



**TRANSPORT
SCOTLAND**
CÒMHDHAIL ALBA

transport.gov.scot

Draft Implementation Plan

**Vision for Scotland's
Public Electric Vehicle
Charging Network**

Contents

| | |
|--|-----------|
| Ministerial Foreword | 3 |
| Cabinet Secretary for Transport | 4 |
| Executive Summary | 5 |
| Introduction | 7 |
| The purpose of this document | 8 |
| Proposed actions | 10 |
| Background | 16 |
| Scotland's public charging network today | 16 |
| Current regulatory environment | 26 |
| Challenges and opportunities | 32 |
| Next steps and how to respond | 37 |
| Consultation questions | 37 |
| Annex A..... | 40 |
| Integrated Impact Assessment (IIA)..... | 40 |
| Annex B..... | 41 |
| Roles and responsibilities | 41 |
| Annex C..... | 45 |
| Consultation Responses | 45 |

Ministerial Foreword

Transport remained the largest contributing sector to total Scottish Green House Gas emissions for the eighth consecutive year, accounting for around 31.7% of total Scottish emissions in 2022 with road transport contributing to around 70% of transport emissions. Over the next decade, electric vehicles will play a critical part in our ambitions to cut emissions and to address climate change. Electric cars and vans will be key to how people, goods and services move around Scotland and beyond. We need to ensure that all parts of Scotland can benefit from this switch, that no one and no part of the country is left behind.

Scotland is already leading the way in the UK on public EV charging. On a per head of population basis, Scotland has more public EV charge points than any other part of the UK, except London, and more rapid public EV charge points than any other part of the UK.

In November 2024, Scotland met its target for 6,000 public EV charge points - two years ahead of the 2026 deadline. This target was achieved through a combination of public funding and increasing private sector investment.

We now need to go faster and further, if we are to achieve our commitment to deliver approximately 24,000 additional public EV charge points by 2030.

This plan, setting out how we will implement the Vision for our public charging network that was published in June 2023, sets out how we will do that.

In particular, it seeks to guide the key stakeholders who are central to developing Scotland's public charging network. That includes commercial operators. They need to know that Scotland is open for business and that we want them to choose to invest in Scotland.

We have already seen significant growth in the level of private investment in public EV charging infrastructure essential to support the transition to net zero transport. This draft Implementation Plan outlines how the private sector will take on a leading role, setting out the actions necessary to realise the ambition of our Vision, which is to give Scotland a well-designed, accessible, comprehensive, and convenient public charging network that works for everyone.



Image 1: First Minister and the Cabinet Secretary for Transport use an IONITY Rapid EV charging Hub in Ayr during their attendance at the Travelling Cabinet in November 2024.

Fiona Hyslop

Cabinet Secretary for Transport

Executive Summary

This draft Implementation Plan sets out 15 actions to achieve the growth necessary in the public charging infrastructure in Scotland and deliver a public charging network that fulfils Scotland's public charging Vision. The actions demonstrate the collective responsibility across stakeholders to achieve this Vision. They are set out in both the short- and medium-term and are aligned to the five themes of the public charging Vision, with the roles of stakeholders clearly identified.

The document, developed with significant input from stakeholders, marks a new era in Scotland's public charging network requiring cooperation and collaboration from local to Scottish and UK levels to ensure private sector investment meets demand.

The draft Implementation Plan is a forward-looking framework document that collates activities that are already, or will in the future, be undertaken by a wide range of stakeholders. Achieving the Vision for the public EV charging network will require leadership from business, Government, individuals and the third sector. There is a history of positive collaboration in these areas, which must now deepen and expand.

The actions for Government are in line with previously announced policies that are either specific to public EV charging or part of "parent-policies" which have already set the policy direction with regards to transport decarbonisation in Scotland.

Key roles for stakeholders are set out in the following areas:

- Public charge point operators must continue to invest in public EV charging, powered by renewables, to meet the needs of a growing number of users.
- Electricity Distribution Network Operators must support growth in public charging and enable the use of clean renewable energy.
- Local Authorities must continue to support a comprehensive and convenient network which meets the needs of users and is grown through attracting private sector investment.
- The UK Government will use reserved powers on vehicles, energy and EV charging to support the continued the development of EV charging and a wider sustainable transport system.
- The National Electricity System Operator, Ofgem and Consumer Scotland also have important roles to play.

Alongside these partners, the Scottish Government will continue to convene stakeholders to monitor the market, enable private investment, confirm the use of

clean renewable energy and ensure EVs and infrastructure support a wider sustainable transport system.

Introduction

Scotland's public EV charging landscape stands at a critical juncture. The Scottish Government took the bold step of funding early development ahead of demand to provide early EV adopters with the confidence to transition to EVs. As EV uptake scales towards mass market adoption, the private sector is increasingly taking the lead in funding public EV charging infrastructure for cars and vans. Driven by record private investment, public EV charging infrastructure in Scotland grew by 49% between June 2023 and October 2024, with over 1,984 public charge points added to the network in just 16 months.

In 2023, the Scottish Government set out a strong vision for public EV charging in Scotland. We set out the attributes the network of the future needs to have: a network which is comprehensive and convenient, meets the needs of users, is grown with private investment, powered by clean, green energy and complements the wider sustainable transport system. Reaching this vision of the network will require close collaboration between key stakeholders across the public and private sectors.

This draft Vision Implementation Plan has been developed drawing on input from key stakeholders including: charge point operators; energy distribution network operators; local authorities, and their representative groups, including the Convention of Scottish Local Authorities (COSLA) and the Scottish Collaboration of Transportation Specialists (SCOTS); the UK Government; and statutory bodies including the UK Competition and Markets Authority and Ofgem, and the voices of EV drivers via the Electric Vehicle Association Scotland and Consumer Scotland.

It sets out a route map to guide collaboration across all stakeholders, to achieve the vision and to enable the delivery of approximately 24,000 additional public charge points by 2030. The draft Implementation Plan details proposed actions to be taken by key stakeholders in the short and medium term.

A list of consultation questions is provided at the end of the document.

Published alongside this draft Plan is a draft Integrated Impact Assessment (IIA) that considers the impacts of the Plan.

The purpose of this document

In June 2023, the Scottish Government published its Vision for Scotland's Public Electric Vehicle Charging Network. The Vision set out what an ideal public charging offer for cars and vans in Scotland should look like. Realising this Vision will require the collective efforts of a broad range of stakeholders, this draft Implementation Plan provides a route map and a draft set of actions for delivering this Vision and the charging infrastructure Scotland will need in the future, from Scotland's cities to its rural and island communities.

Extensive engagement was undertaken to support the development of the Scottish Government's Vision for public EV charging and this draft Implementation Plan has been developed following additional engagement with key stakeholders that share collective responsibility for delivering public EV charging in Scotland. Following the publication of this draft Plan, a consultation will take place before the final Vision Implementation Plan is published later in 2025.

The Scottish Government will monitor the delivery of the finalised actions on an ongoing basis and will review progress in 2028.

Policy context

Transport Scotland's purpose is to deliver the Scottish Government's vision for transport, as set out in the 2020 National Transport Strategy 2 (please note that the term Scottish Government covers both core government as well as its agencies, such as Transport Scotland).

The Vision and this draft Implementation Plan sit within a broader landscape of Scottish Government policies. This draft Implementation Plan contains actions for the Scottish Government that implement these parent policies and strategies:

- National Transport Strategy 2 (NTS 2), 2020.
- Climate Change Plan Update (CCPu), 2020.
- Strategic Transport Projects Review (STPR 2), 2022.
- Reducing car use for a healthier fairer and greener Scotland, 2022.
- National Planning Framework (NPF4), 2023.

Document structure

This document outlines the proposed actions required to deliver Scotland's Vision for the public EV charging network, a route map to approximately 24,000 additional public charge points by 2030, while identifying clear roles of stakeholders.

To place these actions in context, the document then provides an overview of the development of public EV charging to date and a snapshot of public EV charging provision today.

The document goes on to provide background detail on the existing composition of the public charge point infrastructure, charging technologies, details on levels of current and forecasted EV demand, as well as the regulatory landscape and the present consumer experience of EV charging. It looks at different EV adoption scenarios and key challenges and opportunities, all of which have been taken into consideration when developing the proposed actions.

Finally, the document includes eight consultation questions, the responses to which will aid us in developing a final Vision Implementation Plan as well as guidance on how you can provide your responses to this consultation.

The transition to EVs and the provision of public EV charging is a technically complex, and rapidly evolving area. Nevertheless, this draft Implementation Plan has been written with the aim of avoiding jargon and acronyms wherever possible with a view to ensuring that the subject matter is as accessible as it can be.

Proposed actions

The Vision for Scotland's Public Electric Vehicle Charging Network set out the attributes of an ideal public charging network for cars and vans in Scotland and what it should look like, grouped into five key themes:

- **Theme 1:** Comprehensive and convenient – Local communities, businesses and visitors have access to a well-designed, comprehensive and convenient network of public charge points, where these are needed.
- **Theme 2:** Meeting the needs of users –The public electric vehicle charging network works for everyone regardless of age, health, income or other needs.
- **Theme 3:** Grown with private investment – Scotland has attracted private sector investment to grow and sustain the public electric vehicle charging network.
- **Theme 4:** Clean, green energy - The public charging network is powered by clean, renewable energy and drivers benefit from advancements in energy storage, smart tariffs and network design.
- **Theme 5:** Wider sustainable transport system - People's first choice wherever possible is active travel, shared or public transport with the location of electric vehicle charge points supporting those choices.

This section of the Implementation Plan maps out draft actions required to achieve each Theme of the Vision and notes them as important in either the short-term (by the end of 2026) or medium term (by the end of 2028).

The draft Implementation Plan assumes a key role for the private sector, while noting all stakeholders should have a key focus on ensuring the right charge points are delivered in the right locations to ensure a sustainable, effective and accessible public charging network that serves all of Scotland.

The Scottish Government will monitor the delivery of the finalised actions on an ongoing basis and will review progress in 2028.

Theme 1 – Comprehensive and convenient network

Short-term actions

1. **Develop guidance on cross pavement charging:** Local authorities will develop guidance via the SCOTS network to address issues arising from the increasing demand for cross-pavement charging solutions to ensure where

possible, a consistent approach that enables the provision of cross pavement charging and supports a public charging network that works for everyone.

Responsible: Local authorities.

Background: Approximately 40% of Scottish homes have no access to off-street parking and EV users are experiencing challenges with respect to the installation and operation of cross pavement solutions.

2. **Build local capacity:** Local authorities play an essential role in delivering critical public EV charging infrastructure across Scotland and must ensure adequate resource is in place to implement local EV infrastructure Strategy & Expansion Plans, as well as handling planning and road works issues arising in relation to EV charging. Contracts with charge point operators through the EV Infrastructure Fund present an opportunity to generate income that could enable local authorities to build much needed capacity to discharge future obligations in relation to public EV charging.

Responsible: Local authorities.

Background: Local authorities have statutory duties regarding planning and road works and play a critical role in enabling public EV charging.

Medium-term actions

3. **Use open-source data to review local public EV charging provision:** Local authorities should maximise the value of the introduction of open-source data on public EV charging to review and update public EV charging Strategy and Expansion Plans to continue to drive forward local public EV charging provision.

Responsible: Local authorities.

Background: Open-source data available because of the Public Charge Point Regulations 2023 will allow local authorities, to enhance their understanding of the need for local public EV charging provision.

Theme 2 – Meeting the needs of users

Short-term actions

4. **Provide accessible charging infrastructure:** Wherever possible, charge point owners and operators should seek to ensure that a reasonable proportion of charge points in existing public off-street sites, and all charge points at new off-street public sites, comply with the PAS 1899 (Electric Vehicles Accessible Charging Specification) issued by the British Standards Institution.

Responsible: Public charge point owners and operators.

Background: Public EV charging must meet the needs of all users whilst ensuring the commercial viability of sites and the continued expansion of provision at pace and at scale.

5. **Agree quality standards that go beyond UK regulations:** The Public Charge Point Regulations 2023 play an important role in driving quality standards, but public charge point owners and operators should look to develop quality standards that go beyond these regulations to support great user experiences. This could be through key performance indicators developed through concession contracts developed as a result of the EV Infrastructure Fund, or through a quality charter developed by charge point owners and operators.
Responsible: Public charge point owners and operators, and local authorities.

Background: Improving user experience of public EV charging will support consumer confidence in public EV charging as we move towards the mass adoption of EVs.

6. **Ensure an affordable network:** Tariffs should be fair, sustainable and enabling. Local authorities should guard against monopolistic supply situations from emerging in areas where there is limited competition by ensuring that any public procurement, including that which is supported through the EV Infrastructure Fund, includes appropriate mechanisms to review and agree tariffs that are fair, sustainable and enabling. Consideration should also be given to supporting flexible and off-peak tariffs where practical.
Responsible: UK Government, CMA and local authorities.

Background: The UK Government have made regulations governing public EV charging (Public Charge Point Regulations 2023). The Competition and Markets Authority ensures fair competition. Market forces also have an impact on costs, particularly where there is limited competition.

7. **Convene key stakeholders to identify measures to continue to improve the consumer experience:** Bring together key stakeholders with an interest in the consumer experience of EVs and public EV charging to identify and address key barriers to high quality consumer experiences and improve understanding and awareness.

Responsible: Scottish Government and Consumer Scotland.

Background: Improving user experience of public EV charging will support consumer confidence as we move towards the mass adoption of EVs.

Theme 3 – Increase private investment

Short-term actions

- 8. Continue to enable private investment in public EV charging:** The public sector will continue to engage with charge point operators and their funders to ensure that key barriers slowing or preventing investment are understood and appropriate interventions actioned to deliver the route map. Views of all stakeholders are sought through this consultation on the interaction between EV charging and the planning system.

Responsible: Local authorities, public sector agencies and the Scottish Government.

Background: The scale of the investment required to meet growing demand for public EV charging cannot be met by public funding alone. Options for addressing current barriers to private investment should therefore be fully explored.

- 9. Collaborate to remove barriers to grid connection:** Charge point operators and electricity distribution network operators should continue to collaborate on shared actions to ensure grid connection applications can be processed as quickly as possible. The Scottish Government will continue to facilitate engagement through relevant forums such as the Strategic Transport Electrification Group.

Responsible: Distribution Network Operators, the National Energy System Operator, charge point operators, and the Scottish Government.

Background: There is a need to align grid connection processes with the needs of public EV charging in order to deliver critical infrastructure at the pace and scale required to meet forecast demand.

- 10. Continue transition to a public charging network that is largely financed and delivered by the private sector:** With support provided through the EV Infrastructure Fund and leveraging existing public EV charging infrastructure previously funded by the public sector, local authorities will continue to deliver projects establishing concession contracts with private sector delivery partners, growing the public EV charging network across Scotland.

Responsible: Local authorities.

Background: To deliver a public EV charging network that meets the needs of current and future users, it is essential to continue the transition away from a publicly funded delivery model to one that leverages public funding and existing infrastructure to attract private sector investment and continue to expand the public EV charging at pace and at scale to meet current and future needs.

Theme 4 – Energy

Short-term actions

11. Support activities to reduce connection costs impacting commercial

investment: Views of all stakeholders are sought through this consultation on creating a stronger business case for private sector investment in sites that are currently seen as more marginal, lower traffic locations by identifying ways to reduce network connection costs.

Responsible: Charge Point Operators, Distribution Network Operators and Ofgem.

Background: High costs significantly impact on the commercial viability of sites and limit the business case for commercial investment in public EV charging in locations such as rural and island communities.

Medium-term actions

12. Facilitate collaboration to address challenges in delivering public EV

charging: Bring together key stakeholders – including energy providers, network operators, local authorities, public charge point operators and trade bodies – to address challenges and develop better market forecasts to better support the more rapid deployment public EV charging.

Responsible: Scottish Government

Background: Convening stakeholders to identify shared approaches to addressing common challenges will play an important role in breaking down the barriers to delivering the public EV charging required to meet Scotland's future needs.

13. Mapping of multi-modal, multi-energy locations: Harness open-source data to explore opportunities in locations where there is a need to combine modes of travel on one site and/or the need to combine an energy baseload and local energy generation to make the economic case for investing at specific sites which may be constrained.

Responsible: distribution network operators and charge point operators.

Background: Better data can assist private sector investment in new sites that support better integration with other transport modes, such as public transport interchanges, to enable onward journeys by public transport, as well as sites that may be grid constrained, but which offer opportunities for local energy generation and storage.

Theme 5 – Wider sustainable transport system

Short-term actions

- 14. Policy certainty:** Maintain a consistent policy approach to transport decarbonisation, providing confidence to investors with regard to the direction of travel and enabling sustained private sector investment to ensure the right charge points in the right locations to enable the transition to EVs with identified timescales.

Responsible: UK Government and Scottish Government.

Background: Policy certainty regarding the decarbonisation and electrification of transport plays a critical role in giving the private sector the confidence to make significant long-term investments in public EV charging infrastructure.

- 15. Use open-source data to monitor the rollout of public EV charging across Scotland:** Use open-source data on public EV charging to develop a data set that will aid in identifying potential gaps in the provision of public EV charging as the transition to EVs continues, using this data to support stakeholders to address issues as they emerge. Review progress against existing Government targets and consider revised targets as the market for public EV charging continue to develop.

Responsible: Scottish Government.

Background: Ongoing monitoring is essential to support the delivery of Scotland's Vision for public EV charging, and this Implementation Plan.

Background

Scotland's public charging network today

As a direct result of early investment by the Scottish Government, and increasing private sector investment in recent years, Scotland has one of the most comprehensive public charging networks in the UK today.

The development of public charging to date

The delivery of public EV charge points underpins the adoption of EVs in Scotland and the phasing out of Internal Combustion Engine (ICE) vehicles – a key part of meeting Scotland's net zero targets, with cars and vans accounting for 17% of CO₂ emissions in 2022. Furthermore, there is a direct economic impact via boosting accessibility and ensuring Scotland's transport infrastructure is fit for purpose for years to come. Notwithstanding these positive developments, we recognise that drivers do still encounter a range of issues with public EV charging, including issues around the availability, reliability and affordability of public EV charging.

In 2011 the Scottish Government took the bold step of investing in public EV charging infrastructure ahead of demand to build confidence in the early adoption of EVs. Since 2011, the Scottish Government has invested over £65 million in public EV charging. This public EV charging infrastructure was initially free to use with the aim of supporting early EV adoption and was operated through the publicly funded ChargePlace Scotland network.

Private sector investment has played a role in growing Scotland's public EV charging network since the first modern EVs appeared on Scotland's roads in the 2010s, however in the early years of EV adoption, the vast majority of public EV charging infrastructure was funded by the Scottish Government. Local authorities played a key role in delivering this critical public EV charging infrastructure across Scotland and are expected to continue to play a critical role going forward.

By the end of 2021, Scotland had close to 4,000 public EV charge points. However, research undertaken by the Scottish Futures Trust for the Scottish Government in the same year, suggested that if Scotland was to have a public charging network that met its future needs, then the scale and pace of investment in public EV charging infrastructure would need to be accelerated to meet growing demand. The report suggested that in the coming years, new delivery models that enabled increasing private sector investment would be required.

In response, in 2022 we published our draft vision for the public EV charging network, identifying that the private sector was expected to play a much greater role in delivering public EV charging infrastructure going forward, and that significant private investment would be required to grow the network at pace and scale.

At the same time, we signalled we would continue to invest in public EV charging, whilst also enabling private sector investment through the multi-year £30 million EV Infrastructure Fund. This fund has supported all of Scotland's Local Authorities to develop EV infrastructure Strategy and Expansion Plans identifying local current and future EV infrastructure requirements, and is supporting them to work in partnership with the private sector to leverage additional private investment to address these requirements and continue to grow public EV charging across Scotland. The public funding specifically targets those parts of Scotland less likely to see private sector investment in public EV charging infrastructure, such as rural and island communities and urban areas without access to off-street parking.

From 2022 onwards, tariffs were introduced across the public EV charging infrastructure on the ChargePlace Scotland network to help transition to a sustainable and fair approach to the long-term delivery of public EV charging. The ChargePlace Scotland network acted as an early catalyst for the development of public EV charging infrastructure across Scotland, but to increase the pace and scale of the expansion of public EV charging infrastructure it is necessary to transition away from the current delivery model, which means that the contract to operate the network will not be renewed once the current one expires. This shift will offer drivers much greater choice, and planning is already underway to migrate charge points to alternative public charge point networks by the end of 2025.

The introduction of tariffs on the ChargePlace Scotland network helped drive a significant increase in private sector investment to develop public EV charging infrastructure in Scotland. The Scottish Futures Trust estimates that the private sector invested approximately £25 million to £35 million in expanding public EV charging infrastructure in Scotland in 2023 and is expected to have invested between £40 million and £55 million in Scotland in 2024. In mid-2023, when we published our finalised vision for public EV charging, around two thirds of public EV charging in Scotland was owned or funded by the public sector, but now at end of 2024 with private sector investment fuelling rapid growth in public EV charging, over half of all public EV charging in Scotland is owned and funded by the private sector.

As a result of the legacy of early investment by the Scottish Government, and rapidly increasing private sector investment, today Scotland has one of the most comprehensive public charging networks in the UK. Scotland now has more than 6,000 public charge points, and the [latest official UK Department for Transport statistics \(from July 2024\)](#) show that Scotland has the highest number of public

chargers per head of population of any part of the UK, except London, and the most rapid charge points of any part of the UK.

A key purpose of this Action Plan is to identify the shared actions required to address these issues and ensure that Scotland continues to lead the UK on public EV charging.

Public charge point numbers

Scotland has over 6,000 public charge points today. The Scottish Government's 2024 Programme for Government includes the commitment to set a route map for enabling the delivery of approximately 24,000 additional public electric vehicle charge points by 2030 to support the transition to EVs. Research commissioned by the Scottish Government and undertaken by KPMG suggests that by 2030, Scotland will need between 22,000 and 30,000 public charge points depending on vehicle technology, levels of car use, and the impact of regulation on the speed of EV adoption.

| Forecasted number of public charge points | | | | | |
|---|---------|--------------------------------|----------------|---|---|
| Year | Base | Improved Vehicle Functionality | Reduced car km | Improved vehicle functionality and reduced car km | Improved vehicle functionality, reduced car km, and sped up mandate |
| 2024 (Feb) | 5,077 | 5,077 | 5,077 | 5,077 | 5,077 |
| 2030 | 29,724 | 24,290 | 23,755 | 21,889 | 22,804 |
| 2035 | 66,840 | 51,622 | 53,449 | 43,889 | 46,307 |
| 2040 | 104,924 | 76,297 | 83,920 | 61,029 | 65,676 |

Table 1: Forecasted number of public chargers in Scotland (2024 – 2030). Source: KPMG.

The upper end of this estimate informs the Scottish Government policy of enabling the delivery of an approximate 24,000 additional charge points by 2030. With over 6,000 public charge points today, this would result in approximately 30,000 public charge points by 2030. [A public EV charge point forecast developed by Cenex](#) for the National EV Insights and Support (NEVIS) tool kit suggests a similar range of charge point numbers by 2030, depending on demand for EVs and the provision of more numerous slower charge points, or less numerous rapid charge points.

Stakeholders made clear the need for better performance indicators to demonstrate delivery against the public charging Vision. While the national 2030 public charge point target is being retained, we emphasise that the target should be seen as a guide only, that the required number of charge points could be between 22,000 and 30,000, and that a key priority is to focus on ensuring the provision of the right charge points in the right locations across Scotland.

As outlined in our Vision for the public EV charging network, the private sector is expected to play a pivotal role in delivering the route map below by 2030 (as shown in fig.1). Scotland is already seeing significant levels of private investment in public EV charging infrastructure and this trend is expected to continue as EV uptake increases and the market for public EV charging infrastructure matures.

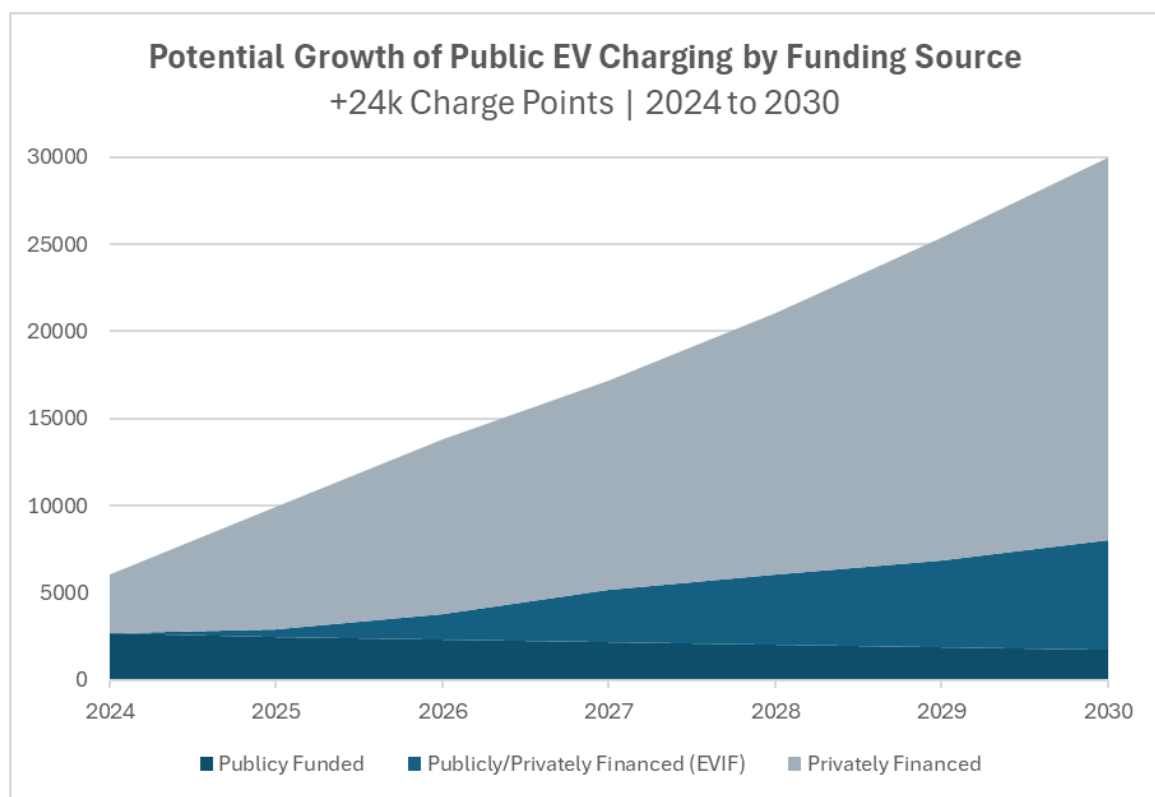


Fig 1: Forecast delivery of public EV charging in Scotland by funding type (2024-2030) Data source: Scottish Government and Zap Map.

Figure 1 above illustrates this trend. At the base of the graph, it illustrates the impact of early investment by the Scottish Government which has enabled the delivery of around 2,800 public EV charge points through the ChargePlace Scotland network. As these charge points get older, they will gradually be replaced with new charge points largely funded by the private sector. It also shows the role that standalone private investment has played to date, demonstrated by the fact over 3,000 charge points in 2024 have been privately financed – bringing the total size of the public charge point network today to just over 6,000 charge points. The middle layer of the

graph shows the contribution of the EV Infrastructure Fund, which is expected to support the installation of around 6,000 additional public EV charge points by 2030 through a combination of public and private funding. EV Infrastructure Fund-facilitated investment and standalone private investment grow out to 2030, resulting in a network reaching approximately 30,000 charge points by 2030.

The growth of the public EV charging network will not cease in 2030, and it is essential that steps are taken to develop a delivery landscape that will support investment in EV charging long into the future.

Whilst this forecast level of growth may appear exceptional, as stated above, Scottish Futures Trust estimates that the private sector invested approximately £25 million to £35 million in expanding public EV charging infrastructure in Scotland in 2023 and is expected to have invested between £40 million and £55 million in expanding public EV charging infrastructure in Scotland in 2024. Private sector plans for investing in Scotland do not end in 2024, and whilst plans for investment in future years remain commercially confidential, consultation suggests considerable levels of investment is planned for future years.

According to [ZapMap](#) Scotland experienced 49% growth in public EV charging between June 2023 (4,023 public charge points) and October 2024 (6,007 public charge points). This rapid growth was largely driven by private sector investment. However, delivering approximately 24,000 additional public charge points by 2030 will necessitate an 8-fold increase in the level of private sector investment over the next five years.

Consultation with public charge point operators and analysis by [industry body ChargeUK](#) suggests charge point operators are already working to meet and ideally exceed current growth rates, driven by the commercial imperatives of securing market share and attracting customers. This suggests that the private sector will continue to invest in growing public EV charging infrastructure in Scotland ahead of demand driven by the transition to EVs, supported by the actions identified in this Implementation Plan.

Charging technologies

The Vision for Scotland's Public Electric Vehicle Charging Network focuses on public EV charging for passenger cars and vans up to 3.5 tonnes. The Public Charge Point Regulations 2023 defines a public charge point as one that is available for use by members of the general public and not those where access is restricted to owners or occupiers of premises or certain vehicle types, e.g. workplace charging for delivery vehicles or resident only charging schemes.

A variety of different types of public charge points exist, and they are often distinguished by power output. The table below provides a high-level summary.

| Speed | Typical power | Typical charging times | Typical uses | Typical locations |
|-------------|---------------|---|---|---|
| Slow | 3-7kW | 150 miles of range in around six to seven hours | Homes, workplaces, longer stay public car parks | Ideal when vehicles are parked for long periods such as overnight |
| Fast | 8-49kW | 60 to 80 miles of range in around two hours | Public car parks, longer stay enroute charging | Ideal when vehicles are parked for several hours |
| Rapid | 50-149kW | 150 miles in around 45 minutes or less | Public car parks, enroute charging | Ideal when vehicles are parked for less than an hour |
| Ultra-rapid | 150kW+ | 250-600 miles in around 10 to 40 minutes | Rapid charging hubs close to trunk roads and larger urban areas | Location close to the trunk road network |

Table 2: Common types of public EV charging.

According to LCP Delta and ZapMap (data used under licence), the most common types of EV charging are home and workplace charging, with public EV charging currently accounting for around 5% of all charge points. At the time of publication, according to ZapMap 1,565 of Scotland's 6,007 public charge points are rapid or ultra rapid charge points and, on a per head of population basis, Scotland has the highest provision of rapid and ultra rapid charge points of any part of the UK.

This infrastructure is unevenly distributed across Scotland, with the majority of public EV charging infrastructure concentrated in Scotland's urban areas, across the Central Belt of Scotland, and along the trunk road network. At the same time, some of Scotland's islands, such as Orkney and Shetland, are relatively well supplied with public EV charging infrastructure, with more public charge points on a per head of population basis than some of Scotland's more urban areas.

This highlights an important point that, whilst the overall number of public charge points may be an important measure of progress, it is not the only, nor necessarily the most important, measure. Stakeholders with whom we've engaged in the development of this draft Implementation Plan largely supported the view that the

Scottish Government should not simply rely on a single numerical target for the delivery of public EV charging but should instead work with partners to ensure Scotland has the right charge points in the right locations so that the public EV charging network works for everyone.

Demand for public charging is directly influenced by the availability of other types of EV charging. Home and workplace charging complement the public charging network and can also reduce dependency on public charging, depending on how far an EV can travel on a single charge and how it is used. [Consumer Scotland](#) research in 2023 shows that 80% of existing EV users tend to charge at home.

On average, around 60% of homes across Scotland have access to off-street parking but this varies across the country. In some local authority areas, it is as high as 80% but in others it is lower than 40%. Whilst it is likely that home and workplace charging will continue to play a major role in charging electric cars and vans, public EV charging will need to increase as the uptake of EVs increases. A comprehensive and affordable public charging network will also be essential for those who cannot charge at home and those who need to undertake longer journeys either from home or their place of work.

Research suggests that by 2030, the percentage split of charger types across Scotland will largely remain unchanged, however public charging will account for a greater market share as those without off-street charging enter the market.

Demand for electric vehicles

In 2020, the Scottish Government's updated Climate Change Plan committed to phasing out the need for new petrol and diesel cars and vans by 2030.

According to latest [Scottish road transport statistics](#), there are approximately 2.7 million cars and light goods vehicles on Scotland's roads. According to UK Department for Transport data, 103,200 (3.8%) of these are plug-in electric cars and light goods vehicles (i.e. battery electric powered only by electricity, and plug-in hybrid/range-extended electric vehicles that can be powered both by batteries and fossil fuels). However, work commissioned by the Scottish Futures Trust to investigate the potential under-reporting of vehicles kept and used in Scotland suggests that these figures could be as high as 132,200 (4.9%).

Whilst these vehicles may only constitute a small percentage of the total on Scotland's roads today, their numbers are increasing rapidly. The introduction of the [Vehicle Emissions Trading Schemes](#) (commonly referred to as the "ZEV Mandate") at the start of 2024 this year has resulted in record levels of month-on-month EV sales, with sales of EVs above 20% of new car sales for successive months at the

end of 2024, according to data published by the Society of Motor Manufacturers and Traders. This legislation mandates the sales of zero emission vehicles, with a target trajectory for new cars sold beginning at 22% in 2024, increasing to 80% in 2030 and reaching 100% in 2035.

KPMG research, commissioned by the Scottish Government, suggests that the direction of current policy and technology development will result in 20-30% of all cars and vans on the road in Scotland by 2030 being battery electric and 100% by 2046. It suggests that by 2035, most electric cars will have a range of 280+ miles and that by 2040 the majority will have ranges of 400+ miles, equalling the range of today's petrol and diesel cars.

Consumer Experience

Consumer experience is critical to the continued expansion of public EV charging in Scotland. Negative experiences can have a significant impact on driver confidence in public EV charging infrastructure specifically, and in transitioning away from petrol and diesel vehicles to EVs more generally.

Consultation with stakeholders suggests that improving public education and awareness could have a big role to play in improving the consumer experience around EVs and public EV charging, particularly at a time when there is a high preponderance of negative news stories about EVs and EV charging, despite research suggesting that the experience of the majority of consumers is overwhelmingly positive. As the consumer experience depends on multiple factors, the following sections provide an overview of four important elements emanating from the original Vision: availability, accessibility, reliability and affordability.

Availability

The [availability of public EV charging](#) is critical in creating the confidence that enables drivers to transition to EVs. As already stated, due to the legacy of early investment by the Scottish Government, and rapidly increasing private sector investment, today Scotland has one of the most comprehensive public charging networks in the UK.

However, we recognise that there is a continuing need to expand public EV charging, and that is why we are continuing to invest in public EV charging, whilst also enabling private sector investment through the multi-year £30 million EV Infrastructure Fund. This fund supports local authorities to work in partnership with the private sector to leverage additional private investment and continue to grow public EV charging across Scotland, with public funding specifically targeting those

parts of Scotland less likely to see private sector investment in public EV charging infrastructure, such as rural and island communities and urban areas without access to off-street parking.

Accessibility

For public EV charge points to be accessible to all users, the parking bays and the EV charge points located at those parking bays need to be designed for use by disabled users.

The Scottish Government worked with the British Standards Institute (BSI) in 2022 to develop the PAS 1899 (Electric Vehicles Accessible Charging Specification) standard. This industry standard provides specifications for the installers and operators of public EV charging infrastructure to ensure a more accessible and inclusive charging system across Scotland, and the UK as a whole. The Scottish Government will continue to work in partnership with key organisations and stakeholders to ensure that electric vehicle charge points are accessible for all users. All Scottish Government funding for installation of public EV charge points now requires grantees to demonstrate appropriate measures will be taken to meet requirements and recommendations set out in the PAS 1899. standard.

Most of Scotland's public EV charge points were installed prior to the publication of the PAS 1899 standard and public EV charge point operators and owners need to give due consideration of how existing infrastructure can be upgraded to accommodate the needs of disabled users.

Given the additional space required to provide public EV charging built to the PAS 1899 standard, and the space-constrained nature of many older public EV charging sites, consideration should be given as to how best to accommodate public EV charging meeting the PAS 1899 standard, whilst also avoiding a significant reduction in public EV charging provision which could harm EV transition and reduce the viability of a site.

Reliability

The Scottish Government recognises how important a reliable public EV charging network is for instilling confidence in drivers. Most faults are transient and, in most cases, require no physical intervention. This means that a high proportion are quickly resolved. The overall reliability across the publicly-funded [ChargePlace Scotland network](#) is typically very good with the entire network up and running between 95% and 98% of the time each month. Reliability figures are not currently available for other public charge point networks, but it is important to recognise that even very

occasional issues can have a significant impact on confidence in the public charging network.

The UK-wide [Public Charge Point Regulations 2023](#), aimed at improving the consumer experience of public EV charging, came into force in November 2023 and were phased in during 2024, with the requirement that all public charge point operators maintain 99% reliability over their whole network introduced in November 2024. This will be crucial in building public confidence as we move towards the mass adoption of EVs, and it's critical that charge point operators and charge point owners comply with these regulations to ensure that EV drivers experience the reliable service they have every right to expect.

Affordability

Whilst at present they typically have higher upfront costs, EVs tend to be less expensive to own than petrol and diesel vehicles, once whole life costs such as maintenance are considered. The affordability of EV charging, including public EV charging, has a significant impact on relative affordability of EV ownership.

There are several different factors that shape the cost of public EV charging including wholesale electricity prices, a higher rate of VAT (20%) on public EV charging than domestic electricity (5%), the cost of purchasing or leasing the land on which public charge points are located, the cost of network connections and supply upgrades, and the cost of installing, operating and maintaining the charge points. Higher powered rapid chargers tend to cost around 50% more to install and operate than slower chargers and this is reflected in the higher tariffs for energy from these charge points.

High EV charging costs can disincentivise EV ownership, but charge point operators also need to ensure they cover their costs and make a return on their investments. Industry consultation suggests that the investment case for both low and high-powered EV charging necessitates taking a long-term view with some operators suggesting it could take seven to ten years to break even.

Variable pricing models such as off-peak tariffs may offer one solution that might help consumers manage costs and enable operators to maximise the utilisation of their charge points. Supported by the EV Infrastructure Fund, local authorities are in the process of developing concession contracts to partner with charge point operators to continue to expand public EV charging infrastructure and should guard against monopolistic supply situations emerging and in areas where there is limited competition, as lack of competition could have an impact on the affordability of public EV charging.

Current regulatory environment

The regulatory environment for public EV charging is divided across the UK, with many key powers relating to public EV charging currently sitting with the UK Government.

Vehicle Emissions Trading Schemes

Whilst pertaining to the sale of vehicles rather than charging infrastructure, the Vehicle Emissions Trading Schemes (VETS) Order 2023 (often referred to as the “ZEV Mandate”) places legal obligations on car and van manufacturers to sell new zero emissions vehicles each year, ramping up to 80% of all new cars sold, and 70% of new vans, being zero emissions by 2030. [VETS](#) is devolved legislation under the Climate Change Act 2008, which means that the Scottish Government and other Devolved Governments work in partnership with UK Government to implement the VETS Order.

Whilst it pertains to the sale of vehicles rather than charging infrastructure, VETS legislation provides the private companies investing in public EV charging infrastructure in Scotland with certainty over the transition to EVs. Powers relating to vehicle licensing and powers to ban the sale of petrol and diesel vehicles are reserved to the UK Government.

Public Charge Point Regulations

The Public Charge Point Regulations came into force on 24 November 2023. These regulations cover provision of contactless payment, payment through third party roaming providers, reliability requirements, provision of a helpline, open data, price transparency and reporting to the Office for Product Safety and Standards (OPSS) as well as the Office for Zero Emission Vehicles (OZEV). The UK’s Competition and Markets Authority (CMA) also plays a role in ensuring fair competition in the public EV charging market.

Value Added Tax

Taxation of [the electricity provided via public EV charging infrastructure](#) are levied through standard rate (20%) Value Added Tax (VAT). VAT is looked at further in a later section of this Implementation Plan.

Renewable Transport Fuel Obligation

Powers to regulate renewable fuels and electricity used for transport through the [Renewable Transport Fuel Obligation](#) are reserved to the UK Government.

The GB energy market and grid infrastructure

Across Great Britain (GB), regulation of the energy market and grid infrastructure is centralised. While Scotland has some say over aspects of energy policy, the strategic planning and regulatory oversight largely rest with UK-level authorities. The Scottish Government retains influence over certain areas, such as decisions on onshore energy production including renewables, and environmental policies impacting energy production and distribution.

Scotland's strengths in renewable resources like wind, hydroelectric, and tidal power have been harnessed to increase the share of renewable energy used in Scotland. However, the current GB wholesale electricity market is not fit for the delivery of our net zero ambitions and reforms are required to help reduce system costs and break the link to volatile fossil fuel prices. Reforms must also ensure that system efficiencies and the low generating costs of renewables are passed through to consumers in the form of lower costs. The Regional Energy System Plans (RESP) and National Energy System Operator (NESO) are soon to bring dedicated regional and national oversight for energy infrastructure. RESP in Scotland could support better regional coordination, enabling strategic alignment with local energy needs and capacity for renewables. NESO, with its UK-wide perspective, allows Scotland to benefit from comprehensive grid oversight.

Building Regulations and Permitted Development

Whilst not directly relating to public EV charging, [amendments to the Building \(Scotland\) Regulations 2004](#), introduced in 2022, require new domestic and non-domestic buildings, and existing non-domestic buildings, with parking to have a minimum level of EV charging infrastructure. Given the importance of home and workplace charging to EV drivers, these regulations are important in complementing the public EV charging network.

Existing [Scottish permitted non-domestic development rights under the Town and Country Planning \(General Permitted Development\) \(Scotland\) Order 1992](#) enable the installation of EV charging for off-street parking. This is most likely to enable the provision of lower powered charging as higher-powered charge points are too large and require additional energy infrastructure not covered by permitted development

rights, therefore requiring planning permission. Just as local authorities have and will continue to play a key role in delivering critical public EV charging infrastructure across Scotland, local authorities have statutory duties regarding planning and road works, and they play a critical role in enabling new public EV charging through Scotland's planning system.

The [Scottish Road Works Commissioner](#) is Scotland's regulator of road works, and oversees improvements to the planning, co-ordination and quality of road works in Scotland. The Commissioner plays a key role in setting standards for all road works, including those needed to install EV public charging infrastructure.

Planning

The Scottish Government's [National Planning Framework 4](#) (NPF4) supports the provision of EV charging infrastructure, especially when powered by renewable energy, and supports public transport infrastructure including multi-modal hubs. NPF4 sees EV infrastructure as part of a wider system response to net zero that also strengthens active travel and multi-modal hubs such as railway stations, bus stations, ports and harbours.

Scotland's [Local Development Plan guidance](#) states that plans have a role in supporting the efficient roll-out of EV charging infrastructure by identifying potential locations for charging hubs, especially to support rural communities, and that careful consideration should be given to where these are located, ensuring best use of renewables and the electricity network.

Public charging delivery landscape

Public charge point operators pursue a range of different business models, targeting specific customer types, journey types and various ownership and operating models, investment payback timeframes and utilisation levels. The market and the business models employed are continuing to evolve, driven by the most commercially viable operating models. Operators closely monitor EV uptake, seeking to match supply of charging facilities with demand for EVs.

To date, private sector investment has mainly targeted the installation of rapid and ultra-rapid charging to support enroute charging close to key trunk roads and a mix of slower and faster destination charging at shopping centres, retail parks, sports, and leisure facilities. There is currently significant competition for sites offering high power, enroute charging close to high traffic routes, such as Scotland's busier trunk roads. In the current market, these locations are seen as some of the most profitable. Scottish Futures Trust estimates that private sector has funded 52% of

high-powered rapid chargers in Scotland and almost all new rapid charging is being funded by the private sector.

Public EV charging industry body [ChargeUK](#) estimates that the members it represents have access to £6 billion of investment in public EV charging infrastructure in the UK, including Scotland, by 2030. Private investment in charge points in Scotland to date has focused on the most commercially appealing sites, but in order to deliver the EV charging infrastructure Scotland will need in 2030, private sector investment will also be needed in locations such as rural and island locations with lower traffic volumes, more rural parts of Scotland where grid connection costs are higher and urban, near-home and on-street slow charging to support EV adoption (looked at in more detail later in this plan).

In order to create a stronger business case for private sector investment in locations such as these, it may be necessary to explore ways to reduce network connection costs, explore options such as battery storage and/or on-site power generation to avoid the need for higher voltage connections and substations back to the grid, and develop new business models designed to address the needs of specific communities yet to adopt EVs or only doing so very slowly.

Energy planning and collaboration

By 2030, Scotland is expected to be in a strong position to meet the requirements for electrifying cars and vans. Analysis published by the Scottish Government in May 2022 on [demand forecasts for energy for transport](#) suggests that forecast growth in renewable electricity generation in Scotland will more than accommodate the growth in demand due to EV uptake. Both analysis by the Scottish Government and [independent analysis for industry](#) indicates that charge point numbers are set to increase exponentially. Scotland's production of renewable electricity was 71% in 2022, up from 29% in 2012. Scotland's public EV charging network is therefore very well placed to be supplied by clean, renewable energy.

However, this analysis acknowledges that energy needs to be accessible in the right place at the right time to support the charging of EVs. From a corporate energy side, there are two Distribution Network Operators (DNOs), Scottish Power Energy Networks (SPEN) and Scottish and Southern Energy Networks (SSEN). Together they have the responsibility to ensure power is provided to local areas to support the public charging infrastructure.

In addition to this, the UK energy market is changing with the introduction of the National Energy System Operator (NESO) and Regional Energy Strategic Plans (RESPs). There will soon be a RESP covering Scotland, anticipated from 2025 onwards.

Engagement with stakeholders highlighted the importance of facilitating collaboration between different sectors. For example, bringing together energy providers, network operators, and charge point operators to address challenges such as local grid capacity, planning approvals, and the integration of renewable energy sources into the charging network, ensuring that the supply of clean energy keeps pace with demand in real time.

For sites that are less commercially viable, public and private stakeholders suggest that more coordination between CPOs, DNOs, local and Scottish Government could support the identification of sites and support routes to encourage further investment, with the sharing of data on traffic and energy investments being seen as a key element to enable such collaboration.

The grid connection process is looked at in subsequent section of this Plan.

The wider sustainable transport system

The public EV charging network is an important component within the wider transport system that supports the different needs of our cities, towns, remote and rural areas and islands. Scotland's [National Transport Strategy](#) signals the requirement that the Sustainable Travel Hierarchy be embedded in decision-making by ensuring policies promote walking, wheeling, cycling, public transport and shared transport options in preference to single occupancy private car use for the movement of people. This is also to ensure alignment with the Scottish Government's [target to reduce overall car use by 20% by 2030](#), as set out in our draft route map published in 2022 (an updated route map following public consultation will be published in due course). At the national level, this Sustainable Travel Hierarchy is used to inform investment decisions and ensure transport options that focus on reducing inequalities and the need to travel unsustainably are prioritised.

At a practical level, enabling people's first choice to be active travel, shared or public transport, wherever possible, means locating and designing public EV charging infrastructure to support those choices. This can be achieved by siting public EV charging in close proximity to transport hubs and interchanges. This has the benefit of enabling people to switch between modes, for example taking the bus or train into a town centre whilst an EV charges, but it also has the benefit of maximising potential utilisation of the charge point through its siting at a location with high traffic volumes.

Loch Ryan ferry port in Cairnryan: EV charging at transport interchanges

In June 2024, FOR EV and South of Scotland Enterprise unveiled a new rapid charging hub at Loch Ryan ferry port in Cairnryan near Stranraer to support the UK's busiest domestic short sea route; Cairnryan-Belfast. This facility services both Stena Line's customers as well as the local community and provides additional charging infrastructure for use by Police Scotland.



Image 2: Source: [Scottish National Investment Bank Plugs £10M Into FOR EV \(digit.fyi\)](https://digit.fyi/)
accessed 18/10/2024

The sustainable travel hierarchy approach is central to how the Scottish Government is supporting public EV charging. We have, for example, enabled the provision of new public EV charging infrastructure at new railway stations such as Levenmouth in Fife, East Linton in East Lothian and Inverness Airport station. Equally, it is a requirement of the EV Infrastructure Fund which has supported all of Scotland's local authorities, to identify current and future public EV charging needs, and partner with the private sector to continue to expand public EV charging infrastructure. It is also a requirement that future charging provision is planned in line with the Sustainable Travel Hierarchy.

Not all public EV charging can be located in close proximity to transport hubs and interchanges, and the cost of installing new infrastructure is significant, but it is important to ensure that wherever practical, public EV charging sites are designed and located to support and enable active travel, shared transportation and public transport.

Stakeholder feedback suggests that, in order to maximise the potential for public EV charging to support active travel, shared transportation or public transport, there may be a need for greater coordination across modes to identify and exploit opportunities for greater integration of transport solutions that charge point operators may otherwise be unsighted on.

Challenges and opportunities

There are currently a number of key challenges and opportunities arising from the development of public EV charging infrastructure in Scotland.

Location-based data

Engagement with key stakeholders suggests that there is a collective need for more open sharing of location-base (or geospatial) data such as existing public EV charging (through the regulatory requirement for open data), traffic data, more accurate EV ownership data and local grid capacity. Sharing these kinds of data could aid planning, support earlier collaboration between charge point operators, distribution network operators and local authorities, and support private sector investment in new public EV charging sites.

Planning

Engagement suggests that there is a widely held view amongst charge point operators that the planning process is a key factor delaying the rollout of public EV charging in Scotland, as well as the rest of the UK. Industry body [ChargeUK](#) suggests that very few EV charging projects are refused planning permission, but the length of time required to secure planning permission can vary significantly.

Engagement with charge point operators also suggests that some planning authorities consider the addition of public EV charging into an existing car park to be “removing” parking bays from that site and therefore may refuse planning on the grounds of loss of parking bays despite proposed provision of critical infrastructure.

Network connections, supply upgrades and wayleaves

Engagement with charge point operators has highlighted a number of challenges in securing essential network connections and supply upgrades to enable public EV charging. These include energy distribution network operators having differing application processes, legal agreements, design standards, and even variations with

the same network operator where different solicitors are employed, resulting in time consuming additional work for charge point operators.

[The public charge point industry](#) is calling for a standardised grid connection agreement process and legal documents to drastically speed up the process and for priority to be given to net zero projects such as EV charging. Industry engagement has also highlighted that it can be challenging and time consuming to secure landowner permissions (wayleaves) to enable network connections and is also calling for standardised legal documents to cover land rights and access, wayleaves and substation leases.

A [Strategic Transport Electrification Group](#) has been established by the Scottish Government to draw on learning around short-term challenges to delivery and assist in medium to long-term distribution grid planning to support the electrification of transport in Scotland. The group involves Transport Scotland, the distribution network operators (DNOs), the national energy system operator (NESO) and the Scottish Futures Trust. It feeds into the Scottish Government's Local Energy Network Coordination Group which is attended by ChargeUK and other transport stakeholders.

As already stated, many powers to regulate the UK energy market and existing and future energy grid infrastructure are reserved to the UK Government. As well as working with DNOs, the UK Government and Ofgem will continue to have key roles to ensure that potential barriers to the rollout of public EV charging infrastructure are identified and addressed to ensure that Scotland is well placed to ensure it has the critical EV charging infrastructure it will require in 2030.

Value Added Tax

Concerns have been raised by consumer groups and the public EV charging industry regarding the difference in Value Added Tax (VAT) levied on domestic energy (5%) and that levied on energy provided via public EV charging (20%). The crux of the issue is that EV drivers who cannot charge an EV at home pay four times the VAT rate for their electricity from public chargers. Around 40% of homes across Scotland do not have access to off-street parking, and most households do not have access to cross pavement charging (see below), meaning these households have the disadvantage of being taxed at a higher rate for transitioning to EVs. This unequal tax burden risks disincentivising EV adoption amongst a significant proportion of Scotland's population.

As stated above, taxation of [the electricity provided via public EV charging infrastructure](#) is levied through standard rate (20%) Value Added Tax (VAT), but

there were strong views amongst charge point operators that this issue is something that should be looked at further in order to ensure a fair and just transition to EVs.

Supply chain capacity

As identified above, delivering approximately 24,000 additional public charge points by 2030 will necessitate an 8-fold increase in the level of private sector investment over the next five years. Engagement with industry suggests that steps may need to be taken now to ensure that the supply chain has the capacity to deliver this increase in activity between now and 2030. It suggests that skills and workforce shortages, combined with demand from other sectors seeking to decarbonise, could potentially pose a barrier to the rollout of public EV charging.

Industry engagement also suggests that shortages in key skills in local authorities, such as in planning and procurement, could also have a detrimental impact on delivering the level of infrastructure required by 2030. As the number of public charge points increases, there will be an increased need for electricians capable of maintaining, servicing and repairing public EV charging infrastructure. Shortages, particularly in rural and island communities, could impede service provision and result in a failure to meet regulatory requirements on public charge point reliability.

Working with the college sector agency the Energy Skills Partnership (ESP), the Scottish Government is supporting Scotland's colleges to develop the capacity to train existing qualified electricians to install, commission, service, repair and maintain high powered charging infrastructure. All of the key stakeholders involved in the delivery of public EV charging need to invest in developing the capacity to deliver the forecast increase in activity between now and 2030.

Less commercial locations

As stated above, private investment in public EV charging in Scotland to date has focused on the most commercially appealing sites, but to deliver the EV charging infrastructure Scotland will need in 2030, the private sector will need to invest in locations such as:

- Rural and urban locations with lower traffic volumes, including parts of Scotland's trunk road network in far north and west coast of Scotland.
- Locations where grid connection costs are higher, including more rural parts of Scotland.
- Near-home and on-street slow charging to support EV adoption amongst those without access to off-street parking.

Feedback from [industry trade body ChargeUK](#) suggests that, to improve the commercial viability of sites, steps should be taken to address significant increases in the standing charges for grid connections resulting from Ofgem's Targeted Charging Review (December 2019). These standing charges are a major factor in a site's viability and are fixed amounts that must be paid regardless of the amount of energy used. Stakeholders report that they are a major factor in a reluctance to invest in sites other than those that are the most commercially appealing. There is also a lack of transparency, with operators unaware of the level of standing charges that will be applied until a site has been constructed. CPOs have also called on the UK Government to include renewable electricity in the UK Government's Renewable Transport Fuel Obligation to improve the business case for investment.

As stated above, to create a stronger business case for private sector investment in sites that are currently seen as more marginal, lower traffic locations, it may be necessary to identify ways to reduce network connection costs, explore options such as battery storage and/or on-site power generation to avoid the need for higher voltage connections and substations back to the grid.

It may also be necessary to develop new business models designed to address the needs of specific communities yet to adopt EVs or only doing so very slowly. Engagement suggests that there may be opportunities to explore making depot charging available for public use to increase the availability of public charging in locations with lower traffic volumes.

Cross pavement charging

Cross pavement charging has an important role to play in enabling EV ownership and access to home and public charging for those without access to off-street parking, but it does raise several issues including planning, maintenance, liability and how solutions interact with existing utilities. The relevant powers sit with Scotland's local authorities and, whilst there are existing examples of cross pavement charging being implemented in Scotland, currently there is no common approach across Scotland's local authorities.

For this reason, the Scottish Government is working with the [Scottish Collaboration of Transport Specialists](#) (SCOTS) network to address these issues and support local authorities to identify a consistent approach which enables the provision of cross pavement charging and supports Scotland's Vision for public EV charging infrastructure and a public charging network that works for everyone.

EV uptake

Many stakeholders highlighted the importance of government involvement to ensure that the transition to EVs is both equitable and just; to avoid relying on market forces alone which may not result in the necessary infrastructure being delivered meaning some groups in society being left behind.

Research conducted by KPMG for the Scottish Government (unpublished at this time) suggests that early EV adopters are by and large concentrated in the central belt and in the east and northeast of Scotland, with access to off-street parking and with higher-than-average household incomes. The Scottish Government's £30 million EV Infrastructure Fund is supporting investment in public EV charging infrastructure in those parts of Scotland less likely to see private investment in public EV charging infrastructure such as rural areas and the more deprived urban areas. This fund is working to crowd in private sector investment and avoid investment potentially neglecting certain areas.

KPMG research suggests that by 2030 urban areas with lower-than-average income levels and with no access to off-street parking and households in more rural communities may have significantly lower rates of EV uptake unless this continues to be an area of consideration and focus. Access to lower cost EVs, together with more equitable charging costs for those without access to on or off-street home charging, could have a significant impact on adoption levels in these areas. A standardised approach to enabling cross pavement charging in these areas could also have a significant impact in supporting EV adoption.

Scotland is the only part of the UK that currently supports consumers to purchase EVs. Since its launch in 2011, the Scottish Government's Low Carbon Transport Loan has supported over 8,400 individuals and businesses across Scotland, providing over £233 million in interest-free loans to help support the transition to zero emission vehicles. The scheme currently provides interest free loans for used electric vehicles costing £25,000 or less for households with a gross household income that doesn't exceed £50,000 per annum, and those living in rural and island communities. The loan also supports the purchase of new or used electric taxi and private hire vehicles.

A continued focus on ensuring a Just Transition to EVs will be essential to ensure that parts of Scotland are not left behind.

Next steps and how to respond

The timeline for the development of the Vision for Scotland's Public Electric Vehicle Charging Network, and the draft Implementation Plan are provided below, with the current consultation highlighted in bold:

- Publication of draft Vision and stakeholder engagement: January 2022.
- Publication of Final Vision: June 2023.
- Implementation Plan stakeholder engagement, including workshop: Summer 2024.
- **Publication of draft Implementation Plan and consultation launch: December 2024.**
- Publication of Final Implementation Plan: Summer 2025.
- Monitoring of Implementation Plan Actions commences: Summer 2025.
- Implementation Plan progress review: 2028.

Consultation questions

Consultation questions are provided below to support individuals and organisations in responding to the public consultation and to help shape the final version of this draft Implementation Plan.

1. Do you think we have correctly considered the role of the private sector in delivering future public EV charging infrastructure? If not, what else should we consider?
2. The public EV charging infrastructure must scale up rapidly to meet future EV demand and can do so with private sector investment. Do you agree with this assessment of public EV charging infrastructure as it exists in Scotland today? If not, why not?
3. How would you approach the challenge of encouraging public charge point operators to invest in more marginal, lower traffic locations such as rural and island communities and lower income neighbourhoods in urban areas?
4. Are there specific barriers or opportunities related to the rollout of public EV charging across Scotland you would like to highlight that haven't been covered in this document?
5. Do you agree or disagree with the actions in this draft Implementation Plan and the key stakeholders they are attributed to? Please provide additional information.
6. Are there any key stakeholders in the delivery of public EV charging that you believe should have greater prominence in the Implementation Plan?
7. Are there any key aspects of the consumer experience of public EV charging that you believe should have greater prominence in this document?

8. Is there any other feedback you would like to provide on the draft Implementation Plan?

Consultation is an essential part of the policy making process. It gives us the opportunity to seek your opinions. This consultation details issues under consideration and asks you questions about what we are proposing. Responses will be analysed and used as part of the policy making process, along with a range of other available information and evidence.

How to respond

To encourage wide participation, the Scottish Government has created a number of ways for you to engage with this consultation. You can respond online, by email or by post. Details on how you can do this are highlighted below:

- **Online.** You can use the response form on the Scottish Government's consultation hub, [Citizen Space](#). You can save and return to your response at any time while the consultation is open. Please ensure your response is submitted before the consultation closes at midnight on 14 March 2025. You will automatically be emailed a copy of your response after you submit it. If you choose this method, you will be directed to complete the Respondent information Form, which lets us know how you wish your response to be handled and whether you are happy for it to be made public.
- **Email.** Send us your response in an email to: EVPCN@transport.gov.scot. Please include a completed Respondent Information Form (Annex C).
- **Post.** Send your response to:
Draft Vision Implementation Plan Consultation,
Electric Vehicle Policy and Infrastructure Team,
Transport Scotland,
George House,
2nd Floor,
36 Hanover Street,
Glasgow
G1 2AD.

The deadline for responses is 14 March 2025.

If you need support in answering this consultation or have a query about the consultation process, you can send your query to: EVPCN@transport.gov.scot, or in writing to the postal address provided above for postal consultation responses.

Next Steps

After the consultation has closed, we will analyse all of the responses received and use your feedback to help develop the final Implementation Plan. We will also publish responses at [Scottish Government consultations - Citizen Space](#), where we have been given permission to do.

The responses to the consultation and analysis will be published in due course.

Annex A

Integrated Impact Assessment (IIA)

An integrated Impact Assessment (IIA) is published alongside this draft Vision Implementation Plan. It considers the impact of the 'parent policies' that have led the Scottish Government to publishing the Vision and this draft Vision Implementation Plan.

The IIA recognises that public charging infrastructure sits under the Scottish Government's parent policies: updated Climate Change Plan, the National Planning Framework, our National Transport Strategy 2, as well as the Energy Strategy.

The IIA considers the impacts of the actions in this document which are the responsibility of the Scottish Government. In doing so it summarises the relevant existing impact assessments developed to inform the above policy areas that directly or indirectly support Scotland's Vision for public EV charging infrastructure.

Future growth of the public EV charging network in Scotland will be led by the private sector. The Scottish Government's key role will be in enabling this investment working in partnership with key stakeholders that share collective responsibility for delivering public EV charging.

We consider that the responsibility to lead on achieving themes one to four sits with stakeholder groups including public charge point operators, local authorities, and distribution network operators (DNOs). The Scottish Government will continue to monitor and support actions under all five of the Vision's themes, with a particular emphasis on Scottish Government leadership on the actions under theme five (the Wider Sustainable Transport System). The IIA therefore focuses on Scottish Government actions under theme five of the Vision.

Annex B

Roles and responsibilities

The Scottish Government and Transport Scotland

- Responsible for Scottish planning policy.
- Responsible for devolved transport policy and legislation.
- Responsible for Scotland's Vision for public EV charging infrastructure.
- Responsible for Just Transition policy.
- Responsible for highways and trunk roads.
- Supports regulatory assessments by monitoring the market and proposing new policy instruments.

The UK Government, including the UK Department for Transport (DfT) and the Office for Zero Emission Vehicles (OZEV)

- Responsible for the Public Charge Point Regulations 2023, which cover payment, reliability, and pricing transparency of public EV charging.
- Responsible for policy and planning for the UK energy network.
- Leads a four-nation approach to the Vehicle Emission Trading Scheme (VETS), phasing out the sale of petrol and diesel cars and vans, and mandating increased EV sales.

British Standards Institute (BSI)

- Responsible for setting industry-wide standards, including in particular the PAS1899 standard for accessible charge points.

Charge Point Operators (CPOs)

- Responsible for funding, building, and operating public EV charging infrastructure.
- Set tariffs and ensure accessibility, safety, and customer service.

Consumer Scotland

- An independent statutory body established by the Scottish Parliament to advocate for consumers and represent their interests.

Disability and accessibility charities and NGOs

- Responsible for providing non-statutory guidance on accessible charging infrastructure.
- Address street clutter and interaction with pedestrians and vulnerable road users.

Utilities

- Responsible for electricity transmission and distribution, network connections and supply upgrades. Distribution Network Operators (DNOs) specifically look after lower-voltage connections to the distribution network.

Electric Vehicle Association Scotland (EVAS)

- Represents the interests of electric vehicle users in Scotland.

Energy Saving Trust (EST)

- Responsible for stakeholder engagement and managing of consumer incentives on behalf of the Scottish Government.

Forums through which local authorities engage on public EV infrastructure:

- **COSLA:** Comprising all 32 Scottish local authorities, responsible for providing political leadership for all local authorities.
- **Association of Public Service Excellence (APSE) Scotland:** Supports local authorities in transitioning to EV fleets and alternative fuels, focusing on decarbonising public sector transportation and waste management services to meet Scotland's climate goals.
- **Heads of Planning Scotland (HOPS):** Comprising senior planning officers from local authorities and national park authorities, promotes planning at local and national levels by providing a forum for discussion and study of planning issues.
- **Local Authority Building Standards Scotland (LABSS):** A group for Scotland's local authorities' facilities and buildings professionals, focused on ensuring that building projects meet regulatory standards and providing guidance to verifiers, designers, and the public.
- **The Scottish Collaboration of Transport Specialists (SCOTS):** Comprising Scotland's 32 local authorities and seven regional transport partnerships, collaborates to enhance transportation policy, professional development, and infrastructure safety.

Landowners

- Responsible for providing land or access to enable charge point operators to build and operate public EV charging infrastructure.

Local Authorities – 32 individual authorities in Scotland

- Responsible for local roads.
- Responsible for local planning policy.
- Responsible for local public EV charging strategy and expansion plans, setting out local public charging requirements and approaches to attract private investment.
- Key landowner (roads, public car parks, and buildings) that can enable on- and off-street public EV charging.
- Responsible for access to road works.

Motability Scotland

- Has two arms: Operations and Charity. The Charity arm advocates for improved mobility access, while Operations is the commercial arm that ensures eligible disabled people can lease vehicles. It is the largest fleet provider of electric vehicles in Scotland.

Office for Product Safety and Standards (OPSS)

- Enforces the Public Charge Point Regulations 2023, aiming to ensure a consistent and positive consumer experience when using public EV charge points.

Other public bodies

- Represent the interests of sustainability and tourism through organisations such as Nature Scot, Visit Scotland etc.

Scottish Futures Trust (SFT)

- Responsible for providing market information from CPOs and DNOs on behalf of the Scottish Government.

Scottish Motor Trade Association (SMTA)

- Responsible for encouraging, promoting, and protecting the interests of its members in the motor trade industry across Scotland.

Scottish Road Works Commissioner (SRWC)

- An independent office holder established under section 16 of the Transport (Scotland) Act 2005¹. The Commissioner's aim is to improve the planning, co-ordination and quality of road works throughout Scotland.

The Competition and Markets Authority (CMA)

- An independent non-ministerial department that promotes competitive markets and tackles unfair behaviour in the UK.

Annex C

Consultation Responses

Respondent Information Form

Please Note: this form must be completed and returned with your response.

Please indicate how you wish your response to be handled and, in particular, whether you are content for your response to be published. If you ask for your response not to be published, we will still take account of your views in our analysis, but we will not publish your response, quote anything that you have said, or list your name. We will regard your response as confidential, and we will treat it accordingly.

To find out how we handle your personal data, please see our [privacy policy](#) at the bottom of the page. By submitting your response to Scottish Government you agree to our privacy policy.

1. What is your name?

2. What is your email address?

Your email address will never be published. Your email address will be used if you give permission below to be contacted again in future about this consultation.

3. Are you responding as an individual or an organisation?

Individual ☐

Organisation ☐

4. What is your organisation?

If responding on behalf of an organisation, please enter the organisation's name here.

5. The Scottish Government would like your permission to publish your consultation response. Please indicate your publishing preference:

Publish response with name ☐

Publish response only (without name) ☐

Do not publish response ☐

Information for organisations only:

The option 'Publish response only (without name)' refers only to your name, not your organisation's name. If this option is selected, the organisation name will still be published.

If you choose the option 'Do not publish response', your organisation name may still be listed as having responded to the consultation in, for example, the analysis report.

6. Do you consent to Scottish Government contacting you again in relation to this consultation exercise?

Yes ☐

No ☐

7. I confirm that I have read the privacy policy and consent to the data I provide being used as set out in the policy.

You can view the privacy policy here: [Privacy - gov.scot \(www.gov.scot\)](https://www.gov.scot/privacy)

I consent ☐



**TRANSPORT
SCOTLAND**

CÒMHDHAIL ALBA

© Crown copyright 2024

You may re-use this information (excluding logos and images) free of charge in any format or medium, under the terms of the [Open Government Licence](#).

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

Further copies of this document are available, on request, in audio and visual formats and in community languages. Any enquiries regarding this document/publication should be sent to us at info@transport.gov.scot.

Published by Transport Scotland, December 2024

Follow us:



transcotland



@transcotland

transport.gov.scot