



Rialtas na hÉireann
Government of Ireland

zevi
Zero Emission
Vehicles Ireland

National EV Charging Network

Guidelines for Local Authorities on
procurement of a consultant to develop their
Local Authority EV Infrastructure Strategy



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Acronyms and Definitions

Acronym	Term
AFIR	Alternative Fuels Infrastructure Regulation
CAF	Climate Action Fund
CPO	Charge Point Operator
BEV	Battery Electric Vehicle
CAP	Climate Action Plan
DoT	Department Of Transport
ESBN	Electricity Supply Board Networks
EU	European Union
EV	Electric Vehicle
ICE	Internal Combustion Engine
LEV	Low Emission Vehicle
PHEV	Plug-In Hybrid Electric Vehicle
RFT	Request for Tender
TEN-T	Trans-European Transport Network
TII	Transport Infrastructure Ireland
V2G	Vehicle-to-grid
ZEVI	Zero Emission Vehicles Ireland

Charge Point

A charge point is a fixed or mobile interface that allows for the transfer of electricity to an electric vehicle. It is only capable of charging one electric vehicle at a time, although it may have multiple outlets in order to accommodate different connector types.

Charge Point Categories

Category	Sub-category	Maximum Power Output	Definition
Category 1 (AC)	Slow AC charging point, single- phase	$P < 7.4 \text{ kW}$	Normal-power charging point
	Medium-speed AC charging point, triple-phase	$7.4 \text{ kW} \leq P \leq 22 \text{ kW}$	
	Fast AC charging point, triple- phase	$P > 22 \text{ kW}$	High-power charging point
Category 2 (DC)	Slow DC charging point	$P < 50 \text{ kW}$	
	Fast DC charging point	$50 \text{ kW} \leq P < 150 \text{ kW}$	
	Level 1 – Ultra-fast DC charging point	$150 \text{ kW} \leq P < 350 \text{ kW}$	
	Level 2 – Ultra-fast DC charging point	$P \geq 350 \text{ kW}$	

Charging Station

A charging station is the physical installation for the charging of electric vehicles. Every station has a theoretical maximum power output, expressed in kW. Every station has at least one charging point that can serve only one vehicle at a time. The number of charging points at a charging station determine the number of vehicles that can be recharged at that station at any given time. Where more than one vehicle recharges at that charging station at a given time, the maximum power output is distributed to the different charging points, such that the power provided at each individual charging point is lower than the power output of that station.

Connector

Connector means the physical interface between the recharging or refuelling point and the vehicle through which the fuel or electric energy is exchanged.

Just Transition¹

The just transition is a concept aiming to shift from fossil fuels to sustainable energy without leaving behind vulnerable communities or workers. It ensures fairness, equity, and inclusion by providing support and opportunities for impacted workers and communities, prioritising social dialogue, and addressing climate change while considering social welfare. By combining environmental responsibility with social equity, a just transition approach seeks to create a sustainable future that benefits everyone, mitigates economic disruption, and empowers those affected by the transformation towards a low-carbon economy.

Publicly Accessible Charging Infrastructure

Publicly accessible charging infrastructure are available to all EV drivers. According to the Alternative Fuels Infrastructure Regulation published in 2023, publicly accessible charging infrastructure is that which *'is located at a site or premises that are open to the general public, irrespective of whether the alternative fuels infrastructure is located on public or private property, whether limitations or conditions apply in terms of access to the site or premise and irrespective of the applicable use conditions of the alternative fuels infrastructure.'*

This includes, for example, privately owned charging points accessible to the public that are located on public or private properties, such as public carparks or supermarket carparks. A charging or refuelling point located on a private property that is accessible to the public should be considered as publicly accessible also in cases where access is restricted to a certain general group of users, for example to clients. Charging points for car-sharing schemes should only be considered accessible to the public if they explicitly allow access for third party users. Charging points located on private properties, access to which is restricted to a limited, determinate circle of persons, such as parking lots in office buildings to which only employees or authorised persons have access, should not be considered as publicly accessible charging.

Additionality

Additionality refers to a charge point location which was built for a primary user group but offers additional value to other user types. For example, a charge point location may be selected initially based on servicing the needs of destination charging between 9am and 5pm, but it may also serve the needs of nearby residents overnight and act as a neighbourhood charger during off-peak times.

Scalability

Scalability refers to a site's potential to accommodate additional charging infrastructure and provide additional power output in the future.

¹ <https://climatejusticealliance.org/just-transition/>



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Section 1 Introduction

1.1 Background and Objectives

In July 2022, the Government established a new office within the Department of Transport: Zero Emission Vehicles Ireland (ZEVl). ZEVl will coordinate the provision of EV supports and grants, and coordinate and steer the collaborative efforts to deliver electric vehicles (EV) infrastructure and ensure a satisfactory experience for all EV users.

To establish the blueprint for delivering EV infrastructure nationally, the ZEVl team developed the EV Charging Infrastructure Strategy 2022-2025 which sets out the ambition to deliver an EV charging network that will meet and be ahead of EV users' needs.

The National Strategy reflects the urgent need for action to address climate change and the need for a strategic and Just Transition to sustainable ways of travelling. It is based on a set of fundamental principles underpinning the roll-out of EV charging infrastructure over the coming decade. The strategy outlines how the delivery of EV charging infrastructure will be guided by the following understandings:



Home charging should be the main form of charging for most electric vehicle owners. Actions will be taken to prioritise the installation of smart home chargers and to encourage the deployment of V2G technologies where feasible.



Residential neighbourhood charging will provide a similar solution to home charging for EV owners without access to a driveway.



Destination charging will bridge the gap between home and local charging and meet the need for top-up charging where required.



En-route charging, involving higher-speed, higher-power charge points at strategic locations, will become increasingly important to cater for charging on the go. This will facilitate the quicker transition of high-mileage vehicle fleets to EV technology. It will also address charger/range anxiety.

Ultimately, there is no one charging solution for EV users: each type of charge-point will be used at some point by EV drivers, depending on their needs and circumstances on a given trip. What is important is to deliver sufficient charge points of different types so that each user can charge in a convenient, energy-efficient, and cost-effective manner.

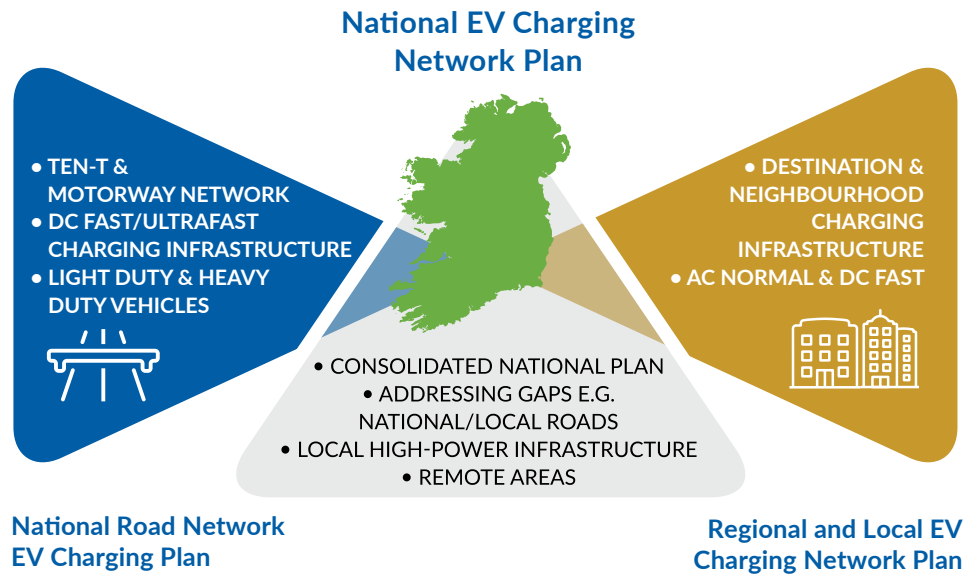


Figure 1 – National EV Charging Plan

The National Strategy was accompanied by an Implementation Plan that included an initial set of actions and deliverables to support the strategy's delivery. This included the development of this document and the National Road Network EV Charging Plan, launched for consultation in September 2023. This plan is complementary to this, which focuses on the national expansion of the high-powered charging network on the Motorway, Ten-T and National roads.

1.2 Purpose

The purpose of these guidelines is to establish a comprehensive framework for the Request for Tender (RFT) process, to support local authorities in the formulation of local charging infrastructure strategies. By outlining clear and transparent guidelines, this document aims to facilitate a standardised RFT process that enables local authorities to procure innovative and effective solutions for the deployment of EV charging infrastructure. Additionally, the guidelines serve to offer insightful direction for the preparation of the EV charging infrastructure strategy itself, providing local authorities with a roadmap to develop plans that align with national goals and standards. Although the primary focus is on destination and neighbourhood charging infrastructure, strategies may consider options for other forms of public charging (e.g., en-route charging on primary and secondary national roads and other sustainable mobility options such as e-mobility hubs). Importantly, ZEV1 commits to actively supporting local authorities throughout the entire strategy development process. This support encompasses financial assistance, ongoing guidance, and dedicated points of contact, reinforcing a collaborative approach to ensure the successful implementation of sustainable EV charging infrastructure initiatives across communities.

1.3 Regional and Local EV Charging Network Plan

The Regional and Local EV Charging Network Plan provides a way forward for equitably delivering charging infrastructure at a national and local level to support the national and international efforts to reduce transport related carbon emissions through the shift to zero emission vehicles for all users. This plan will be published for public consultation in Q1 2024.

The objectives of the plan are to:

- 1) Support the delivery of well-defined local and regional plans for a resilient, self-sustaining, future-proofed network that minimises public funding supports and encourages participation from public and private stakeholders to drive delivery.
- 2) Support the coordinated and accelerated expansion of a destination and neighbourhood EV charging network that aligns with greater e-mobility policies.
- 3) Provide a pathway to deliver on national infrastructure targets in support of both AFIR requirements and Climate Action Plan objectives

The expansion of publicly accessible destination and neighbourhood charging infrastructure will be led by local authorities with the support of other public sector bodies, private sector groups and other stakeholders. Given their unique understanding and experience of their local communities and environments, local authorities are ideally suited to facilitate charging infrastructure delivery at the local level that is financially sustainable and best ensures equitable access for all.

This document provides guidance for local authorities in developing strategies in accordance with and to support the Regional and Local EV Charging Network Plan.

1.3.1 Principles

The national strategy is based on a set of fundamental principles (Figure 2) that underpin the rollout of EV charging infrastructure over the coming decade and should be considered when developing strategies. These principles exist against the backdrop of climate change, the urgent need to decarbonise the Irish transport system, and the opportunity to maximise the benefits of the electric mobility transition for all citizens. They aim to make EV charging possible for everyone, regardless of income, age, health, or location.

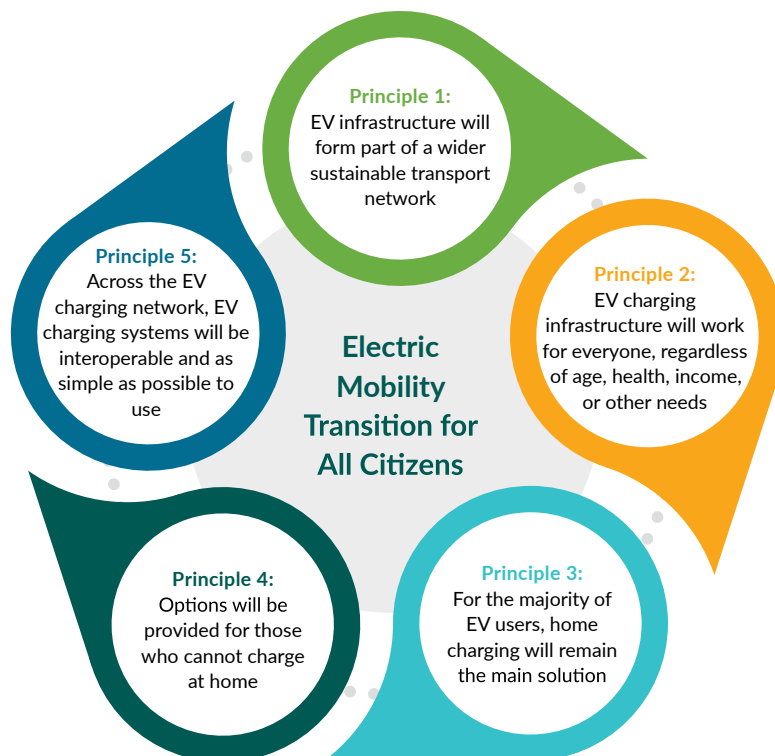


Figure 2 - EV Charging Infrastructure Principles

Principle 1: EV infrastructure will form part of a wider sustainable transport network

It is key that for those journeys where the only option is to travel by private car, their carbon footprint can be improved by using an electric vehicle. Electric vehicles will have an important part to play in transforming the Irish transport system into one that is clean, green, and sustainable. This improved system will support communities and economic growth as we move towards a net zero carbon future.

Principle 2: EV charging infrastructure will work for everyone, regardless of age, health, income, or other needs

A fully inclusive EV charging infrastructure network will work for everyone, regardless of age, health, income, or other needs. This will ensure a fair and equitable transition to large-scale EV use.

Principle 3: For most EV users, home charging will remain the main solution

Home charging is the most cost-effective and convenient way of charging electric vehicles in Ireland. It currently accounts for approximately 80% of EV charging sessions, a pattern comparable to that experienced in other European countries such as Norway, the Netherlands, and the United Kingdom. In these countries, most early-adopter charging is done at home.

Principle 4: Options will be provided for those who cannot charge at home

For some, charging at home will not be an option. It is vital that they are provided with residential charging solutions that mirror and give the same benefits as the home-charging option. Residential charge points should replicate the home-charging pattern of charging vehicles at night, during off peak periods, and at a lower cost. There is an onus on national and local government to facilitate the provision of these charging solutions for citizens who do not have access to a home charge point.

Principle 5: Across the EV charging network, EV charging systems will be interoperable and as simple as possible to use

Ensuring interoperability and simple charging interfaces will be a crucial part of developing a fast, reliable, and easy-to-use charging system.

1.4 Lessons Learnt from International Experience

Learning from international experience has been central to enabling the adoption of best practice, identifying potential pitfalls to be avoided, and informing efficient and effective implementation. To support widespread EV adoption and use, the expansion of publicly accessible charging at various location types is the increasing focus of efforts across European nations to cater to a growing diversity of EV users. Figure 3 illustrates the lessons learned from successful international experiences have been considered and adapted to inform the Regional and Local EV Charging Network Plan.



Figure 3 - Lessons Learned from Successful International Experiences

To plan, and ultimately deliver, a public EV charging network that meets the needs of users, the plan builds on international experience to guide the process from strategy development to operation. In Ireland, the public charging network has largely been driven by commercial, private initiatives responding to demand resulting in infrastructure mainly being deployed in high-traffic and economically viable areas. This has created an imbalance in the network potentially leaving out underserved communities and remote regions. This approach also does not adequately provide infrastructure in areas where EV adoption is still low, but adoption might increase with the provision of public charging infrastructure. Strategically planning the public charging infrastructure network, particularly in neighbourhoods to support residential charging and at destinations to support local charging, ensures that charging infrastructure aligns with the evolving demands of EV users, encourages greater adoption and supports a more inclusive transportation system.



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Section 2 Destination and Neighbourhood Charging

Given local authorities' local knowledge and expertise they are in the unique position to strategically plan a network that responds to national and local challenges and needs concerning the deployment of EV charging infrastructure at destination and neighbourhood locations.

Local authorities and government agencies (including Transport Infrastructure Ireland), working with ZEV1, will play a key role in planning, coordinating, and facilitating the delivery of EV charging infrastructure that will:

- Comply with Department of Transport's Electric Vehicle Charging Infrastructure Strategy 2022 - 2025
- Ensure social equity and a just transition, through an accessible, public charging infrastructure network
- Align and complement national and local policies and strategies
- Achieve the stringent targets including Alternative Fuels Infrastructure Regulation targets that will not be delivered through private sector activities alone
- Meet the immediate and growing EV charging infrastructure demand
- Set governance and regulatory standards that give a message of assurance to the public to encourage and facilitate modal transition



2.1 Delivering Infrastructure

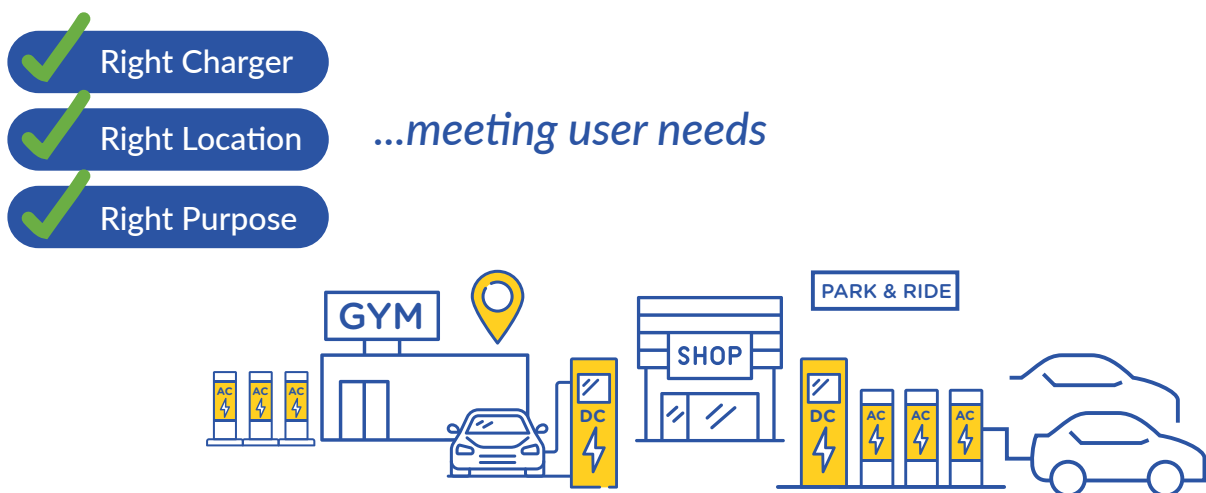
EV charging can be designed to be located at various location types to complement different concurrent activities; however, the three main forms of public charging are at en-route, destination, and neighbourhood locations. While the Regional and Local EV Charging Network Plan focuses on the types of charging relevant to destination and neighbourhood locations, a brief overview of various types of charging locations is provided in table 1.

Table 1: Common Charging Location Types

Type of Charging	Types of Charging Relevant to these Guidelines				
	Home (off-street)	Workplace	Destination	Neighbourhood	En-route
Access	Private	Semi-private	Semi-public / Public	Public	Public
Typical Locations	Private driveways	Private parking spaces/lots reserved for employees	Privately owned parking lots at establishments like hotels, restaurants, and medical centres and publicly owned car parks either on-street or at attractions like libraries, parks, and recreational facilities	On-street in residential neighbourhoods or other areas with residences without access to off-street parking	At service stations along major roads and motorways
Typical Use Case	Overnight charging	Daytime charging, weekdays	Daytime charging while running errands / undertaking activities or long stay car parks i.e. park and ride	Overnight charging	Recharging during a longer journey
Power Output	Category 1 (AC) • Slow AC charging point, single-phase	Category 1 (AC) • Medium-speed AC charging point, triple-phase	Category 2 (DC) • Slow DC charging point • Fast DC charging point • Level 1 – Ultra-fast DC charging point • Category 1 (AC) for long stay	Category 1 (AC) • Slow AC charging point, single-phase • Medium-speed AC charging point, triple-phase	Category 2 (DC) • Level 1 – Ultra-fast DC charging point • Level 2 – Ultra-fast DC charging point
Parking Area Owner	Private resident	Company	Private Business, Public National Body, local authority	Local Authority / Private Developer	TII / Local Authorities

Destination charging should be considered at locations where people can take the opportunity to top up their EV while engaging in parallel activities. It should be conveniently situated at attractions and key centres of activity where people would spend a few hours visiting.

Destination charging often is provided in the form of a combination of DC and AC charging pedestals, the charger type should fit the use case. DC fast charging stations are strategically positioned at destinations with shorter dwell times such as public and private car parks, hotels, restaurants, shopping centres, tourist attractions, and recreational facilities. The comparatively slower AC charging stations are primarily located at destinations associated with longer visit durations, for example, park and ride facilities or hotels for overnight stays.



Neighbourhood charging caters to residents to provide charging stations in residential areas without access to off-street parking and home charging. These chargers tend to be located at convenient locations to provide access to on-street parking, however they can also be grouped as a hub in a neighbourhood where constraints to on-street charging are presented.

Slower, AC charging pedestals are preferred in residential areas. Slow charging has the advantage of being more cost-effective to the end user compared to higher-powered charging, making residential areas the ideal locations to provide these chargers for overnight charging convenience. AC chargers can face barriers to installation such as limited availability of on-street parking or narrow footpaths. They are less costly to install than DC however the business case is not as strong due to slower delivery of charging and turnover of users. Neighbourhood charging encourages off-peak charging, which helps spread electricity demand and minimises stress on the power grid.



2.2 Regional Approach to Delivering a Charging Network

To deliver a cohesive destination and neighbourhood charging network that meets local and national needs, a regional approach amongst local authorities will be taken to strategy development, with the exception of local authorities in the three major cities who are in advanced stages in the development of their strategies.

The regional approach is not limited to strategy development alone and, subject to agreement with local authorities, it will extend across all stages, from infrastructure planning and procurement to delivery. This approach offers numerous advantages, foremost being the alignment of efforts and resources across neighbouring communities. A regional approach also allows local authorities to capitalise on economies of scale, streamline planning processes, and foster synergies that benefit all participating local authorities. By coordinating across jurisdiction borders, local authorities can avoid the mistake of insular, siloed planning and avoid the oversupply of infrastructure where demand does not warrant this while also ensuring there is sufficient infrastructure in rural and remote areas to meet future demand to ensure equitable access.

The following seven regions and three city areas have been agreed in principle with local authorities.

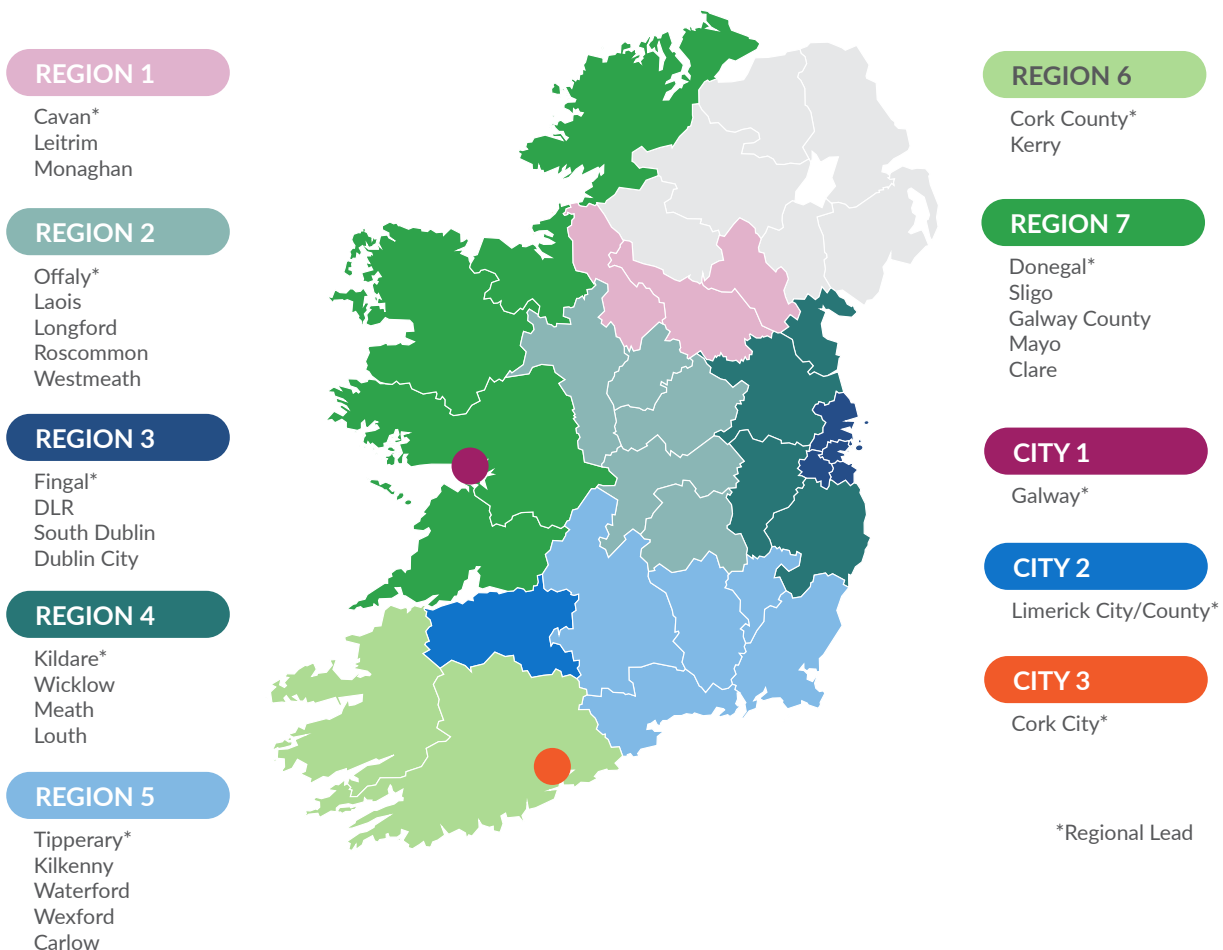


Figure 4 - Regional Approach for Strategy Development

To avoid duplication of charge points and ensure that resources are optimised to be used to support the rollout of charge points where gaps otherwise would prevail, further collaboration outside of the regional local authority groupings will be needed as detailed below:

- ZEVI and TII in the rollout of enroute charging infrastructure. Overlaps and potential gaps in user needs, in particular along national primary and secondary roads, may require both high-power, conveniently accessible enroute charge points as well as destination charge points. It is important for local authorities and TII to engage to identify gaps and avoid duplication.
- CPOs to coordinate efforts in expanding the charging network. Engagement will be required to ensure there is not duplication of locations and resources unless needed.
- Public sector bodies looking to install charge points at their premises. Local authorities will want to consider how these plans align with and support their own efforts to expand publicly accessible charging points.
- Other stakeholders, private car park owners, and local interest groups, are crucial in supporting the rollout of destination and neighbourhood EV charging infrastructure.
 1. Fáilte Ireland, as the National Tourism Development Authority, should support local authorities in identifying seasonal charging needs to facilitate tourism in the area.
 2. Private car park owners have sites that are potentially attractive locations for an EV owner to charge given the facilities they tend to be located in the vicinity of destinations. Engaging with these owners to understand their plans for and interest in hosting publicly accessible EV charging networks can help expand the network to complement publicly owned charge points locations.
 3. Engaging local interest groups (for example, community associations, universities, hotels, shopping centres and businesses) is important to ensuring plans align with their needs and concerns. Soliciting feedback and addressing potential issues can help build support and awareness.

2.3 User Needs

Understanding the user experience has been of paramount importance in the development of the National strategy. To put users at the centre of EV strategy development and infrastructure planning, ZEVI have developed several personas and their user journeys to show how people may interact with the future EV public charging network.

The profiles begin to explore the users' specific requirements and how EV charging provision will need to evolve over the coming years to respond to context, scale, and opportunity to ensure a comprehensive analysis of the practical application of the regional and local strategy, it is suggested that a 'sense' check using the different personas is incorporated into the analysis.

The personas can be used for the local authority strategies to:

- Articulate user needs
- Support the development of a policy statement
- Assess the suitability of the strategy to meet the needs of the public

An in-depth exploration of each persona's key moments and user journey is included the Regional and Local EV Charging Network Plan. Here is a brief overview of each:



Carsharing users

They routinely rely on public transport or active modes to access their day-to-day activities, so they do not own their own car. When they do require a private vehicle to complete trips, such as for weekend trips away or to go on a larger shopping trip, they use a car sharing club vehicle.



Long Distance Commuter

They rely on their car for most of their journeys due to the lack of sustainable and convenient alternatives. While they tend to charge their car with their private, off-street charger overnight, sometimes they forget to recharge. Due to their substantial daily driving distances and the additional errands they have to run, they might need to recharge during the day.



Tourists

Tourists may use their own vehicles or rent an EV to travel around the country - both to cities and more rural destinations. Ideally, they will charge at destinations overnight, but they may need to avail of charging during the day at a destination or enroute a motorway.



Taxi Driver

They use their vehicle to provide taxi services for a living. They spend most of their time doing short, local trips but never start their shift with a full charge, since they do not have access to private/off-street parking facilities where they can charge overnight. Any time they spend charging is time potentially lost actively providing a taxi service to a customer. They also carry cash on them, and so safety and security are daily concerns for them.



Apartment dweller

They have shared EV chargers in the apartment block, but these chargers may not always be available. They prefer using the apartment charging option because it lets them charge while they are at home for a lower cost as compared to the faster chargers available to the public. Occasionally, they may rely on local public charge points at the supermarket when they need a high-speed charger.



People with disabilities

For them, being independent is key. When they need to recharge using a public charge point, they need to be confident that the infrastructure is easy to find, usable and accessible.

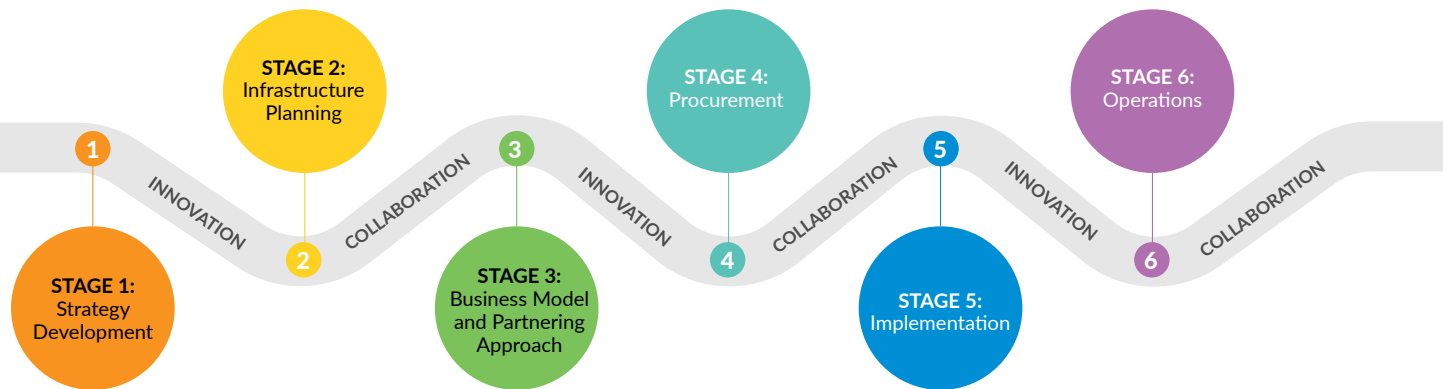


Van drivers

They drive frequently for work and ideally charge up at home to avail of the cheapest rate. They tend to transport heavier loads and make regular stops throughout the day to conduct a service at a point. Occasionally, when inter-urban trips are needed, they will need to relay on high-power charging.

2.4 Project Lifecycle: Stage 1 Strategy Development

To strategically deliver charging infrastructure to respond to gaps effectively and timely in the network, the Regional and Local EV Charging Network Plan provides local authorities with a project lifecycle that takes a staged approach to implementing the plan. To deliver the infrastructure required at scale without expending unnecessary resources, the process begins with strategy development at a regional level to guide the subsequent stages towards the delivery and on-going operations of charging infrastructure at destination and neighbourhood locations.



This guidance document focuses on Stage 1 - developing a strategy is critical to coordinating efforts and resources and establishing the direction for the planning. Local authorities can identify areas where gaps in the charging network pose a barrier to EV adoption and inequitably deny individuals or groups from shifting from ICE to electric vehicles. Due to their knowledge of their local context and opportunities, local authorities can make efficient use of available funding, accelerating the deployment of charging stations where they are needed the most.

The strategies developed by local authorities should align with and complement other national and local policies, strategies, and plans including the National EV Charging Infrastructure Strategy 2022-2025, the National Road Network EV Charging Plan, and the Regional and Local EV Charging Network Plan. They should support and be shaped by their local Climate Action Plans, which are required to be in place by 2024 according to the Climate Action and Low Carbon Development (Amendment) Act 2021. These charging strategies will form the basis for local authorities to develop infrastructure planning, prepare business plans and funding requests to ZEVI for the deployment of charging infrastructure.

In addition to the Regional and Local EV Charging Network Plan, guidelines will be developed to support local authorities in the implementation of their strategies. The guidelines outline principles and methodologies to support in pinpointing the most suitable locations (Stage 2), assess the most appropriate business model to efficiently delivering large numbers of charge points across the regions (Stage 3), and how to design a procurement approach for the high-quality delivery of the charging network (Stage 4).



3

Section 3 Areas for Consideration in RFT

In this section, the primary objectives for the Request for Tender (RFT) are clearly outlined providing a framework to guide local authorities in the formulation of effective and sustainable strategies. Additionally, a sample RFT structure is included, offering local authorities a practical reference point to structure their own procurement documents. The sample RFT serves as a template that encompasses key elements, allowing authorities to adapt and customise it according to their unique needs and local contexts.

These sections are intended to provide guidance and direction for the development of local authority strategies, however there is flexibility for local authorities to add or amend to reflect local policies, strategies, and nuances. The ZEVI team are available to support local authorities throughout the lifecycle of strategy preparation, from procurement, strategy preparation and finalisation.

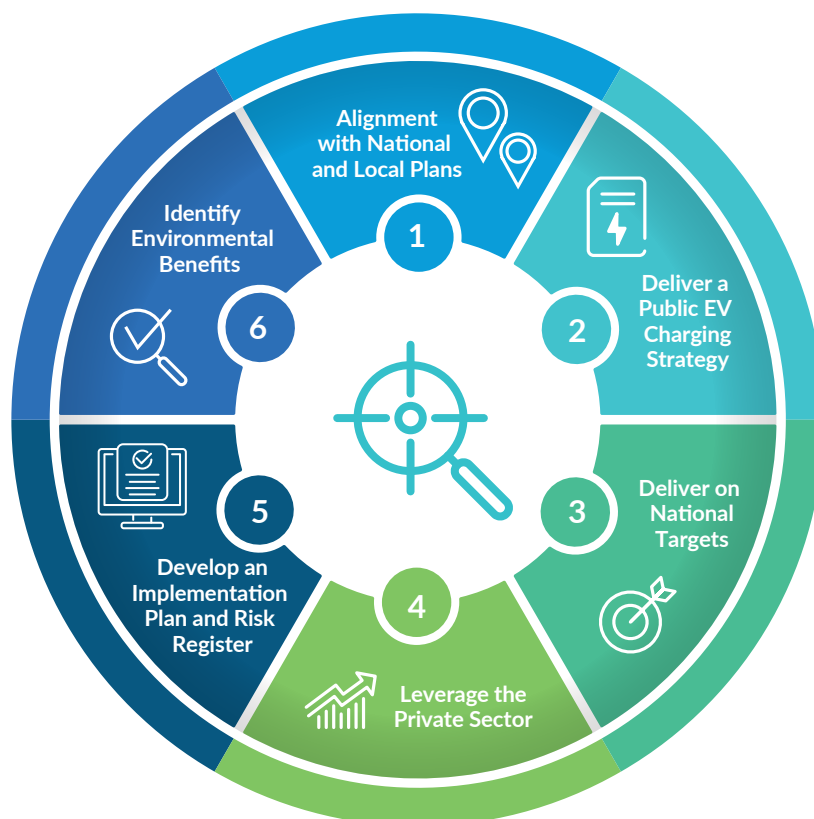
See Appendix A and B for sample RFT structure.

3.1 RFT Objectives

The overarching objective of the RFT is to procure the services required to enable local authorities to deliver EV infrastructure in accordance with the National EV Infrastructure Strategy to meet user needs now and into the future and facilitate the transition to EVs in a sustainable and efficient manner.

These charging strategies will form the basis for local authorities to develop infrastructure planning, prepare business plans and funding requests to ZEVI for the deployment of charging infrastructure.

3.2 Strategy Objectives



3.2.1 Objective 1. Alignment with National and Local Plans

The strategies developed by local authorities should align with and complement other national and local policies, strategies, and plans including the:

- National EV Charging Infrastructure Strategy 2022-2025
- Regional and Local EV Charging Network Plan
- National Road Network EV Charging Plan
- Other relevant national, regional and local plans, policies, and strategies

The strategies should support and be shaped by their local Climate Action Plans, which are required to be in place by 2024 according to the Climate Action and Low Carbon Development (Amendment) Act 2021.

3.2.2 Objective 2. Deliver a Public EV Charging Strategy

To support a just transition to EV adoption and use by establishing a strategy to deliver a financially sustainable, accessible EV charging network that can scale to meet growth in demand and can flexibly adapt to future circumstances. To deliver on this objective, the strategy will need to:

- 1. Assess the Current Status of the EV Charging Network and the Adoption of EVs.** This includes details of current total national fleet local fleet (all vehicles), current EV fleet, current public EV infrastructure, percentage of homes without off street parking, percentage homes without off street parking but also without on street parking (potential need for hubs for base charging), current transport-related emissions and impact on air quality.
- 2. Draw on Lessons Learnt from International, National and Local Activities.** Learn from global, national, and local best practices to inform and enhance the effectiveness of the EV charging strategy. The Regional and Local EV Charging Network Plan should be referred to.
- 3. Consider how Socioeconomic Needs Factor into Access to Charging Infrastructure.** Ensure an inclusive and fair transition to EVs, in accordance with the fundamental principles of the National Electric Vehicles Charging Infrastructure Strategy 2022 – 2025.
- 4. Optimise the Charging Infrastructure Utilisation by Incorporating Additionality.** Strategically place charging infrastructure to meet the needs of different user types/personas, maximise convenience, encouraging widespread EV adoption for the benefit of the whole community and EV users to align and integrate with national sustainable transport and e-mobility policy. Ensure the availability of the right type of charger for the right purpose in the right location, promoting the practicality and efficiency of the EV charging network and facilitating user needs now and into the future.
- 5. Collaborate with Stakeholders.** Facilitate cooperation among EV stakeholders to work together for both national and local objectives, fostering a unified approach to sustainable transportation. Detailed requirements outlined in Appendix C.

Detailed requirements outlined in Section 3.3.

3.2.3 Objective 3. Deliver on National Targets

The Alternative Fuels Infrastructure Regulation (AFIR) lays down common technical specifications and requirements for EV infrastructure across all EU member states to ensure a seamless charging experience for all users. These national targets are broken down and assigned to each regional group and local authority.

Detailed requirements outlined in Section 3.3.

3.2.4 Objective 4. Leverage the Private Sector

Identify and critically analysis suitable partnering approaches to successfully deliver the charge points to achieve local and national targets to leverage private funding, resources, and technical expertise.

Detailed requirements outlined in Section 3.4.

3.2.5 Objective 5. Deliver an Implementation Plan and Risk Register

Provide a high-level, phased implementation plan with recommended high-level projects for delivery by 2030 that address areas of current high demand to meet the needs of as many users as feasible. Consider opportunities for bundling of economically attractive, high-value locations with lower demand locations that are of strategic regional importance, e.g. more remote tourist locations, to facilitate a just transition and sustainable network.

Additionally, identify risk and mitigations measures for implementation.

Detailed requirements outlined in Section 3.5.

3.2.6 Objective 6. Identify Environmental Benefits

Detail the benefits of transition to EVs and how the accelerated rollout of EV infrastructure will facilitate this transition. Benefits should be considered around environmental quality such as impact on air and noise quality and GHG emissions reduction.

3.3 Detailed Requirements for Objective 2 and 3 – Modelling and Analysis for Meeting AFIR Targets

3.3.1 Overview

In order to effectively deliver on the strategic objectives as per Objective 1, detailed geospatial data analysis and modelling, including an assessment of the current situation, is required to assess future neighbourhood and destination charging infrastructure volume required across the regional / local authority area. These area-based outputs will form the basis of identifying site-specific charge point locations for the purposes of subsequent implementation plans (see Figure 5).

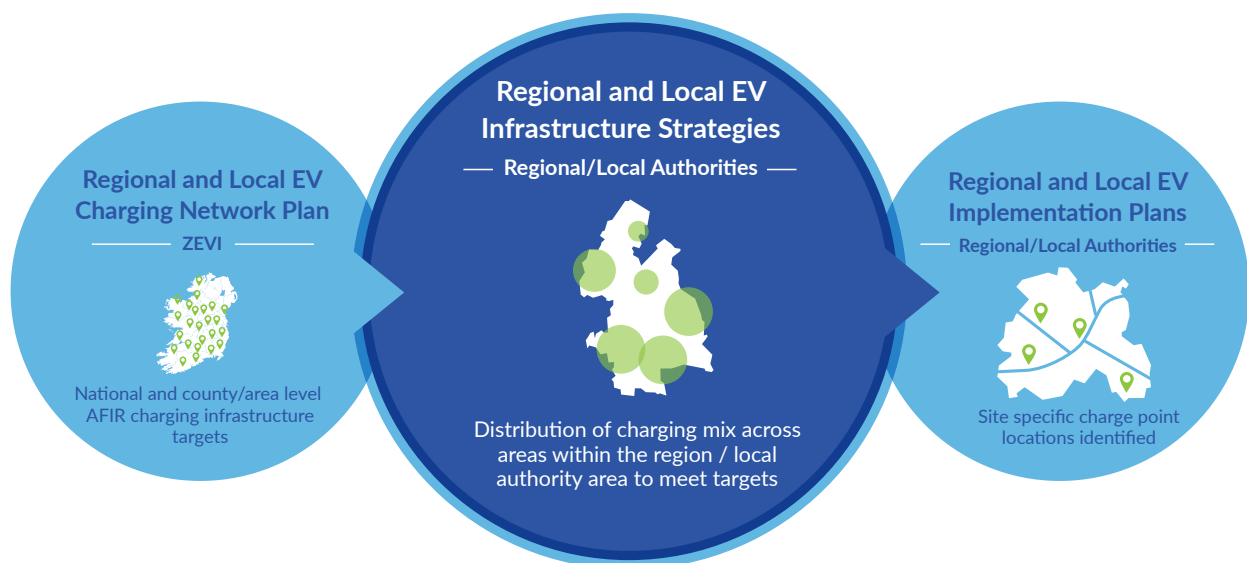


Figure 5 - Stepping from Targets to Area Distribution to Site Selection

3.3.2 Key Outputs

OBJECTIVE

To identify what charging volume is required (kW power output and charging quantity) at neighbourhood and destination locations (including locations that overlap with en-route locations along national primary and secondary roads) across the region / local authority area to meet 2025 and 2030 AFIR targets, in accordance with the fundamental principles in the National Infrastructure Strategy to ensure a just transition to EV charging.²

TARGET USER TYPES

The user personas defined in the Regional and Local EV Charging Network Plan can assist in guiding the segmentation of user types in the region / local area, particularly when considering the likelihood of access to home charging opportunities. Refer to these personas when considering charging behaviour and requirements. The required outputs below should reflect the user personas. These will be defined by ZEV1 and shared with the local authorities in January.

REQUIRED OUTPUTS

Area-based targets should be analysed to the level as required by the regional group and the local authorities. To provide an indication of the volume of charging required, the modelling should be at an appropriate scale to guide future decision-making around site selection. For example, this could be at an electoral division or municipal district level. The following outputs and spatial analysis should be accompanied by a map to illustrate the output.

Output 1: Identify current EV charging locations, to inform, together with the following outputs, where the gaps are in the network. The assessment of the current charging situation should include an overview of the current EV charging infrastructure by location and the capacity (kW) and type (AC/DC) of the charging infrastructure. Where openly available, further information on the charge point usage (utilisation rate) should be provided.

Output 2: Demand-based modelling of EV charging infrastructure requirements based on four scenarios, predicated on projected fleet uptake and anticipated charging demand, including (1) achieving charging demand targets, (2) overachieving on charging demand targets, (3) under-achieving on charging demand targets, and (4) one further scenario such as accounting for seasonal, local variance. These scenarios should be agreed in advance with ZEV1 / the local authority. This should be a dynamic model going forward that can be used along the line.

The minimum inputs that should be factored into the scenarios include: (1) total vehicles per fleet, (2) proportion of EVs (BEVs and PHEVs) per fleet, (3) annual kilometres driven per fleet, (4) energy efficiency of EVs, (5) distribution of charging types, (6) energy realisation factor and the capacity utilisation rate of the different charging types, and (7) the proportion of energy used to charge BEVs versus PHEVs. These assumptions should be discussed in advance with ZEV1 / the local authority.

The calculations for these 4 scenarios and 7 assumptions should be made available to the local authority for monitoring and evaluation purposes (which may include cases of external sharing), so that the region / local authority can track their progress in meeting EV charging infrastructure targets, based on actual EV fleet uptake in proportion to the total vehicle fleet, year on year. These data calculations should span from 2024 to 2030, with the calculations made for forecasted vehicles and charging infrastructure demand for each year end. The file format and format of the information should be discussed in advance with the region / local authority.

² Progress towards achieving the 2030 targets will be reviewed in 2028 with a revised approach for achieving the 2030 targets, where necessary.

Based on an analysis of the various scenarios, an appropriate scenario should be selected to go forward with for outputs 3, 4, 5, and 6 (figure 6). Where the scenario infrastructure targets are less than the AFIR targets for 2025 or 2030, then the AFIR EV charging infrastructure targets take precedence.

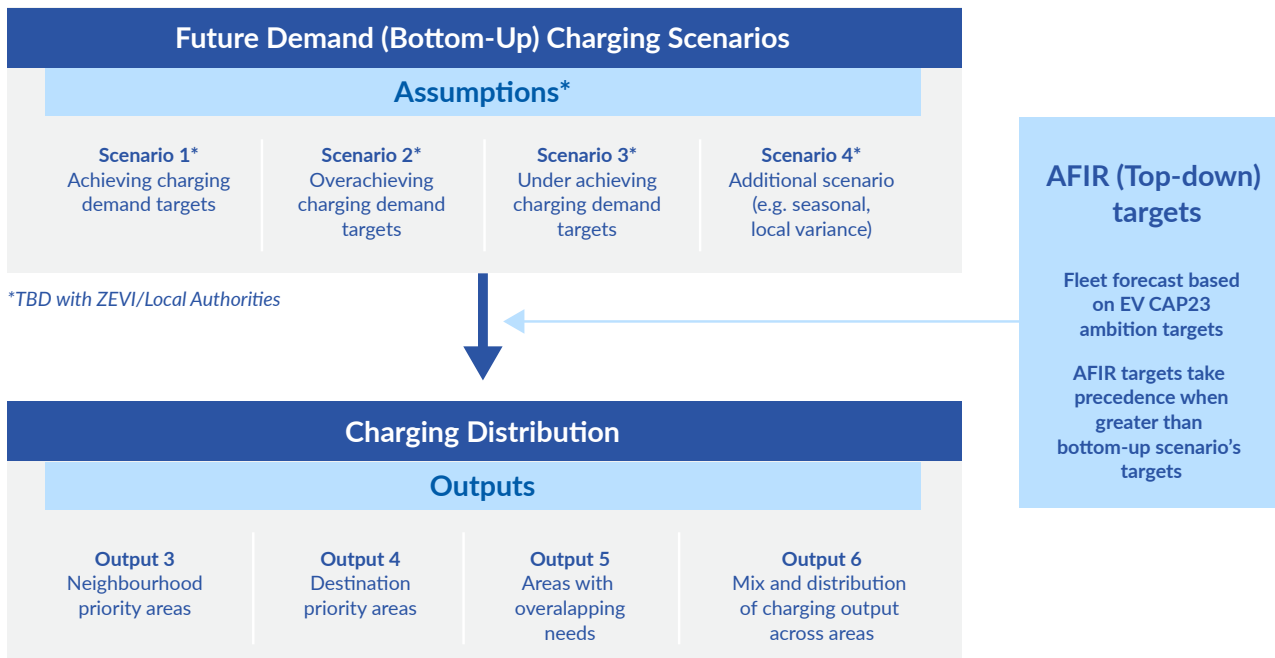


Figure 6 - Charging Volume Output Approach

Output 3: Identify priority areas most suited to neighbourhood charging (identify areas by high, medium and low public charging demand). Consider indicators of public charging need including access to off-street parking, population density, housing stock mix, number of vehicles registered, etc.

(Example: Figure 10 in the Dublin EV Charging Strategy for residential)

Output 4: Identify areas for deployment for destination charging based on proximity to:

- Constant, regular demand destination areas: Public and privately-owned parking sites should be separately identified. Key services and amenities include car parks, hospitals, shopping centres, supermarkets, universities, park-and-rides by major rail / bus stations.
- Irregular demand destination areas: Locations with seasonal variations in visitors to the area, such as national park visitor centres and beach car parks that attract tourists. Additionally, identify low demand areas or remote areas where charging infrastructure is required to achieve the geographic spread needed to facilitate strategic access to EV charging.

(Example: Figure 11 in the Dublin EV Charging Strategy for destination)

Output 5: Identify the areas that serve multiple user needs (e.g., taxi drivers, car share users, residents, commuters, delivery drivers, visitors) and where en-route, destination, and/or residential charging locations overlap. Opportunities for responding to multiple user needs through mobility hubs should be identified.

(Example: Figure 14 in the Dublin EV Charging Strategy for overlapping user needs and locations)

Output 6: Based on the county's charging infrastructure targets, the gaps in the charging network and the demand for charging at neighbourhood and destination locations, identify the mix and distribution of EV

charging power output (kW) and quantity of charge points (and power level - kW) to meet user needs for neighbourhood and destination charging infrastructure to 2025 and 2030. A preliminary analysis of electricity capacity using ESB Network's capacity heatmap is required to flag where grid capacity may be a concern for delivering on an area's targets for the total EV charging power required. Where grid capacity increases are likely to be needed, this should be highlighted.

VEHICLE FLEET CONSIDERATIONS

The vehicle types in scope include Category M1 and N1 light-duty vehicles.³ EVs include both Plug-in Electric Hybrids (PHEV) and Battery Electric Vehicles (BEV).

CONSIDERATIONS

This geospatial modelling exercise should take into account key considerations including (1) target user groups, (2) enhancing equitable access, and (3) available electrical capacity to meet demand.

Target User Groups: The different groups of users expected to make use of charging infrastructure should be identified as well as the type of charge point location and charging speeds users are most likely to require. These groups should be informed by the personas developed for the national Infrastructure Strategy and the Regional and Local EV Charging Network Plan.

Enhancing Equitable Access: The network should be evaluated based on how it improves equitable access to a public charging infrastructure, particularly for users without access to private home charging opportunities.

Available Electrical Capacity to Meet Demand: In identifying key areas for delivering on targets (both national AFIR charging requirements and locally modelled requirements), consider where capacity is in the electrical grid to support the installation of destination and neighbourhood charging infrastructure. The lack of capacity should not eliminate a location but rather identify a need for infrastructure upgrades or inform decision-making around infrastructure planning and/or where the use of innovative solutions may be required to respond to charging need in the area.

3.3.3 Supports

The ZEVI team can provide the following supports for the development of this section:

- An overview of modelling assumptions used to assist with modelling
- Details of datasets that can be used to address the key questions
- Workshops with the ZEVI team and other stakeholders to discuss modelling assumptions and methodologies
- Workshops to discuss and assess the modelling and analyse findings

3.3.4 References

The reference below from the Dublin local authorities is a good example of a structured strategy that builds on an analysis of the data. Note, this strategy was created prior to the AFIR targets coming into force. The strategy contextualises EV Infrastructure in terms of other Council objectives, clarifying the local authority role and setting out clear recommendations, numbers, and suggested business models for successful delivery in line with 2025 and 2030 national targets.

- [Dublin Local Authority Electric Vehicle Charging Strategy](#)

³ According to AFIR, "light-duty vehicle" means a Category M1 motor vehicle as described in Article 4(1), point (a)(i) or a Category N1 motor vehicle as described Article 4(1), point (b)(i), of Regulation (EU) 2018/858."

3.4 Detailed Requirements for Objective 4 - Leverage the Private Sector

Partnerships between public and private groups can minimise the impact of financial, technical, and operational challenges in successfully expanding EV charging infrastructure and delivering projects based on the identified charge point locations.

While developing strategies, the preferred business model to infrastructure installation and ongoing operations and maintenance should be considered. These models will vary depending on the local authorities' risk appetite, availability of funds, resource requirements, complexity, responsibility, and the degree of control they wish to exert over elements such as standards and pricing.

Approaches for installing, operating, and maintaining EV charging infrastructure differ in terms of the role played by the local authority, which party is responsible for the different aspects of delivery, and the risk taken on by different parties. The guidelines being developed will detail the three most common business models used to deliver EV charging infrastructure - Own and Operate, Concession Framework and Licence / Lease Model.

While finalising specific business models may not be necessary during the RFT process, thoughtful consideration is essential, especially for the large-scale initial implementation of charge points. One key aspect to deliberate is the bundling of sites, balancing profitable and less lucrative locations strategically. This approach allows for a more comprehensive and equitable charging network, catering to both commercially viable areas and those essential for community accessibility. By grouping together profitable and non-profitable sites, local authorities can create a more resilient and socially inclusive charging infrastructure.

Moreover, the financial implications of chosen business models demand thorough examination. Conducting a cost-benefit analysis will shed light on the feasibility of different approaches and their potential impact on the budget. Revenue forecasting becomes crucial for estimating the income generated and ensuring financial sustainability. Understanding the risks associated with each business model is equally vital, allowing authorities to develop mitigation strategies and adapt their plans to changing circumstances. Long-term financial planning is essential to account for ongoing maintenance, upgrades, and future expansion, fostering the resilience and growth of the charging infrastructure over time.

In preparation for delivering their regional and local strategies, local authorities should use this stage in the RFT to lay the groundwork for a strategic and financially sound implementation. By considering various business models and their implications, authorities can position themselves to make informed decisions during the subsequent phases of the rollout, ensuring the successful integration of destination and neighbourhood charging infrastructure into the community landscape.

3.5 Detailed Requirements for Objective 5 – Develop an Implementation Plan and Risk Register

The high-level implementation strategy should define the next steps to planning for delivery of EV charging infrastructure. It should identify the local authority's role (and the regional group's role, if applicable) to delivering charging infrastructure to meet regional / local targets. A minimum of 70% of the required charging infrastructure (100% for neighbourhood charging, 70% for destination charging) is anticipated to be needed to be provided by the local authorities.

Delivery of the EV Charging Infrastructure Strategy will be highly challenging and require transformation of existing systems and processes. It is recognised that there are associated risks that will need to be managed and mitigated centrally and by key stakeholders to enable the delivery of the strategy these should be called out. When developing strategies, it is important to consider the following:

- What are the resource constraints for the strategy development and subsequent phases of delivery?
- What are the funding requirements to deliver the approach outlined in the strategy?
- What are the third-party dependencies for the delivery of the strategy?
- What are the potential scenarios that would significantly alter the details outlined in the strategy?
- What are the risks associated with the strategy proposed?
 - Identify challenges, risk, constraints along with associated mitigation measures for the delivery of proposed EV charging strategy. This should be communicated through a risk register for the strategy and each project bundle identified.

It is suggested that there will be a detailed understanding of challenges and risk specific to each local authority - these will need to be managed and mitigated by local authorities, ZEVI and key stakeholders.

3.6 Summary of Strategy Contents

Section	Description
Policy Context and Strategy Objectives	Rationale for deploying destination and neighbourhood charging regionally/ locally and alignment with overarching and complementary national and international policies / strategies / plans.
Current State	Describe the current state of EV charging infrastructure in destination and neighbourhood locations locally and the gaps in the network to meeting current and future demand.
Regional / Local Charging Targets	Regional EV charging targets should be stated with a breakdown of local area targets, by destination and neighbourhood charging types, and by intended delivery date (2025 and 2030). This section is a description of the modelling analysis.
Expected Impact	Outline expected benefits for the area affected by the delivery of charging infrastructure, including a discussion of the contribution to GHG emissions abatement, and disadvantages to any groups anticipated and how these will be mitigated.
Delivery Strategy	Identification of the local authority's role (and the regional group's role, if applicable) and the intended business model approach to delivering charging infrastructure to meet regional / local targets. Outline potential risks to project delivery and mitigation strategies.
Action Plan	Define the next steps for implementing the Regional / Local Strategies.



4

Section 4 Funding Supports and Key Contacts

4.1 Funding Support for Completing the Strategy

It is anticipated that local authorities will engage with third-party consultants to assist in the development of the EV charging infrastructure strategies. ZEVI will work with local authorities through the process from procurement to strategy preparation and finalisation.

ZEVI will support local authorities with funding for the completion of the strategies. The funding available to local authorities is:

- €40,000 per local authority
- €100,000 cap for >2 local authorities completing joint/regional strategies

Note: where local authorities regionalise, and tenders exceed above amounts, ZEVI will consider these on a case-by-case basis and approval should be sought from ZEVI in advance of awarding any contract.

The funding will be made available to local authorities in two tranches, once a third-party consultant has been appointed.

- 50% once the award has been made
- 50% on completion of the strategy

4.2 Key Contacts

The ZEVI team are available to support at each point in the process.

Michael McGrath, the Head of Local Infrastructure is the key point of contact.

Aoife O'Grady – Head of ZEVI

Aoife.ogrady@transport.gov.ie

Michael McGrath – Local Infrastructure Lead

Michael.mcgrath@transport.gov.ie



Appendices

A. Sample RFT Structure

The table below is an example table of contents for an RFT EV Charging Infrastructure Strategy that can be considered by each local authority. The headings and overview contents are indicative and make no claim to be exhaustive. Rather they serve as a guide to local authorities to assist them develop their own regional strategies tailored to their individual needs and circumstances.

Section	Areas for Consideration (non-exhaustive)	Overview
Scope of Contract and Terms of Reference	Introduction	Background & overview of alignment with National EV Charging Infrastructure Strategy 2022-2025 Overview of the local authority's role in EV charging infrastructure Overview of local authority and summary of geographic scope
	Policy Statement	Overview of the local authority policy for neighbourhood, destination and enroute EV charging infrastructure and alignment with the National EV Charging Infrastructure Strategy 2022-2025 and other relevant national and local policies and strategies
	Project objectives of local authority EV strategy	Detailed overview of the project objectives
	Overview of Service Requirements	Summary of requirements Indicative budget Timelines for delivery
	Overview of stakeholder engagement	Details of stakeholders the consultant will engage with through the development of the strategy including internal local authority contacts and external contacts i.e., ZEVI, TII, NTA, Failte Ireland, HSE, OPW, National Parks, Waterways Ireland, Airports, ESB, CSO, CPOs, private and public car park operators
	Detailed service requirements	Policy Review Review of existing complementary local, regional, and national policies, strategies and plans (beyond only EV infrastructure specific) to align regional / local EV charging infrastructure strategy. Current Status Details of current total national and local fleet, current EV fleet, current public EV infrastructure, percentage homes without off street parking, percentage homes without off street parking but also without on street parking (potential need for hubs for base charging), current emissions, air quality. Modelling and Analysis Detailed geospatial data analysis and modelling, including current situation, to assess future residential and destination charging volume required, based on four scenarios. Consultants should do a preliminary analysis to flag where grid capacity may be a concern for delivering on an area's targets. A useable file of the calculations for the fleet forecast and charging demand scenarios and assumptions from 2024 to 2031 should be provided to allow for continuous monitoring and evaluation of progress towards achieving charging infrastructure targets.

<p>Scope of Contract and Terms of Reference contd.</p>	<p>Detailed service requirements contd.</p>	<p>Benefits Detail the benefits of transition to EVs and how the accelerated rollout of EV infrastructure will facilitate this transition. Benefits should be considered around environmental quality such as impact on air and noise quality and GHG emissions reduction.</p> <p>Challenges & Risks Examination of challenges, risks, and mitigations for the delivery of the strategy and meeting EV charging infrastructure requirements.</p> <p>Role of Local Authority Detail the benefits of transition to EVs and how the accelerated rollout of EV infrastructure will facilitate this transition. Benefits should be considered around environmental quality such as impact on air and noise quality and GHG emissions reduction.</p> <p>Roadmap & Financials Overview of the roadmap for the completion of the business case and funding request to ZEV with an initial overview of the financial requirements to deliver the strategy.</p> <p>Other considerations User needs personas should be consulted throughout the strategy's development, regular communication and consultation with the local authority, regional group (if relevant), and ZEV to ensure strategy aligns with regional / local strategies developed in parallel, scheme alignment.</p>
<p>Instructions to Tender</p>	<p>Communications, local authority staff contacts, request for tenders, non-compliant tenders, tender assessment, tender award, non-compliant tenders particulars</p>	<p>N/A</p>
<p>Conditions of Engagement / Contract</p>	<p>OGP service contract or conditions of engagement for consultancy services</p>	<p>For contracting authority to consider most appropriate contract to use</p>
<p>Form of Tender and Schedule</p>	<p>Tender sum and particulars relating to the contract and delivery</p>	<p>Tender price and hourly rates, schedules, performance, insurance requirements, coordination, intellectual property, termination, disputes, service fees, programme and milestones, payments, management services, reporting, warranties, etc</p>

B. Procurement Timelines and Quality: Price Ratios

It is anticipated that the procurement process for third party consultant support will take between 6-10 weeks to complete. The table below outlines indicative timeframes and stage gates for completion of the process.

Issue RFT	Start week 1
Closing date for queries	End week 2
Closing date for receipt of tenders	End week 4
Award Decision	End week 6
Contingency	~4 weeks
Contract Commencement	Start Week 8
Strategy Preparation	~4-6 months

It is essential to strike a balance that prioritises both the quality of proposed solutions and their cost-effectiveness. The suggested ratios aim to guide local authorities in evaluating bids that not only meet stringent quality standards but also provide optimal value for public investment. By emphasising a balanced approach, such as 70/30 ratio in favour of quality, the RFT encourages vendors to deliver innovative and high-quality solutions while ensuring cost considerations remain integral to the decision-making process.

Selection & Award Criteria	Methodology (~30%)	Assessment of the methodology and approach proposed to deliver the detailed specification of service requirements.
	Quality of Team (~30%)	Required experience and skillsets include strategy development at a local government level, geospatial modelling, power grid assessment, analysis of public-private business model approaches to infrastructure installation, operations, and maintenance, and deployment and implementation planning. These experiences and skills should be demonstrative of previous work related to strategic EV charging infrastructure planning.
	Contract Management (~10%)	Assessment of the proposed approach to contract management based on the conditions set out in the RFT.
	Cost (~30%)	Assessment of proposed costs for the completion of the overall strategy.

The ZEVI team are available to support local authorities in the preparation of the RFT document and throughout the procurement process. The points of contact will be communicated at follow-on workshops/webinars to each local authority and regional grouping.

C. Communication & Consultation

Each local authority will have local responsibility for the planning and delivery of EV Infrastructure, with the ZEVI team providing national coordination as support throughout the process. This will be a multi-stakeholder process with a requirement for communication and consultation with stakeholders throughout.

To navigate the diverse challenges faced and implement a successful charging network that meets the needs of users and makes efficient use of resources, the collaboration of several stakeholders is critical in the planning, design, and implementation of the infrastructure.

By involving relevant stakeholders, local authorities can tap into their expertise, leverage existing resources, and navigate potential obstacles more effectively. This collaborative approach not only enriches the decision-making process but also helps in crafting EV charging strategies that are adaptive, resilient, and reflective of the community's evolving needs and priorities. Suggested communication and consultations include:

Engagement with other local authorities

- Collaboration with neighbouring local authorities in the strategy preparation process.
- Establish a network for knowledge-sharing among local authorities.
- Engagement with other local authorities who have completed the strategy process or are in the process of doing so.

Engagement with Regional Assemblies

- Engagement and alignment with Regional Assemblies.
- Participate in regional planning discussions to align strategies with broader regional goals.
- Collaborate on funding applications and regional infrastructure plans.

Engagement with ZEVI

- The ZEVI team will be available to support local authorities throughout the process.
- Collaborate on funding opportunities and grant applications.
- Provide regular updates on local progress and challenges to inform national strategies and other local authorities.

Engagement and Consultation with ESB Networks

- Collaborate with ESB Networks to assess electricity supply requirements.
- Engage with ESB Networks on future planning and roadmap to ensure the grid can support requirements.

Engagement with Transport Infrastructure Ireland

- Engage with Transport Infrastructure Ireland in relation to charging infrastructure across the road network.
- Understand and plan for overlaps across en-route, residential/neighbourhood, and destination EV charging infrastructure.
- Key areas of engagement and collaboration may include policy statement, modelling assumptions and methodology, business models, challenges, risks, and roadmaps.

Engagement with Charge Point Operators (CPO)

- Engage with CPOs to map current and planned EV charging infrastructure.
- Share information about the local authorities charging plans and gather insights from CPOs about their rollout schedules and coverage areas to avoid overlaps or clashes in the rollout of EV charging infrastructure.
- Engage with CPOs on potential business models and implementation roadmap.

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