Electric Vehicle Charging Infrastructure Strategy

OVERVIEW

Staffordshire County Council

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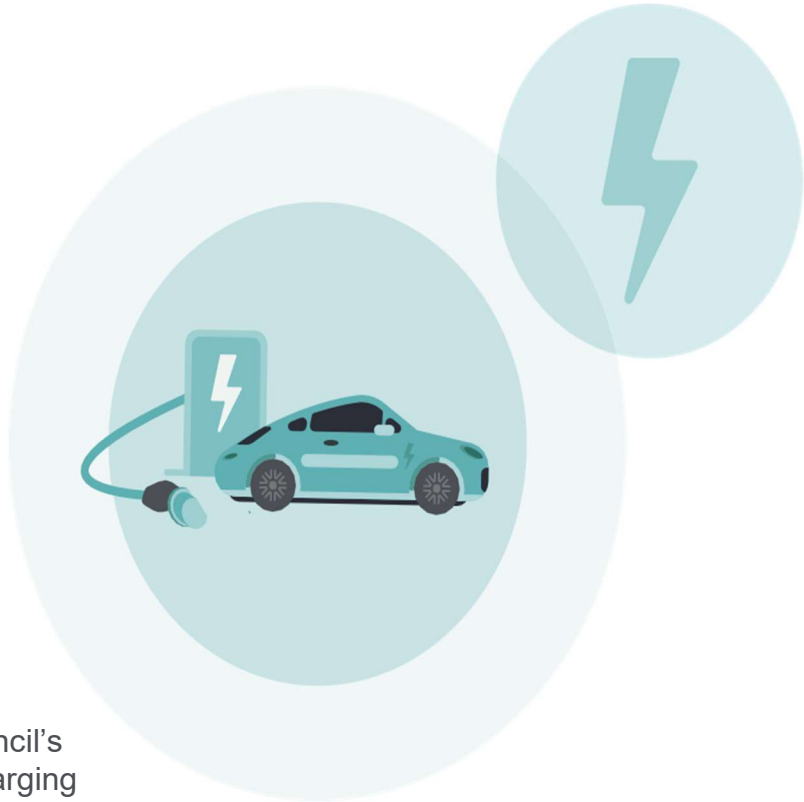
FOREWORD



Climate Change is a huge issue that affects us all. Staffordshire County Council (SCC) declared a climate change emergency in 2019 and made a firm commitment to achieve net zero carbon emissions by 2050.

Since 2019 we have reduced our own carbon emissions by 43%, but SCC and the entire public sector only account for 2% of all emissions in Staffordshire. Transport accounts for around 40% of the county's total annual carbon emissions, and as well as contributing to climate change, has a major impact on public health.

We have a role to play in inspiring and facilitating more people to switch to greener and active travel, such as walking and cycling, or the use of electric vehicles (EVs).

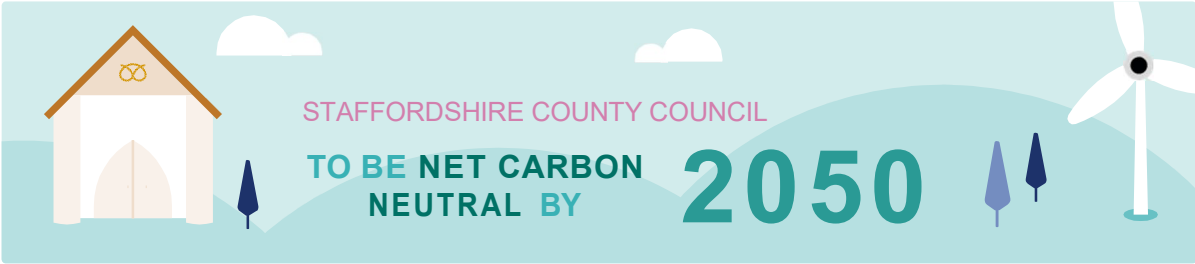
Indeed, the Government has banned the sale of all new petrol and diesel cars beyond 2030.

However, it is essential that Staffordshire has a convenient and accessible network of EV charging points. While it is not the county council's role or responsibility to install the charging points, we know our communities, and we want to work with and partner local authorities and the private sector.

This strategy sets the scene for why we need to act, explains where we are and outlines the role that Staffordshire County Council will play.

Cllr David Williams
Cabinet Member for Highways and Transport

02 INTRODUCTION



In 2019, Staffordshire County Council (SCC) declared a climate emergency and committed to becoming net carbon neutral by 2050. To achieve this, the Council reviewed its operations and activities as well as putting in place a monitoring and evaluation programme to track progress.

Transport is a major contributor to the climate, health and ecological challenges being faced. In June 2019, the UK Government acknowledged this and announced ambitions for the transport network to be net zero by 2050. This was followed in November 2020 by an announcement of the ban on new petrol and diesel car sales by 2030. These are amongst the early steps in transitioning to sustainable modes of transport and the increased use of Electric Vehicles (EVs) will support the push to net zero.

Further steps will be needed to encourage the removal of all petrol and diesel cars, including the growth of a viable second-hand EV market to reduce vehicle costs.

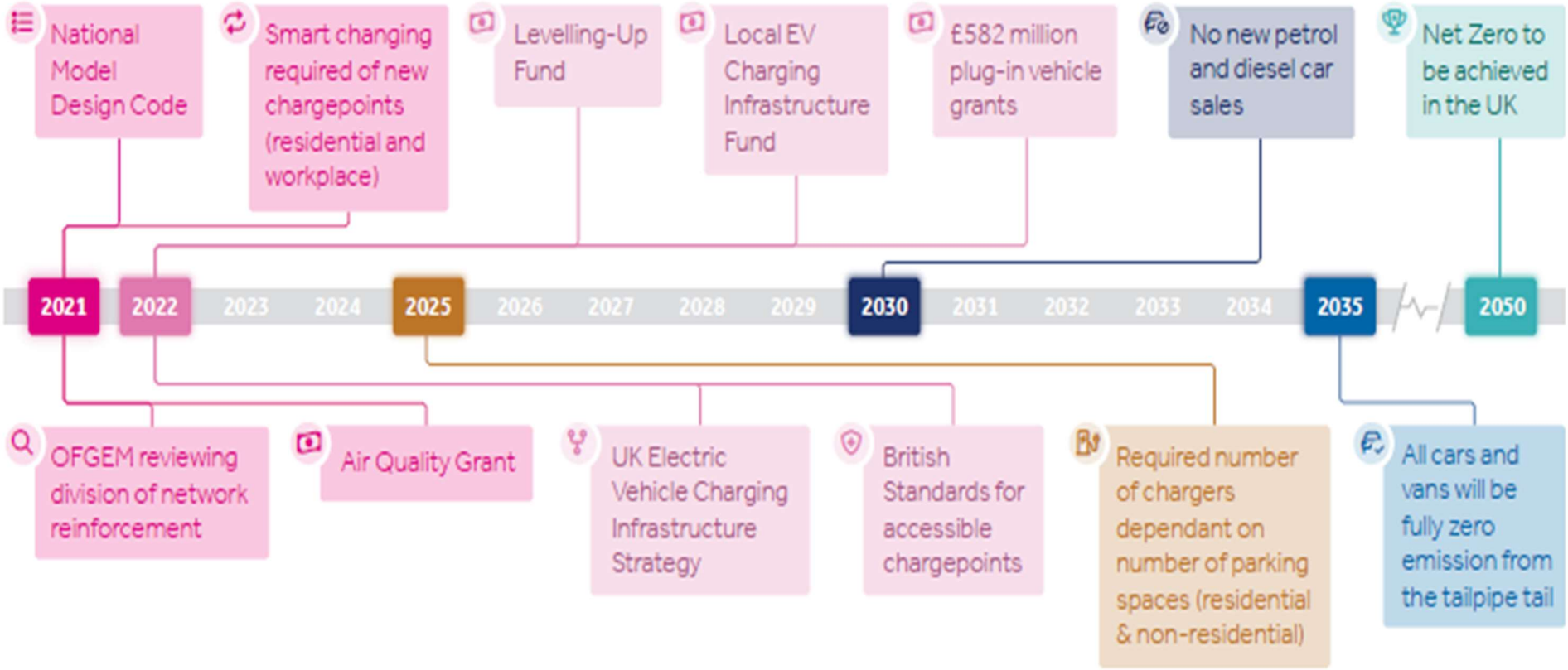
In March 2022 a national EV Infrastructure Strategy was published which committed an additional £620 million to support the transition to EVs. The strategy sets out the role that local authorities have, to coordinate and facilitate the rollout of chargepoints and enabling the transition through the integration with other transport modes in order to meet community needs.

To support the move to EVs and other electric modes of transport, an EV charging network is essential. While it is not SCC's role to install and maintain the charging network, as the highways authority, a major land and asset owner, and our commitment to achieving net zero, we do have an important coordinating and facilitating role. SCC therefore commenced a concerted effort in 2019-20 to kick-start EV charging for the public but then COVID-19 struck, and this early work was stalled. SCC re-invigorated this work in late 2021 through commissioning Amey Consulting to work alongside them.

This support facilitated the gathering of knowledge, developing a strategy and action plans whilst supporting all the Staffordshire district, town, and borough councils by bringing everyone together to increase understanding, provide a framework, and assist in the decision-making process.

EV car ownership sits at about 1% of the total UK car fleet in late 2021 and this is expected to increase to around 10% over the next three years. As battery technology improves, traveller range anxiety has lessened and price parity between combustion engine cars and EV cars is on the horizon (expected around 2026). Access to a usable and convenient charging network will therefore encourage further uptake of EVs and help to reduce inequalities in accessing this essential technology.

New government guidance now mandates EV charging in some car parks and most new homes. The newly published 'UK EV Charging Strategy'[1] along with this 'SCC Public Charging Strategy' will be crucial components in outlining how a charging network should be developed, where chargepoint installation should be considered, and how the Council will support the installation of chargepoints.



1 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1065576/taking-charge-the-electric-vehicle-infrastructure-strategy.pdf
https://www.gov.uk/government/publications/uk-electric-vehicle-infrastructure-strategy

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CURRENT STATE OF THE COUNTY

SCC recognise that climate change is the biggest environmental challenge facing the world today and has reflected this by identifying climate change as one of the four key principles in the Council's Strategic Plan. SCC recognises that actions are needed to minimise the Council's carbon emissions. These actions are to either stop carbon emissions, develop ways to remove carbon that is already in the atmosphere (sequestration) or help communities and business prepare for the impact of changing climate (adaptation).

EV adoption forms a critical part facing climate change, and the decarbonisation of transport in Staffordshire, which is a key objective of Staffordshire's 2021-2025 Climate Change Action Plan.

Description	Action	Proposed timeline
Increase the number of Electric Vehicle (EV) charging points.	Work with district and borough councils to agree a consistent approach to EV infrastructure across Staffordshire.	Mar 2023
	Investigate the potential to upgrade electricity supply in SCC building stock to facilitate EV charging in retained property portfolio.	Mar 2022
	Develop an EV Infrastructure Strategy and Low Emissions Vehicle Infrastructure Action Plan	Mar 2024
	Maximise opportunities to bid for Department for Transport funding, including workplace charging fund (at SCC buildings) and on street residential charging fund.	From Nov 2021
	Work with Amey to roll out EV charging across all highway's depots.	From Nov 2021

Table A: Carbon Reduction – CCAP – Chargepoints. CN-08-21
Source: Climate Change Action Plan 2021-2025

The 2011-2026 Local Transport Plan highlights the need to reduce the reliance on private vehicles and support active travel and other modes, it acknowledges that cars will still play a role in the transport choices for many.

The availability of charging infrastructure across Staffordshire County can provide an important focus on encouraging the growth in use of EVs, whilst supporting the rural community. Midlands connect, who research and develop transport projects, also acknowledge the significance of EVs and EV infrastructure in the movement to decarbonisation.

At the end of May 2022, there were 32,312 charging points across the UK, at 19,945 charging locations. This represents a 32% increase in the number of charging devices since May 2021.[2]

This is driven by an increased demand for EVs, with more than 300,000 BEVs and 600,000 PHEVs on UK roads in 2021. As the number of EVs grow, retailers, supermarkets and other public facing organisations with car parks look to partner with chargepoint suppliers and provide their customers and visitors with the required charging. Demand for EV charging could well be at around 300,000 chargepoints by 2030.[3]

Staffordshire Local Transport Plan (2011-2026)

Reducing road transport emissions and their effects on the highway:

- We will promote alternatives to private motor vehicles
- We will promote the use of low-emitting vehicles and vehicle efficiency
- We will lead by example and reduce our own road transport emissions
- We will improve the resilience of the transport network to changing climatic conditions

	UK	West Midlands	Stafford-shire
Total public charging devices	28,375	1,969	239
Total public rapid charging devices (25kW+)	5,156	495	105
Public rapid chargers as a % of total public charging devices	17%	25%	46%
Charging devices per 100,000 population	42.3	31	26

Table B: EV charging stats Jan 22 DfT EVCD_01a/b

2 How many charge points are there in the UK 2022 – Zap-Map
3 Government announces tenfold expansion in charge points by 2030 (zap-map.com)

Research conducted by Ordnance Survey, Zap-Map and Field Dynamics has identified that across Staffordshire, on average 75% of households have access to off-street parking and of those households that do not have off-street parking, on average of 3% of households are within a 5-minute walk from a public chargepoint.

The 97% of households that do not have access to off-street parking and are not within a 5-minute walk of a public chargepoint equates to approximately 92,000 households. A public chargepoint infrastructure network should prioritise solutions that enable an equitable and accessible network for these 92,000 households.

Council	Percentage of households with access to off-street parking	Percentage of households within a 5-minute walk of a public charger
Cannock Chase	79%	1.8%
East Staffordshire	67%	5.2%
Lichfield	76%	11%
Newcastle Under Lyme	76%	0.5%
South Staffordshire	77%	2.5%
Stafford	75%	5.6%
Staffordshire Moorlands	80%	0.9%
Tamworth	71%	0.1%

Table C: Source: National Ranking of EV Charge Point Coverage, Ordnance Survey, ZapMap & Field Dynamics

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COUNTY DEMAND ANALYSIS OVERVIEW

EV charging analysis maps

Data-led research has been undertaken to analyse where the highest propensity of demand for EV charging exists within the county which has been visualised by maps. The map shown illustrates the relative levels of demand as well as the recommended charging infrastructure type that is appropriate for that environment. The map is divided up by boroughs or districts along the Lower Layer Super Output Areas (LSOA), each LSOA area has an average of 1,500 people or 650 households.

KEY

Propensity for EV Demand

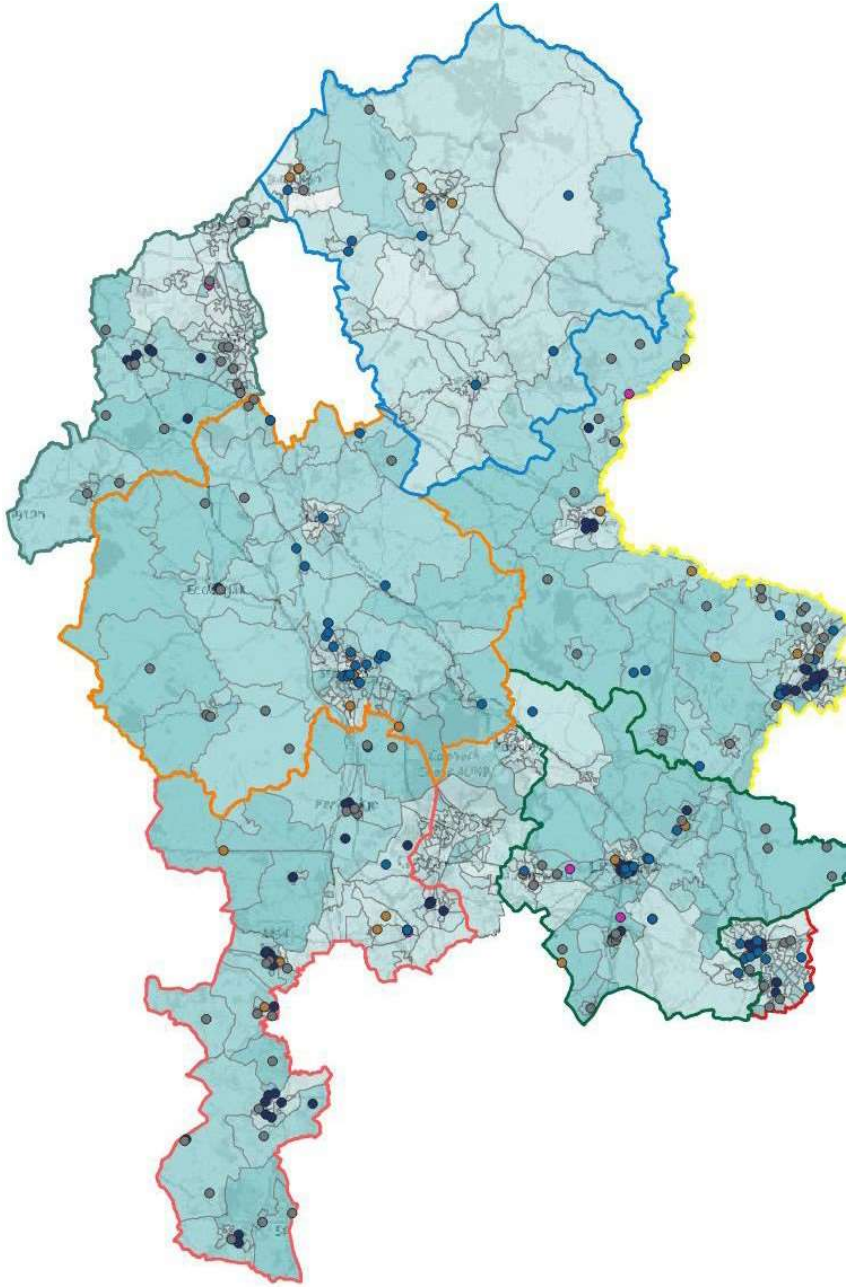
Low

Medium

High

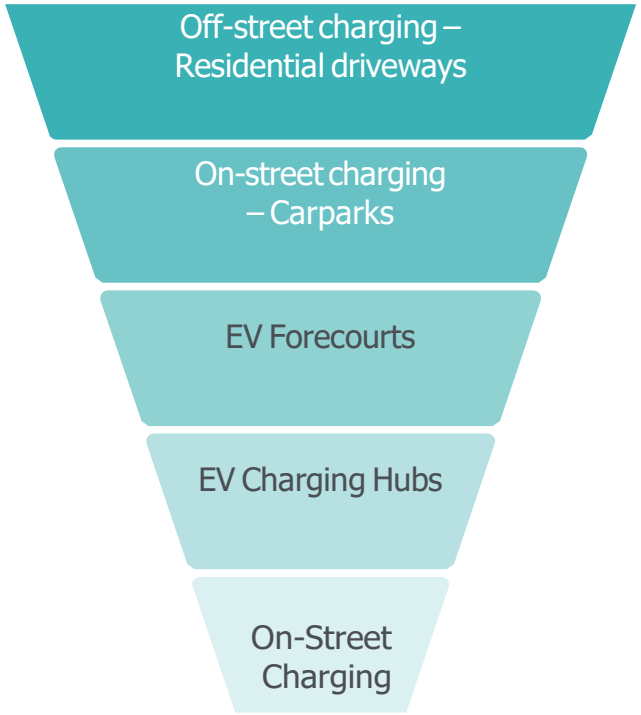
Chargepoints

- Charging Hub
- EV Forecourts
- Existing Chargepoints
- Off Street Public
- Off Street Residential



Through the analysis, a suggested EV charging hierarchy has been developed. The hierarchy considers the propensity analysis, solution analysis and the specific solutions suited to the Council. The objective of the hierarchy is to enable SCC and district and borough councils to coordinate solutions best suited for Staffordshire. A review of On Street Charging has been provided in Appendix C of the SCC Public Electric Vehicle Charging Infrastructure Strategy.

SCC and district and borough councils should coordinate support and communications in the order displayed, though these priorities will change over the coming years as government initiatives are deployed, the market matures, and public demand patterns change over time. For local reasons the priorities may differ for each of the district and boroughs of Staffordshire.



Chargepoint service	Typical chargepoint type	Location type	Demand met
Off-street charging – Residential driveways	Slow charging	Private residents with off-street parking	Support private car owners to switch to EV
Off-street charging – Carparks	Fast / rapid charging	Charging in car parks both private and council owned	Support destination charging
EV Forecourts	Rapid charging	Existing petrol stations	Support the switch to EV while there is still a need for petrol vehicles. Commonly there are partnerships between oil & gas companies and chargepoint operators for example BP Pulse
EV Charging Hub	Rapid or ultra-rapid charging	4 or more chargers in the same location often with the opportunity to add other modes of transport or at transport hubs such as train stations	Depending on scale can support a community uptake in EVs or target high volume traffic routes such as the Strategic Road Network, to support longer EV journeys to or through the area
On-Street Charging	Fast / rapid charging	Residential areas where there is no or limited access to private driveways	Support private car owners switch to EV

Table D: Chargepoint Services

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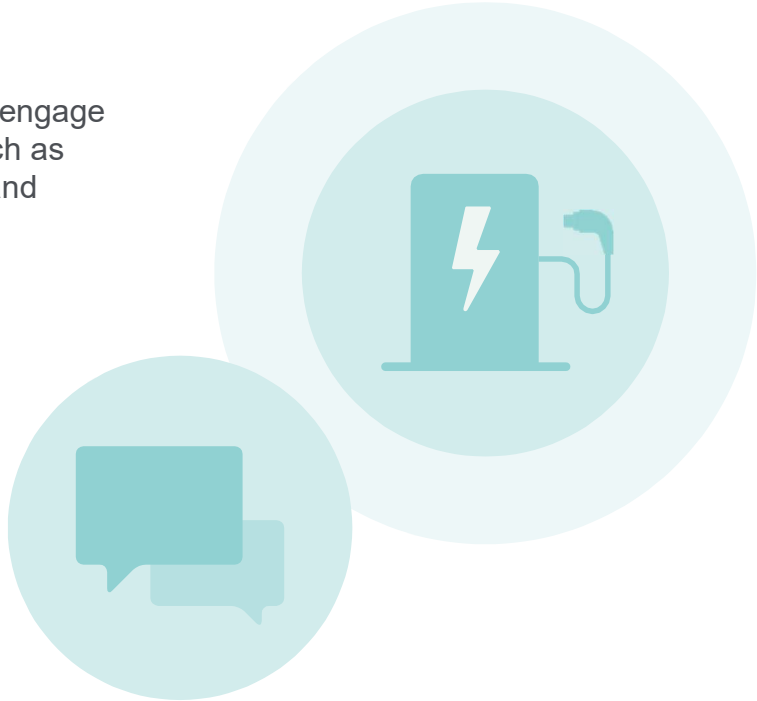
NEXT STEPS

Through developing this strategy document, SCC acknowledges the importance of engaging with district, borough, and parish councils to facilitate a consistent and effective EV charging solution for the people of Staffordshire and its visitors.

It is important to bring both district and borough councils and the residents along with Staffordshire County Council on this journey to coordinate a solution for the benefit of all; the development and delivery of an engagement programme will be key next steps.

It is also expected that in collaboration with district and borough councils we will need to engage with chargepoint operators operating across the county and with local users, taking onboard feedback and ensuring that the solutions meet demand and expectations.

The councils will need to engage external stakeholders such as developers, businesses and landowners to support installation on their land and promote the new chargepoint network where relevant.



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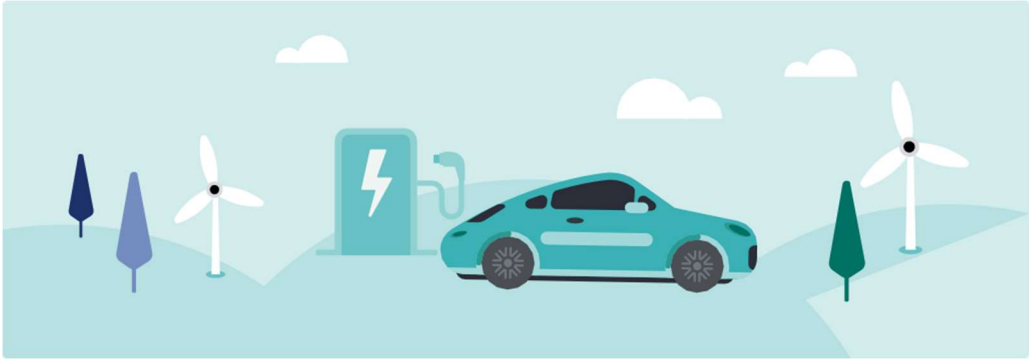
RECOMMENDATIONS AND CONCLUSION



Recommendations:

1. Local authorities should review this Strategy and ensure feedback they receive from chargepoint users and stakeholders at key delivery points is included in further plans and actions.
2. Local authorities should engage with their procurement teams to assess the appropriate avenues for procurement, taking into account the operating and commercial models that are optimal for each local authority. Continued assessment of appropriate and relevant funding for the councils to install chargepoints will support their residents in making the transition to EVs.
3. Local authorities should ensure a feasibility study is undertaken that follows good practice with well-developed processes and procedures for installing any chargepoints that will be publicly accessible.
4. Staffordshire County Council will continue to engage with all district and borough councils to provide a consistent approach to EV rollout across Staffordshire.
5. SCC should co-ordinate joint bids to maximise opportunities and each district and borough council should aim to support residents in staying up to date with relevant funding information.
6. District and borough councils should engage as a group with private chargepoint operators to ensure they follow best practice and encourage charging solutions at locations tailored to the requirements of each area, for the benefit of as many citizens as possible.
7. Each district and borough council should ensure a monitoring system is in place to review the impact of their EV charging strategy and feed this back to the public where relevant. When new data is available, the analysis should be updated. The developed EV Charging Action Plan should be adopted by each council and implemented against a common timeframe.

The Public EV Charging Strategy that supports this Executive Summary outlines a methodology to help the local councils meet the anticipated growth in demand, this is based on current data, predictions, and the impact of upcoming policies. Through assisting development of the charging infrastructure networks across the county Staffordshire County Council can support the local authorities in the creation of a sustainable charging network for the benefit of residents and visitors to the borough; all of which will produce positive steps towards reaching net zero.

Staffordshire County Council has been clear in their objectives for decarbonisation and their commitment to supporting local authorities and residents in producing modal shift. The Public EV Charging infrastructure Strategy considers not just existing EV users but potential users. It examines the transport network across Staffordshire and aims to support modal shift to a more sustainable travel network for the future.

As EV use grows this data led approach can be further updated and adapted to recognise where further charging demand and infrastructure is required. As policies continue to be implemented both UK wide and across Staffordshire the implementation of this charging infrastructure strategy will ensure each of the councils are prepared to meet policy changes and the challenges ahead.

Staffordshire County Council's position should continue to be supporting the local councils with information, consistent approaches, coordinating bids and broad support; whilst promoting options and funding choices for the public. Implementing all these steps will support the successful growth of EV charge point installations across the county.

This document has been made in partnership with:

Staffordshire County Council

ameyconsulting