to the number of homes involved.

## 6. Technical Solutions

### 6.1. Charging Technologies

There are four main types of EV charging – **slow, fast, rapid, and ultra-rapid**. These represent the power outputs, and therefore charging speeds, available to charge an EV. Note that power is measured in kilowatts (kW), with cost measured in kilowatt hours (kWh).

- **Slow chargers** (3-6 kW) are best used for overnight charging and usually take between 6 and 12 hours for a pure-EV, or 2-4 hours for a plug-in hybrid electric vehicle (PHEV). EVs charge on slow devices using a cable which connects the vehicle to a 3-pin or Type 2 socket.
- **Fast chargers** include those which provide power from 7 kW to 22 kW, which typically fully charge an EV in 4-6 hours. Common fast connectors are a tethered Type 1 or a Type 2 socket (via a connector cable supplied with the vehicle).
- **Rapid chargers** are one of two types – AC or DC [Alternating or Direct Current]. Current Rapid AC chargers are rated at 43 kW, while most Rapid DC units are at least 50 kW. Both will charge the majority of EVs to 80% in around 30-60 minutes (dependent on battery capacity) and will fully charge in 1-2 hours.
- **Ultra-Rapid chargers** are currently the fastest class of chargers available in the UK. These are typically in the range of 100-150kW but can be as powerful as 350kW. Typical charge times for Ultra-Rapid chargers can be between 20 and 40 minutes.

The modelling work has labelled chargers as nearby, primary, and secondary to define their use and to differentiate from their technical type (slow, fast, rapid) of chargers available. The technical type of charger suitable for each location is specific to that location and each individual use. Fast chargers may suit both a primary and secondary use type and the differentiation will come down to each deployment location. Table 6-1 provides an overview and comparison of each EV charging technology type.

Technology Type	Modelling type	Power Output	Typical charge time (0-100%) [6] [7]	Advantages	Disadvantages	Typical Hardware and Installation Costs* [8] [9] [10]	Estimated Electricity Cost [11] [12] [13] [14]
Slow	Nearby – a chargepoint that is within walking distance of a household	3-6kW	6-12 hours	<p>Can be used to charge overnight or at a workplace.</p> <p>Untethered - requires a charger cable.</p> <p>Widely available for home charging.</p>	Slow rate of charging	Home Chargepoint: £375-£1000	<p>£0.34 per kWh (Average UK domestic electricity cost as of October 2022)</p> <p>£0.42 per kWh (Average cost for Public Charger use)</p>
Fast	<p>Primary – a chargepoint that is visited for the primary purpose of charging</p> <p>Secondary – a chargepoint that is visited for some other primary purpose where, charging is a secondary purpose (for example, charging whilst shopping).</p>	7kW or 22kW	4-6 hours	<p>Faster rate of charging.</p> <p>Widely used for public chargepoints such as car parks, supermarkets etc.</p> <p>Widely available for home charging (7kW).</p>	<p>Tethered – only vehicles compatible with the unit's charge socket type can be used.</p> <p>22kW chargers are uncommon for home charging due to installation costs.</p>	<p>Home Chargepoint: 7kW – £625 22kW – £1000-£15,000</p> <p>Commercial: 7kW - £1500 22kW – £2900-£5400</p>	<p>£0.34 per kWh (Domestic Charging)</p> <p>£0.42 per kWh (Average cost for Public Charger use)</p>
Rapid	Primary – a chargepoint that is visited for the primary purpose of charging	43kW (AC) 50kW (DC)	1-2 hours	<p>Fastest commonly available charge type.</p> <p>Typically found at motorway service stations.</p>	Tethered – only vehicles compatible with the unit's charge socket type can be used.	Commercial: Up to £35,000	£0.64 per kWh (Average cost for public charger use)

	Secondary – a chargepoint that is visited for some other primary purpose where, charging is a secondary purpose (for example, charging whilst shopping).				Rapid chargers are not compatible with all EVs. Not currently available for home charging. Can be expensive to install compared to fast chargers.		
Ultra-Rapid	Primary – a chargepoint that is visited for the primary purpose of charging	100-150kW	20-40 minutes	Fastest charge type currently available. Available at some motorway services.	Tethered – only vehicles compatible with the unit's charge socket type can be used. Limited public availability in the UK. Not currently available for home charging. Very high installation costs - will usually require a new substation to be built.	Typical UK installation costs not publicly available at time of writing.	£0.64 per kWh (Average cost for public charger use)

\* Costs can range due to a number of factors, including electricity supply availability, chosen equipment supplier, commercial model used, and use of Government grants.

**Table 6-1 - Comparison of Electric Vehicle charging technology types**

## 6.2. Pavement Cable Channels

Pavement cable channels can offer a solution for drivers who do not have access to off-street parking, but still wish to use a charging cable connected to their home.

Lancashire County Council is conducting trials into the use of 'cable trays'. The cable tray provides a housing that is installed directly into the pavement in which the charging cable can be inserted into and removed after use. It can provide a low cost and practical solution to safely pass an electric cable across the footway and allows the resident to charge their vehicle from their domestic supply whilst it is parked on the highway, providing them access to cheaper domestic electricity rates.

Two in pavement solutions are being trialled and assessed for technical performance and user behaviour. The cable-tray will not be suitable for all households without off street parking but could be part of a mix of solutions available. As per Field Dynamics' analysis of households with space to park and charge, 27.8% of households in Lancashire require on-street charging provision, which compares to the national average of 34.8%, but varies across districts.



**Figure 6-1** - An example of a cable tray installed into the footpath

## 6.3. Accessibility

An important consideration in the deployment of EV charging infrastructure is to ensure that the needs of those with specific accessibility requirements are met. The British Standards Institute released a guidance document ([PAS 1899:2022 – Electric Vehicles – Accessible charging – Specification](#)) in October 2022 outlining specifications that should be met by chargepoint manufacturers and installers to ensure that charging infrastructure is accessible to all users.

This document contains specifications and standards for a range of infrastructure-related aspects including the following:

- Physical chargepoint design;
- Chargepoint placement;
- Streetscape and public realm around the chargepoint; and
- Digital platforms and information provision for chargepoints.

It is important that accessibility standards are considered as part of the procurement and installation of EVCI.

## 6.4. Workplace Charging and Commercial Fleets

Workplaces can offer charging infrastructure and be particularly beneficial to those without the ability to charge at home. As described in Section 6.6, the [Workplace Charging Scheme](#) (WCS) provides support towards the up-front costs of the purchase and installation of electric vehicle chargepoints. For eligible organisations such as businesses and charities, the WCS can drastically reduce the purchase and installation cost. Additionally, partnership opportunities with chargepoint operators can also reduce the capital investment obligations of the employer. The installation of chargepoints can also offer businesses with an additional revenue stream if they were to make the facilities available to non-employees, such as outside of normal working hours. Employers will be encouraged to install charging infrastructure where appropriate

## 6.5. Schools

The deployment of chargepoints within school grounds poses additional challenges which other workplaces may not face. School parking facilities will vary and the contract between the school and the local authority will need to be considered.

Some key considerations include the location of staff parking in the school; the installation of chargepoints in staff parking areas may pose an issue for the movement of vehicles and be at greater risk of vandalism, as well as technical considerations around electricity supply.

Like other workplace car parks, school car parks are an opportunity to deploy chargepoints, and could serve residential areas where off-street parking is not available. This can be the case for schools where there are no gates/security devices to prevent access to the carpark after school hours; and hours of public accessibility compliment the school's safety procedure.

Public access to chargepoints may enable application for funding via ORCS (On-Street Residential Chargepoint Scheme) (funding opportunities are detailed in Section 6.6). However, contact with the Energy Saving Trust should be made to clarify eligibility and application processes. For instances in which the chargepoints are solely for staff use, the Workplace Charging Scheme may be a more suitable source of funding.

## 6.6. Funding Opportunities

The Government currently has a number of EV charging-related grants and incentives that can be taken advantage of by local authorities, businesses and the public. Such grants should be promoted to businesses and residents in order to expand charging infrastructure at minimal cost to the Council. In the Government's 2021 'Build Back Better' strategy document, £2.5 billion was committed by the Government to supporting the transition to electric vehicles, with a focus on on-street charging and EV grants.

More information on all grants available to local authorities by the Government can be found here: <https://www.gov.uk/guidance/electric-vehicle-charging-infrastructure-help-for-local-authorities>

The current and planned grants set to be offered by the Government for local authorities, businesses and the public include the following:

### Plug-In Grant

The Government currently offers a grant to subsidise the cost of certain brand new low-emission vehicles. Eligible vehicles (which does not include private cars) include wheelchair accessible vehicles, motorcycles and mopeds, vans, trucks, and taxis. Grant amounts depend on the vehicle, for example up to £7,500 is available for taxis and £25,000 for large trucks. In order to be eligible, vehicles must meet certain criteria, including CO<sub>2</sub> emission levels and zero-emission range. The Plug-In Grant could be of particular benefit to residents and as such, should be promoted to encourage uptake.

The Plug-In Grant is offered by the Government to vehicle dealerships and manufacturers. When purchasing an eligible vehicle, the dealer will include the grant value in the purchase price.

More information on this scheme can be found on the Government website here: <https://www.gov.uk/plug-in-vehicle-grants>

### On-street Residential Chargepoint Scheme (ORCS)

The ORCS provides grant funding for local authorities towards the cost of installing on-street residential chargepoints for plug-in electric vehicles. ORCS is designed to increase availability of on-street charging infrastructure in residential areas as a means of serving those without off-street parking. Funding is administered by Energy Saving Trust on behalf of the Office for Zero Emission Vehicles (OZEV).

In the financial year 2022 to 2023, £20 million is available through ORCS.

The standard maximum grant value available per chargepoint unit is £7500 (or up to £13,000 for cases in which connection costs are high). The funding is for 60% of the capital costs of chargepoint procurement and installation. There is no strict maximum or minimum project size. Schemes must have a completion date before 31 March 2024 in order to be eligible for consideration. Car parks owned by the council may also be eligible to receive chargepoint funding.

Local authorities must submit an application directly to OZEV to access this scheme. More information on this scheme can be found on the Government website here:

<https://www.gov.uk/government/publications/grants-for-local-authorities-to-provide-residential-on-street-chargepoints/grants-to-provide-residential-on-street-chargepoints-for-plug-in-electric-vehicles-guidance-for-local-authorities>

### Local EV Infrastructure Fund (LEVI)

The Local EV Infrastructure Fund (LEVI) will help local authorities to leverage private sector investment into expanding EV charging infrastructure across England. The Local EV Infrastructure Fund comprises £450 million to support rollout of large on-street charging infrastructure schemes as well as rapid charging hubs across England.

More information on this scheme can be found on the Energy Saving Trust website:

<https://energysavingtrust.org.uk/grants-and-loans/local-electric-vehicle-infrastructure-scheme/>

### Rapid Charging Fund (RCF)

The Rapid Charging Fund (RCF) will help motorway and major A road service area operators prepare the network for 100% zero emissions vehicles. The RCF will provide £950 million to support the future proofing of service stations through upgrading their electrical supply. The fund was announced in March 2020 and forms part of a commitment to support rollout of a high-powered electrical network for EVs in England. At present, applications are not yet open and information pertaining to the opening date is not yet available on the government website.

More information on this scheme is available on the Government website: <https://www.gov.uk/guidance/rapid-charging-fund>

### Workplace Charging Scheme (WCS)

The Workplace Charging Scheme (WCS) is a voucher-based scheme that provides support towards the upfront costs of the purchase and installation of electric vehicle charge-points, for eligible businesses, charities, and public sector organisations. The WCS is available across England, Wales, Scotland and Northern Ireland and is run by OZEV and administered by the DVLA.

The grant covers up to 75% of the total costs of the purchase and installation of charging infrastructure, capped at £350 per socket and 40 sockets across all sites per applicant. On successful application, an identification voucher code is issued via email to be given to any OZEV-authorized installer.

More information on this scheme is available from the Government website: <https://www.find-government-grants.service.gov.uk/grants/workplace-charging-scheme>

### EV Chargepoint Grant

The EV Chargepoint Grant provides grant funding of up to 75% towards the cost of installing electric vehicle chargepoints at domestic properties across the UK. The grant cap is set at £350 per installation and is available to local authorities, landlords (social or private), or those own or rent a flat.

For renters or landlords to qualify, a tenant must own, lease or has ordered an approved vehicle with dedicated off-street parking at their place of residence.

The customer is able to choose an installer who checks the resident qualifies for the scheme. The installer will then bill the customer accordingly.

Additional support is also available for local authorities to help install EV chargepoints in residential apartment block parking spaces. The EV chargepoint grant for residential carparks provides grants of up to £30,000 towards the cost of installing EV chargepoints in such properties. More information on this scheme is available from the Government website: <https://www.gov.uk/government/collections/government-grants-for-low-emission-vehicles#ev-chargepoint-grant>

### Charging Infrastructure Investment Fund

The aim of the Charging Infrastructure Fund is to accelerate the roll-out of charging infrastructure along key road networks, in urban areas and at destinations, and to increase the amount of capital invested in the sector. It will provide access to finance to companies that deliver chargepoints and encouraging the engagement of a more diverse range of parties within the financial community to support the growth of the sector, therefore increasing competition and delivering the best outcome for the consumer.

### Summary of Funding Opportunities

Table 6-2 summarises the various Government funding opportunities and grants available to LCC and BwD, local businesses, and residents for the installation of electric vehicle charging equipment.

Grant	Beneficiary	Value
<a href="#"><u>Plug-In Grant</u></a>	Residents	Wheelchair accessible vehicles: Up to £2500 Motorcycles: Up to £500 Mopeds: Up to £150 Small Vans: Up to £2500 Large Vans: Up to £5000 Small Trucks: Up to £16,000 Large Trucks: Up to £25,000 Taxis: Up to £7500
<a href="#"><u>On-street Residential Chargepoint Scheme (ORCS)</u></a>	Local Authorities	Up to £7500 for most chargepoints. Up to £13,000 per chargepoint for cases in which connection costs are high
<a href="#"><u>Local EV Infrastructure Fund (LEVI)</u></a>	Local Authorities	£450 million (total across England) to support rollout of large on-street charging infrastructure schemes (further details TBC by the Energy Saving Trust)
<a href="#"><u>Rapid Charging Fund (RCF)</u></a>	Major A road and motorway service areas	£950 million total (further details TBC by the Government)
<a href="#"><u>Workplace Charging Scheme (WCS)</u></a>	Businesses, charities, and public sector organisations	Up to 75% of total cost, capped at £350 per socket for 40 sockets across all sites per applicant
<a href="#"><u>EV Chargepoint/Infrastructure Grant</u></a>	Local Authorities, landlords, tenants, or those that own/rent a flat	Up to 75% of total cost, capped at £350 per installation. Additional support up to £30,000 available for residential car parks.
<a href="#"><u>Charging Infrastructure Investment Fund</u></a>	Private sector	£200 million in total, matched by private sector. Managed and invested on a commercial basis by a private sector fund manager.

**Table 6-2 - Summary of Government funding opportunities for EVCI**

## 6.7. Partnership Opportunities

There are a variety of partnership models available, each of which can support the provision of funding outside of that available through central government. These opportunities include private sector match funding, concession frameworks, as well as alternative models such as public-private partnerships (PPPs), and 'leasing' deals among others [15]. For example, a leasing partnership has been developed with Suffolk County Council who, working with EO, have developed a new network, Plug in Suffolk. Local businesses are encouraged to 'host' fast chargepoints that are open to the public [16].

As recognised in a recent good practice guide developed by the Local Government Association (LGA) [17], the use of PPPs provides local authorities and private organisations the opportunity to bring together resources, expertise and powers in ways that cannot be achieved in isolation. Engaging with local businesses provides the opportunity to develop efficiencies for public charging. There are two key benefits to partnering with local businesses. Firstly, by identifying and working with businesses which may already have EV charging strategies in place (such as large retailers), the risk of duplicating provision can be minimised. Secondly, by identifying businesses who may have appetite to provide public access to their charging facilities, investment costs and street furniture can be reduced. The development of PPPs for the deployment of EV charging infrastructure is still relatively new. As such, the nature of these partnerships is in a state of continual development, with new models appearing regularly. Successful models commonly form between the Local Authority and the chargepoint operators (CPOs), but can also include energy providers and local businesses.

In West Yorkshire, the West Yorkshire Combined Authority (WYCA) have partnered with EQUANS (previously ENGIE) for the installation of 88 rapid chargers as part of a £3 million scheme to reduce emissions and improve air quality in the region. The partnership has enabled WYCA to influence and drive the objectives of the scheme and ensure that sites are free to use [18].

## 7. Conclusions and Action Plan

This section draws together the evidence base and analysis work completed by Atkins and Field Dynamics into conclusions which set the rationale for the strategy vision and objectives. A set of actions for progressing the deployment of EV Infrastructure and achieving the strategy objectives have been developed.

- Through the use of personas to describe broad charging usage, the total number of chargepoints has been calculated. Further analyses have highlighted the broad locations and number of chargers required to support the adoption of EVs across Lancashire and Blackburn with Darwen. For Lancashire, the breakdown of total required chargers to meet the current projected demand of 2030 is for 4,573 Nearby, 284 Primary and 1804 Secondary. For Blackburn with Darwen, the breakdown of total required chargers to meet the current projected demand of 2030 is for 606 Nearby, 36 Primary and 183 Secondary.
- There are uncertainties in the uptake rate but the use of the National Grid adoption curve that is regularly refreshed provides a good baseline for the expected number of EVs in Lancashire.
- The analysis shows the areas and zones where the need for public EVCI may be greatest, based on number of households likely to require on-street charging. More detailed planning work will be required to consider socio-economic and demographic factors, as well as practical considerations to identify specific site locations and the appropriate technology use.
- Whilst high priority zones have been identified, an approach focused on rural towns and villages will be needed. Such areas may have been captured as Minimum Need zones due to the potential urban bias of the methodology used.
- A coordinated approach across all stakeholders, including DNOs and industry, will be required ensure charging provision is provided where needed and used and there is not over-provision in certain areas.
- Given the relative immaturity in the EV sector, an objective to increase awareness and understanding across stakeholders and Lancashire residents and businesses has been included.
- Access to government funding such as the LEVI Fund provides a key delivery mechanism, however, the aim of LEVI is to leverage in private sector investment to accelerate the roll out of and commercialisation of local EV infrastructure. An objective has therefore been included to investigate appropriate operating and funding models, to ensure best value for government funding and to attract strong private sector investment.
- The evidence-based approach uses several key assumptions and provides a starting point to achieve the infrastructure provision required to meet the projected demand of 2030. Regular review of this projection and review of the strategy action plan will be undertaken prior to the target date of 2030 to ensure the charging demand is met without over-investment. Ongoing monitoring and feedback activities will validate the assumption and support reviews of the strategy.

## 7.1. Vision and Objectives

Based on the review and analysis work completed, the strategy vision is:

To deliver appropriate, accessible, and equitable EV charging provision across Lancashire and Blackburn with Darwen, in collaboration with commercial operators, to meet the expected growth in EV usage and demand from residents, businesses and visitors without access to off-street charging.

The following objectives set how the vision will be achieved.

### Objectives

- Coordination - to effectively coordinate EVCI deployment activities at county and district levels and establish an EV Working Group
- Planning – to identify the optimal locations for chargepoints that recognises the local, regional, and national policies and the demographics of the county.
- Funding and models – to determine the best operating and funding models, and to secure government funding for infrastructure
- Deployment – to deploy 6,655 chargepoints (across the public and private sectors) throughout Lancashire and 825 across Blackburn with Darwen by 2030, assuming no major changes to the underlying assumptions
- Monitoring – to implement monitoring, evaluation, and feedback activities to build a better understanding of actual charging usage and behaviour, EV uptake and user feedback, to inform regular reviews and updates to the strategy
- Awareness and capabilities – to increase awareness, understanding and capabilities in EVCI to support the roll-out and operational aspects

## 7.2. Actions

The following actions provide a mechanism for reviewing and checking progress to ensure delivery against the strategy objectives.

### Coordination

- Ensure close engagement between Lancashire County Council, Blackburn with Darwen Borough Council, neighbouring Blackpool Council, and the districts within Lancashire as part of the formal electric vehicle charging infrastructure rollout. This could be in the format of an EV Forum or Working Group.
- Co-ordinate strategies and development plans across districts. Engagement and communications across regions should work to reduce infrastructure overlap through collaboration.

### Planning

- Build on the demand zone modelling work to identify suitable locations for charging infrastructure deployment, including consultation with stakeholders and residents.
- Consider an approach focused on rural areas to support the adoption of EVs within rural towns and villages. Such areas may have been captured as Minimum Need zones due to the potential urban bias of this methodology.
- Consider an approach focused on visitor / destination charging requirements to ensure there is adequate provision to attract visitors.
- Engage with Distribution Network Operators (DNOs) to ensure that there is grid capacity available for the deployment of proposed chargers, and establish likely connection costs.
- Ensure access to improved current chargepoint data, such as ZapMap.

- Engage with commercial chargepoint operators and businesses to identify and influence opportunities to deploy electric vehicle infrastructure and identify areas in which other stakeholders may already be planning chargepoint deployment and will therefore not require public investment

### **Funding and models**

- Access government grants available to local authorities to assist with the rollout of EVCI, including the LEVI and ORCS schemes.
- Consideration of different commercial arrangement to ensure value for money for public money, bringing in private investment according to local market conditions.
- Identify appropriate model for delivery and procurement routes. Examples of such procurement routes may include the Crown Commercial Service (CCS) Vehicle Charging Infrastructure Solutions Dynamic Purchasing System, and the Eastern Shires Purchasing Organisation (ESPO) Framework.
- Preparation / Coordination of specification and tender documents to procure charging infrastructure.

### **Deployment**

- Seek to deploy charging provision as per the 2026 projections shown in Table 5-3 and Table 5-7, respectively.
- Continue to investigate the feasibility of in-pavement cable tray charging solutions for households without off-street parking.

### **Monitoring**

- The deployment of infrastructure will impact the adoption of EVs as well as the initial adoption assumption, upon which the analysis has been based. As such, it is recommended that a review of EV adoption within the area is undertaken annually.
- Monitor the levels of infrastructure usage and validate the charging behaviours as per the personas used to model future uptake.
- Ongoing monitoring and review of charging behaviours.

### **Awareness and capabilities**

- Activities to promote EV adoption and address misinformation with regards to EV adoption. This includes perceptions on safety risk, range anxiety, charging availability as well as to improve awareness of the technology to assist in the public becoming more comfortable with this new technology.
- Promote Government grants offered directly to residents and businesses in order to encourage uptake in EVCI without requiring Council funding or resource. This includes the EV Chargepoint/Infrastructure grant and the Workplace Charging Scheme.
- Develop in-house EV infrastructure deployment expertise to facilitate aspects such as behavioural nudges to influence charging.

EVs and their associated charging infrastructure are rapidly evolving, with the increase in vehicle uptake and the development of new technologies changing in a way that is difficult to predict in the longer term. For this reason, the projections set out in the strategy and identified actions will be reviewed regularly, both after each deployment to review impact and lessons learnt, as well as when new data sources become available (such as chargepoint usage from CPOs).

## 8. Glossary

Acronym	Definition
AC	Alternating Current
BEV	Battery Electric Vehicle
BwD	Blackburn with Darwen Borough Council
CCS	Crown Commercial Service
CPO	Charge Point Operators
DC	Direct Current
DfT	Department for Transport
DNO	Distribution Network Operators
DVLA	Driver and Vehicle Licensing Agency
ESPO	Eastern Shires Purchasing Organisation
EV	Electric Vehicle
EVCI	Electric Vehicle Charging Infrastructure
GIS	Geographic Information System
kW	Kilowatt
kWh	Kilowatt Hours
LCC	Lancashire County Council
LEVI	Local EV Infrastructure Fund
NCR	National Chargepoint Registry
ORCS	On-street Residential Chargepoint Scheme
OZEV	Office for Zero Emission Vehicles
PHEV	Plug-In Hybrid Electric Vehicle
QGIS	Open-source, cross-platform desktop Geographic Information System application
RCF	Rapid Charging Fund
TfN	Transport for the North
ULEV	Ultra-Low Emission Vehicle

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