City of
Stoke-on-Trent

Electric Vehicle Infrastructure Strategy for Stoke-on-Trent

August 2025 - 2030

Foreword

As the Cabinet Member for Transport, Infrastructure, and Regeneration, I'm proud to share our electric vehicle (EV) infrastructure strategy—a plan that reflects our shared commitment to a cleaner, healthier, and more sustainable future for Stoke-on-Trent.

Stoke-on-Trent is a city with a proud history of resilience and hard work. From the kilns of our industrial past to the innovation we see today, this city has always risen to meet the challenges of the moment. And right now, we face one of the greatest challenges of our time: climate change.

The decisions we make today will determine the kind of world our children and grandchildren inherit. We know the facts. We see the rising temperatures, the polluted air, and the growing pressures on our environment. But we also see the opportunity—to come together, to act responsibly, and to ensure a brighter, cleaner, and more accessible future for all of us.

Electric vehicles are part of that solution. They give us cleaner air, quieter streets, and a way to reduce our reliance on imported fossil fuels. But for this transition to work, we must ensure it's accessible to everyone—not just those with the means or the conveniences to adapt quickly. That's why this strategy focuses on fairness, building the infrastructure where it's needed most.

We're prioritising areas with poor air quality, neighbourhoods where off-street parking isn't an option, and communities that have been underserved for too long. No one should be left behind as we move toward a better future. No matter where they live, every family deserves to benefit from this progress.

This plan is also a practical investment in our city's future. By creating a strong, reliable network of EV charging stations, we're laying the foundation for economic growth. Visitors and businesses will see Stoke-on-Trent as a city ready to lead, prepared for tomorrow's challenges.

We're aligning this strategy with the UK's commitment to phase out petrol and diesel vehicles by 2035. But we're not waiting for the change to come to us. We're taking the initiative now because we know that the health of our planet—and our city—depends on it.

This work is being done thoughtfully and responsibly. We're using government funding to attract private investment, ensuring we build a system that's sustainable for the long term.

We have a responsibility to act, and I believe in our ability to rise to the occasion. The road ahead won't always be easy, but I know we'll meet this challenge with the same courage and unity that have defined our city for generations. Together, we can build a Stoke-on-Trent that is cleaner, stronger, and full of opportunity.

Cllr Finlay Gordon-McCusker

Cabinet member for Transport, Infrastructure and Regeneration

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Glossary

CPO – Charging Point Operator	**ICE** – Internal Combustion Engine
DfT – Department for Transport	**LEVI** – Local Electric Vehicle Infrastructure
EV – Electric Vehicle	**OZEV** – Office for Zero Emission Vehicles
EVCP – Electric Vehicle Charging Point	**SOTCC** – Stoke-on-Trent City Council
EVI – Electric Vehicle Infrastructure	**ULETIS** – Ultra Low Emission Taxi Infrastructure Scheme

Executive Summary

Stoke-on-Trent City Council has developed a comprehensive Electric Vehicle Infrastructure Strategy, in line with the government's mission driven approach, to facilitate the transition to electric vehicles, in line with national objectives to achieve net-zero emissions by 2050 and phase out petrol and diesel cars by 2030 and hybrids by 2035. This strategy addresses the urgent need to decarbonise transport, improve air quality, and prepare the city for the increasing demand for EV infrastructure. With the health of residents and the city's economic and environmental sustainability in mind, the strategy outlines a clear roadmap for enhancing EV infrastructure in Stoke-on-Trent. This document will be updated accordingly and will run until 2030.

The Need for Decarbonising Transport

Transport is the largest emitting sector of greenhouse gas emissions, producing 26% of the UK's total emissions in 2021[1]. The strategy recognises the transitioning to EVs is a key step toward reducing the city's carbon footprint. The strategy supports the UK's goal to phase out the sale of new petrol and diesel vehicles by 2030 and achieve net-zero emissions from transport by 2050.

Air pollution, primarily from internal combustion engine vehicles, has serious health consequences in Stoke-on-Trent, where levels of nitrogen oxides and particulate matter exceed World Health Organisation recommendations. Pollution contributes to respiratory and cardiovascular diseases, with severe impacts on public health. Nationally, approximately 40,000 early deaths are attributed to air pollution, with a significant financial burden on the NHS and social care.

Government Targets and Local Initiatives

The UK Government's ban on new ICE vehicle sales by 2030 has set a clear mandate for the city. Currently, there are approximately 1,700 EVs registered in Stoke-on-Trent, but this number is projected to rise significantly, with estimates suggesting that by 2030, 25% of all cars in the city will be electric. To support this rapid growth, the council will invest nearly £3 million in central government funding

[1] Transport emissions Transport and environment statistics: 2023 - GOV.UK

from the Local Electric Vehicle Infrastructure (LEVI) fund to expand EV charging infrastructure.

The primary focus of the strategy is for the local authority to fill the gaps left by the private sector charging infrastructure and support residents who do not have access to off-street parking by providing public EV charging points in residential areas. This infrastructure will also be available for visitors and businesses, promoting broader EV adoption and encouraging further private sector investment.

Policy Alignment

The strategy aligns with national, regional, and local policies. National frameworks including the UK's "Road to Zero" (2018)" and "Taking Charge" EV strategy (2022) emphasise the need for a reliable and extensive EV charging network. Regionally, Midlands Connect's "Supercharging the Midlands" (2021) report highlighted the need to drastically accelerate the roll-out of public EV charging points to meet growing demanding by 2030, including residential and high-power rapid charging hubs. Locally, Stoke-on-Trent Council's Transport Strategy (2022) sets out clear commitments for the provision of infrastructure to support the growth in zero emission vehicles, and the Council's Energy Strategy (2023) provides the policy vision and action plan to reduce carbon emissions and achieve net-zero status by 2050.

Current EV Infrastructure and Challenges

As of January 2025, Stoke-on-Trent has 86 public charging points[2], predominately located in service stations, retail parks or charging hubs on or close to main road corridors, however these facilities fall far short of projected demand and do not serve residential areas with limited off street parking. Projections suggest that by 2030, the city will require over 800 publicly accessible EV charging sockets[3]. To address this gap in supply and demand, the council plans to install over 800 EV charging sockets, in partnership with charging point operators, part funded by the Council's LEVI funding allocation.

[2] https://nevis.cenex.co.uk/reports/current-status
[3] https://nevis.cenex.co.uk/reports/future-projections

The LEVI funding will ensure EVI is equitably distributed across the city, and not just concentrated in the most commercially attractive areas. This will ensure that residential areas with limited access to private off street parking can access public EVI within close proximity to their home.

Action Plan for Infrastructure Development

The strategy outlines an ambitious delivery plan supported by LEVI funding. Key actions include:

- **Expanding EV Charging Infrastructure:** The council will strategically install EV charging points in residential areas, public car parks, and high-traffic zones.
- **Public-Private Collaboration:** Partnerships with private sector stakeholders, such as charging point operators and energy providers, are essential to scaling up the infrastructure and for attracting further private sector investment into the City's EV charging network.
- **Futureproofing:** The strategy ensures the infrastructure is designed to accommodate future advancements in EV technology and increased demand, with an emphasis on smart charging solutions and grid capacity upgrades.

Addressing Accessibility and Equity

To promote social equity, the strategy prioritises installing EV charging points in underserved residential areas with limited private off street parking, ensuring all residents have access to the benefits of clean transportation. The council's approach includes:

- **Cross-Pavement Charging:** For residents without off-street parking, the introduction of cross-pavement charging solutions will allow safe, convenient home charging without obstructing pedestrians.
- **Compliance with Accessibility Standards:** All charging points will adhere to Publicly Available Specification (PAS) 1899 to ensure they are accessible to all users, including those with disabilities.

Promoting EV Adoption

A key objective of the strategy is to increase public awareness and confidence in EV adoption. The council plans to engage with residents through public consultations, workshops, and an online survey to gather feedback on charging infrastructure. This engagement will help ensure the infrastructure meets the community's needs.

Conclusion

Stoke-on-Trent City Council's EV Infrastructure Strategy sets the foundation for a cleaner, and more sustainable future. By expanding the EV charging network, addressing infrastructure gaps, and fostering public-private collaboration, the city is well-positioned to meet its environmental targets while supporting economic growth and enhancing residents' quality of life. This proactive approach ensures Stoke-on-Trent will be at the forefront of the transition to electric vehicles, driving progress toward a net-zero future, and ensuring health and prosperity for the city and the people within it.

1. Purpose for Strategy

1.1. The Need to Decarbonise Transport

1.1.1. Health

Air pollution remains a significant health concern. Like many built-up areas in the UK, Stoke-on-Trent has elevated levels of air pollution, with both NO_x (Nitrogen Oxides) and $PM_{2.5}$ (Particulate Matter) being higher than the healthy recommended limits by the World Health Organisation. The health problems resulting from exposure to these air pollutants include respiratory and cardiovascular diseases, which are linked to approximately 40,000 early deaths a year and annual costs of over £20 billion to UK health services and businesses[4]. Petrol and diesel (ICE) vehicles are a significant contributor to both NO_x and $PM_{2.5}$. It is therefore imperative, for the health of the people of Stoke-on-Trent, for the council to take measures to reduce the cause of these pollutants by assisting in the transition away from ICEs and towards electric vehicles (EVs).

1.1.2. Climate Change

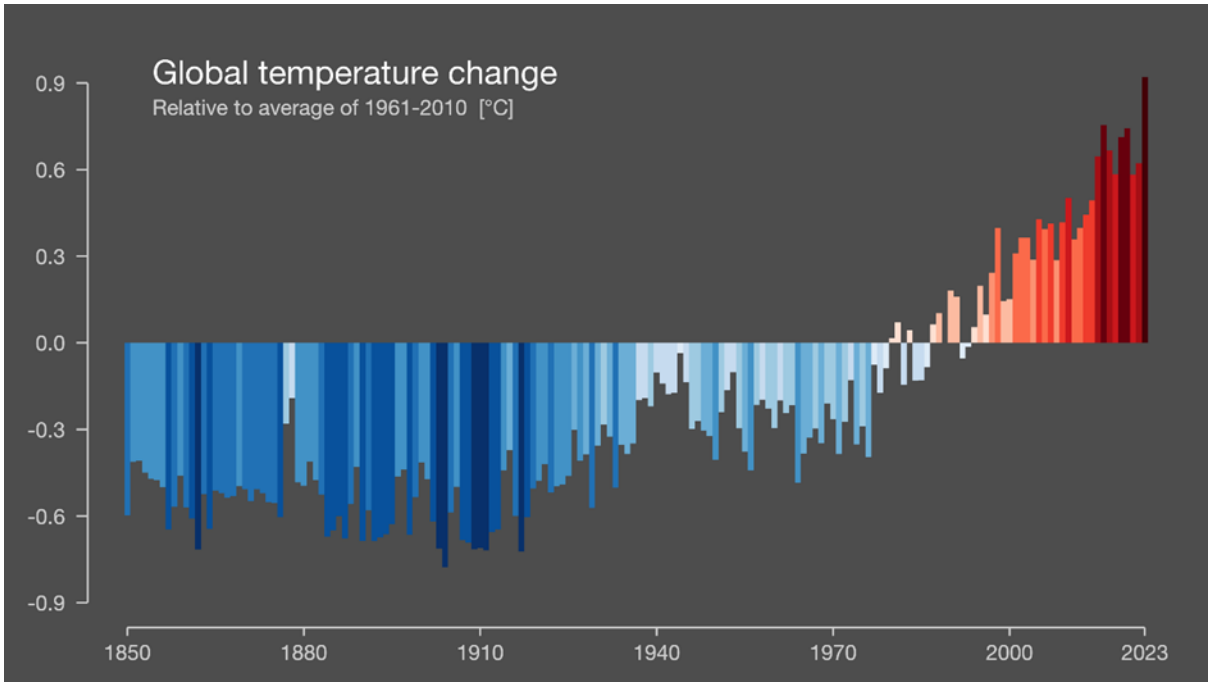

Figure 1 'Climate Stripes', University of Reading, showing changes in global temperature from 1850-2023[5]

[4] Air pollution deaths Every breath we take: the lifelong impact of air pollution | RCP London
[5] Climate Stripes #ShowYourStripes

Along with health concerns, global warming and the 'climate emergency' [6] play a key part in the authority's commitment to lowering the amount of greenhouse gases. Carbon dioxide (CO_2), along with other greenhouses gases created from the burning of fossil fuels, are the primary drivers of global warming and climate change (Fig. 1). Climate change is linked with an increase in the frequency and severity of adverse weather conditions, resulting in erratic temperature fluctuations, heatwaves, droughts, floods, and sea level rises. This is making areas uninhabitable, and is detrimentally impacting ecosystems, agricultural productivity, and human health. The impact of climate change is costing trillions of pounds to the global economy and is at risk of reducing the global gross domestic productivity (GDP) by 50% [7]. In the UK, the impact of increased flood risk has cost the billions of pounds and would have cost more if not for the already costly preventative measures implemented to combat the increase propensity of flooding due to climate change [8]. In the UK, transport is the largest source of greenhouse gas emissions; for Stoke-on-Trent, transitioning to EVs is a critical step in reducing the city's carbon footprint and contributing to national and global efforts to combat climate change. Stoke-on-Trent produces 323 $KtCO_2e$ (thousand tonnes) from transport alone, a third of this coming from cars. Along with wider efforts to transition the city's public transport to zero-emission vehicles, it is necessary for the local authority to play their part in committing to proactive changes to assist in the decarbonisation of personal vehicle use within the city [9].

1.2. Government Targets

1.2.1. Preparing for the ICE ban

In Stoke-on-Trent, the number of registered EVs has increased thirteen-fold within the past 5 years. Last year (Q2 2024), 1,682 EVs were registered in Stoke-on-Trent. Projections show that this number will increase rapidly and exponentially, especially as the price of petrol and diesel remain volatile and with the upcoming central government ban on new petrol and diesel car sales, expected in the UK by 2030.

[6] Science of Climate Change The Climate Emergency (unep.org)
[7] Institute and Faculty of Actuaries (IFoA)
[8] Cost of Flooding to the UK Counting the cost of flooding - GOV.UK (www.gov.uk)
[9] Transport Emissions Climate_Change_Baseline_Evidence_Report_FINAL_v2.0__A__FB (1).pdf

These projections predict that by 2030 nearly a quarter of all cars in Stoke-on-Trent will be EVs, and by 2040 that figure will be closer to three-quarters of all cars on the roads in our city [10]. Currently, the existing electric vehicle infrastructure (EVI), within the city consists, of approximately 86 publicly accessible electric vehicle charging points (EVCPs).

1.3. Aims

1.3.1 Objectives of the Strategy

To support current and growing EV charging demand, this strategy aims to deliver a range of accessible EV charging solutions to support the transition from ICE vehicles to EV ownership. Local Electric Vehicle Infrastructure (LEVI) funding, from Central Government, is a key initial driver for delivering publicly accessible charging infrastructure, initially focusing investment in residential areas of the city with limited access to private off-street parking provision. LEVI funding is a leverage for attracting private sector investment in public charging infrastructure in residential areas of the city which are not currently commercially attractive for private investment alone.[11].

[10] Stoke-on-Trent EV Ownerships Projection Future Projections Report - National EV Insight & Support | Delivered by Cenex
[11] LEVI Scheme Hundreds of EV charging points to arrive in Stoke-on-Trent thanks to £3 million cash boost | Stoke-on-Trent

2. Policy Content

2.1 National Policy

Disclaimer: The following summary of government policy documents does not consider recent changes, or proposed changes, in target dates and commitments. Many of the individual documents were published in isolation of each other, at different times, and therefore may offer some inconsistencies. Furthermore, the individual policy documents were produced under a previous government, so may not wholly reflect the views and ambitions of the current government.

2.2.1 Road to Zero (2018)

This strategy outlined the government's vision for zero-emission vehicles, aiming for all new cars and vans to be zero-emission by 2040. The document calls for a large-scale expansion of both public and private EVI to ensure access across the country. It promotes home and workplace charging through grant schemes and supports rapid charging networks along major routes. The private sector's role is central to this strategy, with the government providing incentives to encourage investment in the charging infrastructure.[12]

2.1.2 Ten Point Plan for a Green Industrial Revolution (2020)

This strategy pledges £1.3 billion for EV infrastructure, aiming to eliminate new petrol and diesel vehicles by 2030. The document promotes the installation of rapid chargers along motorways and major roads to facilitate long-distance travel. Public sector leadership is also emphasised, with government fleets electrifying to lead by example.[13]

2.1.3 Net Zero Strategy: Build Back Greener (2021)

This document outlines how the UK will reach net-zero greenhouse gas emissions by 2050. Central to this plan is the transition to EVs, with the government committing

[12] The Road to Zero The Road to Zero (publishing.service.gov.uk)
[13] Green Industrial Revolution The Ten Point Plan for a Green Industrial Revolution (publishing.service.gov.uk)

£620 million to expand EV infrastructure. The strategy emphasises a need for rapid and ultra-rapid chargers across strategic road networks and residential areas. There is also a focus on leveraging private sector investment while ensuring equitable access to charging in rural and underserved areas. It promotes innovations like smart charging and vehicle-to-grid technology to integrate EVs into the wider energy system effectively.[14]

2.1.4 Taking Charge (2022)

This document outlines the UK's strategy for building a world-class EV charging network. It sets a vision for a reliable, widespread, and easily accessible public charging network, ensuring that EV charging becomes as convenient as refuelling conventional cars. The government committed £1.6 billion for infrastructure expansion, focusing on high-power chargers along major routes and on-street residential chargers, particularly in underserved areas like rural regions. It also emphasises consumer experience, aiming to improve payment methods, ensure interoperability between networks, and provide real-time information on charger availability. The strategy encourages private sector involvement while integrating smart charging technology to stabilise the grid and reduce consumer costs. [15]

2.1.5 Transport Decarbonisation Plan (2023)

This plan reiterates the government's commitment to banning new petrol and diesel vehicles by 2030 and expanding the EV charging network. The government committed £1.3 billion for rapid charging stations along major roads, while local authorities will receive funding for on-street residential chargers. It encourages smart charging solutions and vehicle-to-grid integration, ensuring equitable access for rural and underserved areas [16].

These regulations ensure that public charging points across the UK meet high standards for reliability, accessibility, and ease of use. The regulations mandate contactless payments, real-time availability updates, and interoperability across

[14] Net Zero Strategy net-zero-strategy-beis.pdf (publishing.service.gov.uk)
[15] Taking Charge Taking charge: the electric vehicle infrastructure strategy (publishing.service.gov.uk)
[16] Decarbonising Transport Decarbonising Transport – A Better, Greener Britain (publishing.service.gov.uk)

networks. Local authorities are encouraged to work with charging operators to identify underserved areas for new infrastructure. [17]

2.1.7 Zero Emission Vehicle (ZEV) Mandate (2023)

The ZEV Mandate requires car manufacturers to ensure a specific percentage of their sales are zero-emission vehicles, driving a market shift toward EVs by 2035. This mandate also prioritises the expansion of public and private EV charging infrastructure, especially in areas with lower availability. [18]

2.1.8 Government Manifesto (2024)

SoTCC has ensured that its vision for our Electric Vehicle Infrastructure Strategy aligns with the 'Mission-driven' manifesto of the government, especially in two of the five mission statements[19]:

- **Kickstart economic growth:** The government committed in their manifesto to support the transition to EVs by accelerating the roll out of charge points, giving certainty to manufacturers by restoring the phase-out date of 2030 for new ICE cars and vans. SoTCC will support this through the roll out and delivery of several EV infrastructure programmes (see Section 4).
- **Make Britain a clean energy superpower:** A key element of the government's political programme is the establishment of Great British Energy (GBE), a publicly owned company intended to drive investment in renewable energy sources. GBE will also focus on alleviating delays in grid connections that hinder clean energy projects, including those related to EV charging infrastructure, such as the programmes currently being delivered or planned in Stoke-on-Trent (see Section 4).

2.1.9 Autumn Budget (2024)

The 2024 Autumn budget, the first budget of the new government, stated that the transition to EVs is crucial to decarbonising transport and will support growth and productivity across the UK. The government has committed to phasing out new cars

[17] PCPR Regulations Public Charge Point Regulations 2023 guidance - GOV.UK
[18] ZEV Mandate Zero emission vehicle (ZEV) mandate consultation: summary of responses and joint government response - GOV.UK
[19] 2024 Labour Manifesto Kickstart economic growth – The Labour Party

and vans that rely solely on internal combustion engines by 2030 and that from 2035 all new cars and vans sold in the UK will be zero emission. The government is building on this by[20]:

- Investing over £200 million in 2025-26 to accelerate EV charge point rollout, including funding to support local authorities to install on-street charge points across England. This will build on the UK's existing charging network, which continues to grow at pace with over 70,000 public charge points.
- Providing £120 million in 2025-26 to support the purchase of new electric vans via the plug-in vehicle grant and to support the manufacture of wheelchair accessible EVs.
- Maintaining tax incentives to purchase electric cars through Vehicle Excise Duty First Year Rates and the Company Car Tax regimes, as well as by extending 100% First Year Allowances for electric cars and charge points for a further year.

2.2 Regional Policy

The Midlands Region has its own EV infrastructure strategy under the Midlands Connect initiative, of which SoTCC is a member. SoTCC is committed in working with its regional and national partners to support cross-council initiatives such as EV infrastructure improvements along our key travel networks on the M6, A50 and A500.

2.2.1 Midlands Connect: Supercharging the Midlands (2021)

This document outlines plans to significantly expand EV infrastructure in the Midlands. It focuses on developing high-power rapid charging hubs along key transport routes and providing comprehensive charging network coverage across urban, rural, and major road networks. The strategy encourages public-private partnerships to fund infrastructure development and supports local authorities in planning charging stations. [21]

[20] Autumn Budget Autumn Budget 2024 - GOV.UK
[21] Supercharging the Midlands mc-supercharging-the-midlands-document.pdf (midlandsconnect.uk)

2.3 Local Policy

Local policy is a critical component of the EV infrastructure strategy, ensuring that the city aligns with both national goals and regional efforts.

2.3.1 Local Transport Plan (2011)

Although older, this document underpins the city's long-term transportation strategy, with goals to promote low-emission vehicles like EVs. It recognises the need for infrastructure that supports EV adoption, aligns with environmental goals, and contributes to improved public health through reduced air pollution[22].

2.3.2 Declaration of a Climate Change Emergency (2019)

Following the United Nations Intergovernmental Panel on Climate Report on Global Warming (2018) stating there is 12 years to make the necessary changes required to reduce greenhouse gas emissions in order to limit a rise in global temperatures to 1.5°C, Stoke-on-Trent City Council (SoTCC) officially declared a Climate Change Emergency. The declaration committed the council to make the following steps:

- Set up a Stoke-on-Trent Climate Change Liaison Group immediately to respond to this challenge, that meets in public with wide representation including Councillors, residents, young citizens, both Universities and other relevant parties.
- Sets a new target for Stoke on-Trent to be carbon neutral and develops an action plan by the end of 2019, to achieve this.
- The cabinet member with responsibility for climate change should take proactive steps to include young people and the public in the process.
- Resolves to work with other local authorities and public, private and voluntary sector partners on carbon reduction projects to ensure the UK can deliver its climate commitments.
- Requests a report from our pension funds and our investment managers on our levels of investment in the fossil fuel industry.

[22] Stoke Council Local Transport Plan LTP3_Final_V3_web.pdf

- The Council calls on the Government to provide the resources and powers so that Stoke-on-Trent can make its contribution to the UK's Carbon Reduction targets.[23]

2.3.3 City of Stoke-on-Trent Council Transport Strategy (2022)

The council's transport strategy emphasises, alongside the decarbonisation of the city's taxi and bus services, the development of public and on-street charging infrastructure to meet the city's sustainability goals for private vehicle use. The plan calls for the installation of more EV charging points in residential and high-traffic areas and encourages home charging solutions where possible. The council aims to collaborate with private sector partners and secure government funding to achieve its goals. The strategy highlights the importance of placing charging stations strategically, such as near public transport hubs, retail parks, and major roads[24].

2.3.4 City of Stoke-on-Trent Council Energy Strategy (2023)

This document details how the council aims to reduce carbon emissions and energy consumption through electrifying its transport fleet and expanding the city's charging infrastructure. By 2026, the council plans to transition its fleet to EVs and leverage its Silicon Stoke digital initiative to develop a citywide rapid EV charging network by close cooperation with private investment EV charging point operators (CPOs) and by fostering a supportive environment for them to operate in. The strategy emphasises integrating renewable energy into the infrastructure to ensure sustainability and future scalability[25].

2.3.5 Celebration of the Possible (COP) Charter (2025)

Stoke-on-Trent City Council signed a charter committing to building a sustainable and fair future for the city and county as it looks to take further steps to combat climate change. By signing the charter, the city will commit to proactive measures to combat climate change and consider nature and sustainability in its decision-making. The charter is based on so-called "doughnut economics", which suggest that humanity should exist in a space where needs are met but where economic activity does not go beyond the planet's natural limits.[26]

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[23] Climate Change Emergency (Public Pack)Agenda Document for City Council, 04/07/2019 14:30
[24] Stoke Council Transport Strategy Transport_Strategy__Delivery_Plan___Final_Version___Accessibilty_Compliant.pdf
[25] Stoke Council Energy Strategy' Energy_strategy_DPS_V3.0_web (3).pdf
[26] COP Charter Stoke-on-Trent commits to building a greener and fairer future for all | Stoke-on-Trent

2.3.6 Future Developments

The city council will continue to investigate innovative solutions and policies to achieve transport net-zero targets: be that with physical developments, such as battery and charging technologies, or systemic innovations such as EV car clubs. SoTCC will also work with private sector investment partners to ensure that new developments meet the EV infrastructure needs of the new buildings and developments.

3. Developing an EV Charging Network across Stoke-on-Trent and North Staffordshire

3.1 Overview of Current EV Infrastructure

As Stoke-on-Trent seeks to align with national sustainability goals and transition towards EVs, the development and effectiveness of its EVI is critical. The following provides a detailed analysis of the current EV infrastructure in Stoke-on-Trent, evaluating the availability, distribution, and capacity of charging points across the city and along the travel routes within the city linking Stoke-on-Trent to Newcastle-under-Lyme and Staffordshire Moorlands

3.1.1 Number and Types of Charging Points

Stoke-on-Trent has made some progress in establishing a network of EV charging points, catering to different needs. Most of the city's charging infrastructure has been provided via private investment across transport and commercial hubs. Recently, SoTCC (in partnership with SWARCO/PoGo and the Ultra-Low Emission Taxi Infrastructure scheme - ULETIS) have installed 24 'rapid' 50kW chargers across 7 sites with a mix of taxi-only and public use. Charging points are categorised by their maximum charging capability, but this does not guarantee the stated power output of the device as this will change depending on grid demand and capability:

- **3kW up to 8kW:** 'Slow' chargers often categorised as 'overnight', these are a mix of privately-owned home chargers and public commercial charging points; often found in or near residential areas. Some owners of home charging points may make their chargers accessible for public charging.
- **8 to 49kW:** 'Fast' chargers that still use standard alternating current (AC) that is then converted to direct current (DC) within the vehicle to charge the battery. These chargers are more commonly found in commercial areas, such as shopping centres, public car parks, and office complexes, where vehicles are parked for a few hours.
- **50 to 149kW:** 'Rapid' chargers that utilise a current convertor within the charging unit to quickly charge cars with DC electricity. These chargers are

bigger than the AC units due to the convertor required inside. Concentrated in high-traffic areas like major roads, highways, and key commercial hubs, these chargers are designed for quick top-ups during long journeys.

- **150kW and above:** ‘Ultra Rapid’ are the most powerful units available that provide the quickest charging times. These large DC units are concentrated almost exclusively along motorways and major travel routes.

Below (Fig. 2) is a representative example of charging times across a range of popular EVs and current market leaders. Charging times are estimates only and do not consider factors including (but not limited to); battery health, battery management systems, differences in battery chemistry and external temperature. It is important to note that certain models of EV are limited to the maximum amount of charge (kW) they can receive. Charging times of 10-80% are often used by the industry due to the nature of how batteries charge and that charging times slow above 80% due to battery chemistry and battery management systems to protect the cell.

Charger Power	Approximate Charging Time from 10% - 80%			
	Dacia Spring (45 HP) 26.8kWh battery / 140 miles range	Nissan Leaf 40kWh battery / 145 miles range	Kia Nero Electric 64.8kWh battery / 285 miles range	Vauxhall Frontera 44kwh battery / 186 miles range
7kW AC	2 hours 40 minutes	4 hours	6 hours 29 minutes	4 hours 24 minutes
22kW AC	50 minutes	1 hour 16 minutes	2 hours 4 minutes	1 hour 24 minutes
50kW DC	Maximum 30kW charging	34 minutes	55 minutes	37 minutes
100kW DC		Maximum 50kW charging	Maximum 84kW charging	19 minutes
150kW DC				Maximum 100kW charging
350kW DC				
Charger Power	VW ID.3 62kWh battery / 215 miles range	Tesla Model 3 75kWh battery / 352 miles range	Hyundai Ioniq 5 84kWh battery / 354 miles	Lucid Air GT 118 kWh battery / 516 miles range
7kW AC	6 hours 12 minutes	7 hours 30 minutes	8 hours 24 minutes	11 hours 48 minutes
22kW AC	1 hour 58 minutes	2 hours 23 minutes	2 hours 40 minutes	3 hours 45 minutes
50kW DC	52 minutes	1 hour 3 minutes	1 hour 11 minutes	1 hour 39 minutes
100kW DC	26 minutes	32 minutes	35 minutes	50 minutes
150kW DC	Maximum 100kW charging	21 minutes	23 minutes	33 minutes
350kW DC		Maximum 170kW charging	10 minutes	16 minutes

Figure 2 Table showing the approximate charging times of various EVs at different power rated charge points

The choice of charger to use depends greatly on the vehicle use and the charging capability of the driver's vehicle. Charging point infrastructure maps, such as Zapmaps (below), can be refined to only display the charging points required for the individual user to make finding a suitable charging point easier.

3.1.2 Urban Concentration

The majority of EV charging points in the UK are concentrated in urban areas, particularly around areas of commerce, where demand is highest (Fig. 3). This concentration is beneficial for residents and visitors in these areas but presents challenges for those living in suburban parts of the city.

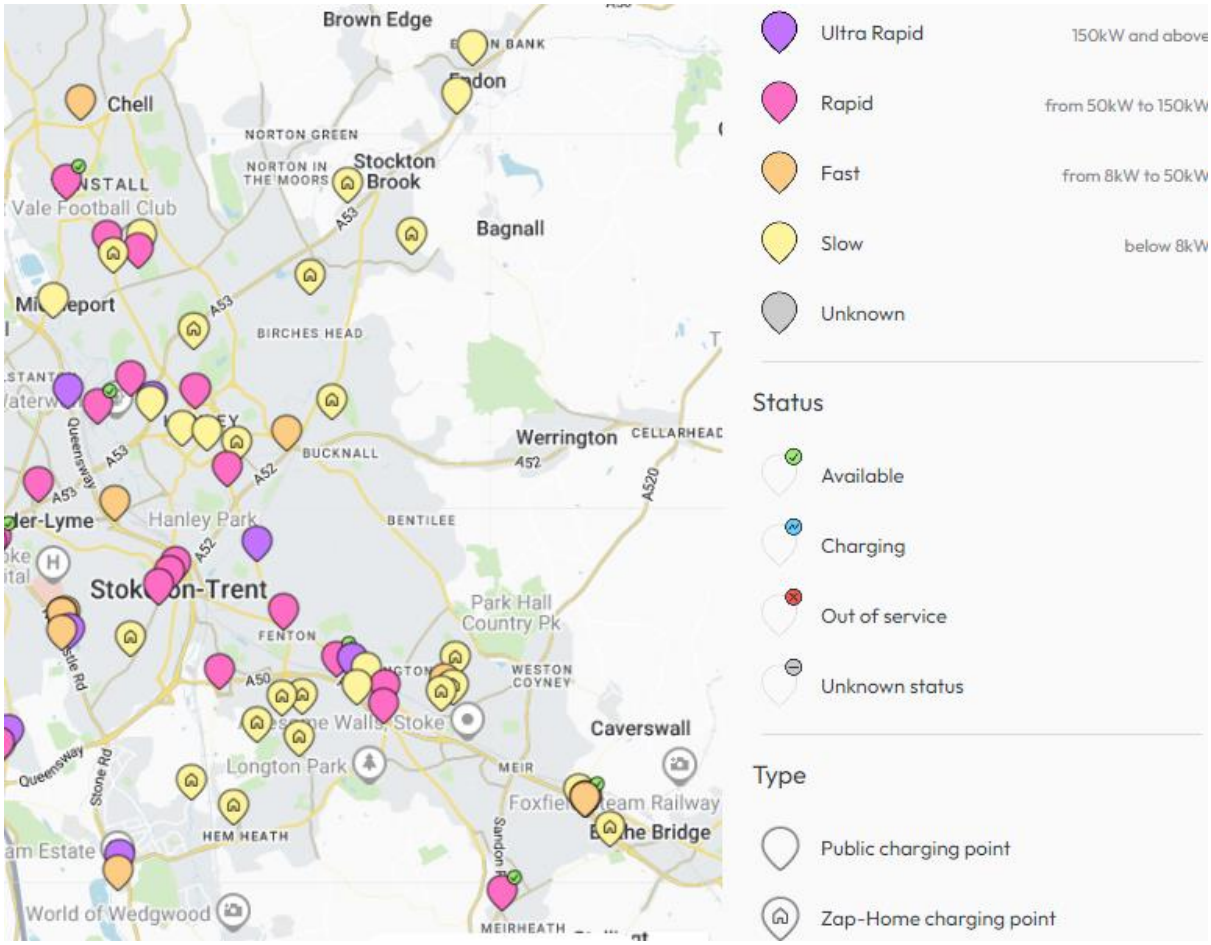

Figure 3 Map of current EVI in and around Stoke-on-Trent. Source: Zapmap (18th September 2024)

Town centres are currently well-serviced with a variety of chargers, particularly fast and rapid ones, making it convenient for city dwellers and those commuting to the centre for work or leisure. However, suburban areas have fewer charging points, with many relying on slower chargers. This could discourage EV adoption among suburban residents who may find charging less convenient.

3.1.3 Charger Availability

The current infrastructure is showing signs of strain, particularly in high-demand urban areas where the availability of rapid and ultra-rapid chargers are limited. As more residents and visitors switch to EVs, the demand for charging points is increasing, leading to potential shortages. Failure to match available EVI with demand may lead to frustrating waiting times, especially during peak use periods.

3.1.4 Reliability and Maintenance

While the network has grown, there have been issues related to the reliability and maintenance of some charging points. Instances of malfunctioning or out-of-service chargers have been reported, frustrating users and discouraging further EV adoption.

3.1.5 Infrastructure Challenges

- Grid Capacity: With the increasing number of EVs, the local electricity grid faces the challenge of supporting more charging points, especially rapid chargers that require significant power.
- Public Awareness: Awareness and understanding of the existing charging infrastructure may be limited among residents. There is a need for better communication regarding the availability and locations of charging points.

3.2 Demand Analysis

As Stoke-on-Trent transitions towards a more sustainable transport system, the demand for EVI is expected to rise significantly. Analysis projects the growth in demand for EV infrastructure up to 2030 (and beyond), considering factors such as increasing EV adoption rates, government policies, levers and technological advancements.

3.2.1 EV Adoption Rates

EV adoption in the UK has been growing rapidly, with annual sales of EVs increasing year on year (Fig. 4).

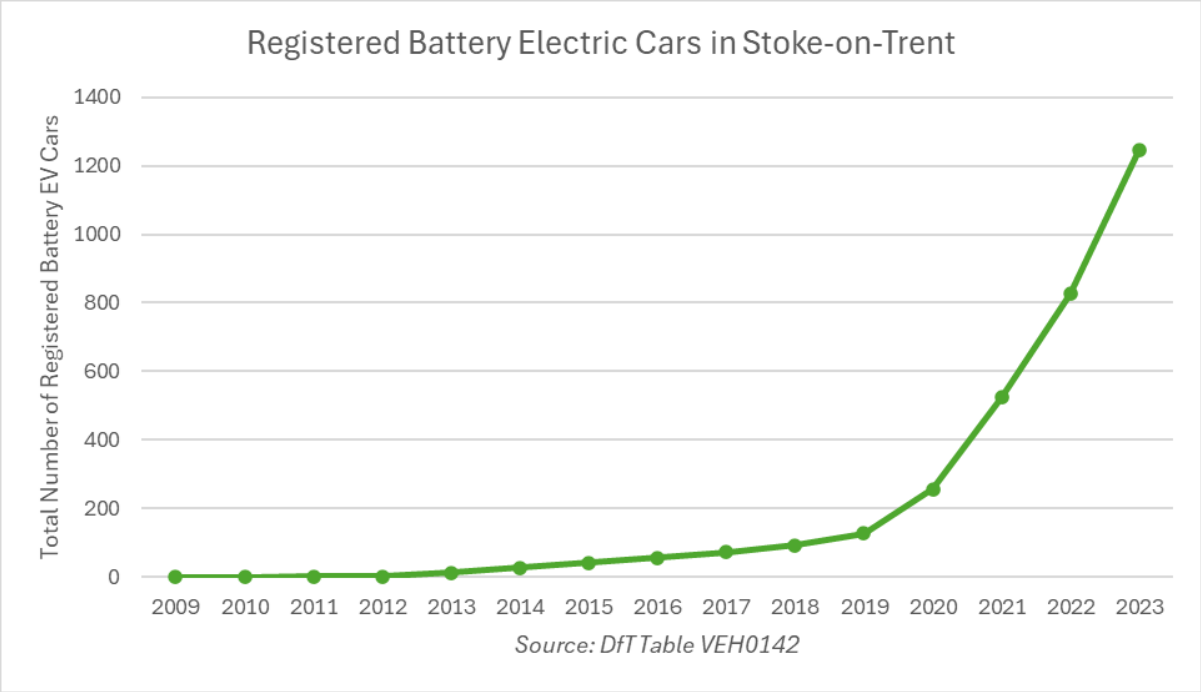

Figure 4 DfT data showing total registered EVs in Stoke-on-Trent from 2009-2023

Stoke-on-Trent is likely to see an increase in EV ownership over the upcoming years as; more consumers become environmentally conscious, the price of fossil fuels remains volatile, the government mandated phase out of new ICE cars continues, and as the cost of EVs decreases due to technological advancements and economies of scale. According to national trends and the latest available data, it is estimated that by 2030, EVs could account for 60-70% of all new vehicle sales in the city and nearly 25% of total vehicles on the road. (Fig. 5).

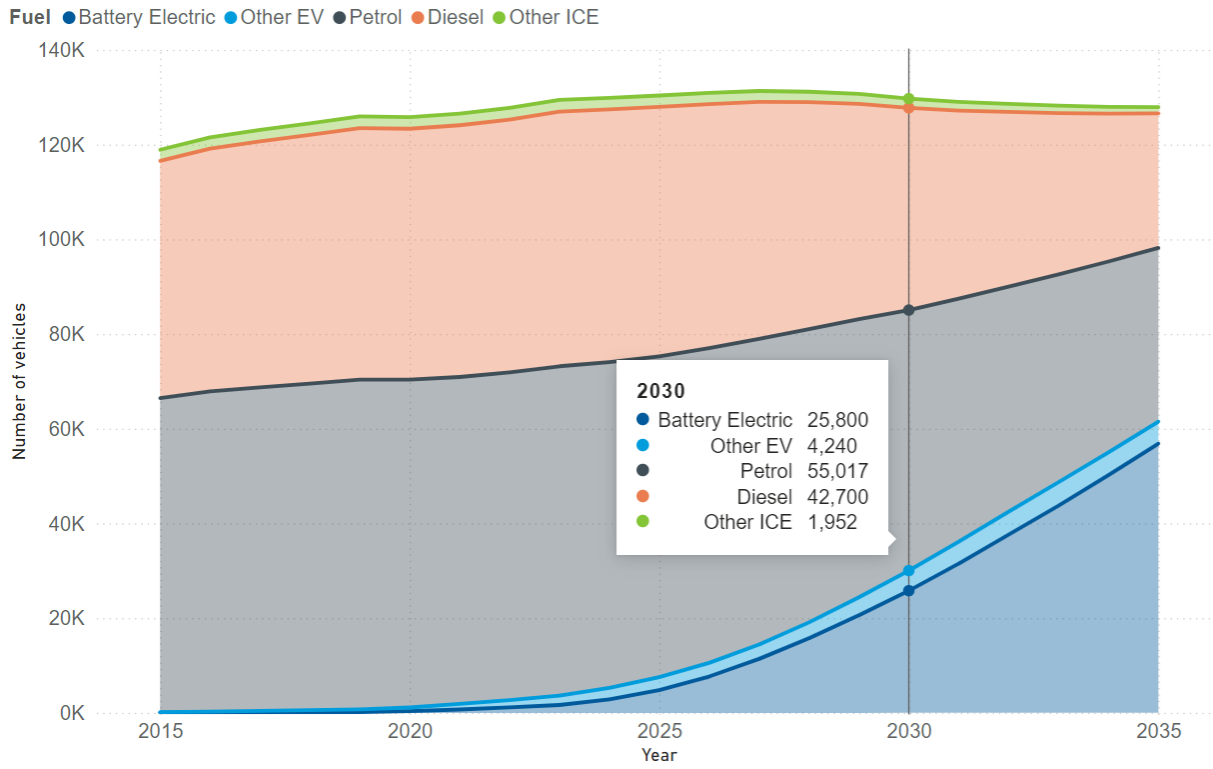

Figure 5 Model showing predicted composition of vehicle parc by fuel type in Stoke-on-Trent. Source: CENEX (2024)

3.2.2 Technological Advancements

Advances in battery technology, leading to longer ranges and shorter charging times, will make EVs more attractive to consumers. Furthermore, improvements in charging technology, such as the development of ultra-rapid chargers, will increase the convenience of owning an EV, further driving demand for a robust charging network.

3.2.3 Current EV Penetration

The penetration of EVs in Stoke-on-Trent remains moderate but is growing steadily. Currently, the city has a few thousand EVs, supported by a growing, but still limited, number of public and private charging points.

3.2.4 Required Number of Charging Points

To support the projected growth in EVs, Stoke-on-Trent will need to significantly expand its charging infrastructure. Based on UK government recommendations in 'Taking Charge', it was recommended to aim to have one public charging point for every 10 EVs. Currently, the UK has approximately one public charging point for

every 18 EVs. Due to the ever-growing number of EVs on the roads, recent advice has recommended the provision of 1kW of publicly accessible charging per EV[27].

Given the projected number of EVs by 2030, Stoke-on-Trent will require 25,800kW of publicly available charging. Currently, there is approximately 7,523kW of available charging over 161 charging points. The Council's LEVI scheme will aim to add approximately 20,000kW of charging for the city (approximately half of the expected shortfall required) by installing primarily 7kW throughout the city by the end of the decade. The remainder will likely be met by continued private investment into the city's charging infrastructure and could be met by relatively few charging points offering 350kW.

However, it is expected that private investment will remain the primary driver in increasing EVI in commercial and transport hubs across the city.

3.2.5 LEVI – Local Electric Vehicle Infrastructure Fund

The LEVI fund is a central government initiative aimed at expanding the availability of EVI across the UK. This funding is designed to support the installation of EV charge points, particularly in areas where it might not be commercially viable without financial assistance. For Stoke-on-Trent, LEVI funding provides an essential opportunity to address the growing demand for EV infrastructure and to support the city's transition to more sustainable modes of transportation. This helps to address the lack of available charging for residents and boost confidence in making the switch to EV.

3.2.6 Importance of LEVI Funding for Stoke-on-Trent

LEVI funding is crucial for Stoke-on-Trent as it enables the expansion of the city's EV charging network in several impactful ways:

[27] Ratio of chargers required per EV ownership The state of play in electric vehicle charging services – A review of infrastructure provision, players, and policies (sciencedirectassets.com)

- **Infrastructure Expansion**: The funding will allow us to significantly increase the number of public charging points, especially in areas where off-street parking is limited and current infrastructure is lacking.
- **Innovative Solutions**: It provides the financial support needed to implement innovative approaches, such as cross-pavement charging, which might otherwise be difficult to finance.
- **Equitable Development**: LEVI funding helps ensure that the benefits of EV infrastructure are spread equitably across the city, including in areas that may not attract private investment.
- **Economic Growth**: By facilitating the adoption of EVs among residents and local businesses, this funding will also contribute to a greener economy and help reduce the city's overall carbon footprint.

3.2.7 Grid Capacity and Upgrades

The increase in demand for EV charging will place additional strain on the local electricity grid. Strategic planning will be required to ensure that grid infrastructure can support the anticipated load, particularly in areas where rapid and ultra-rapid chargers are concentrated.

National Grid have anticipated the upcoming additional demand to their network and have launched the 'Great Grid Upgrade', a major infrastructure project that will both scale up the grid and update the existing networks.

3.2.8 Public and Private Sector Collaboration

Achieving the required expansion of EV infrastructure will necessitate close collaboration between SoTCC, private sector stakeholders, and energy providers. Investment from both public and private sources will be essential to meet the projected demand.

3.2.9 Behaviour and Education

Educating the public about the availability and benefits of EVs and the associated infrastructure will be crucial. As the number of EVs grows, ensuring that residents

and businesses are informed about charging options and locations will help facilitate a smoother transition. With this in mind, through the delivery of SoTCC communications strategy, a dedicated EVI page will be developed on the Council's website to promote the benefits of EV take up and accessing EVI.

3.3 Suitability of Locations

The placement of EVI is crucial for supporting the widespread adoption of EVs, ensuring that the infrastructure is accessible, convenient, and efficient. While commercial factors like high traffic areas and profitability are important, non-commercial factors also play a significant role in determining suitable locations for EV charging points. The strategic placement of EVI for SoTCC is therefore essential for the successful adoption of EVs, particularly when considering these non-commercial factors that ensure equitable access, environmental sustainability, and operational effectiveness. Key considerations include meeting on-street parking needs, equal distribution of infrastructure, district network capacity, environmental impact, and CPO attractiveness.

3.3.1 Meet On-Street Parking Need

A significant portion of the population, 57% in Stoke-on-Trent[28], does not have access to off-street parking, which poses a challenge for at-home EV charging. Finding suitable locations for on-street charging points is crucial to ensure these residents can still transition to EVs. Placing charging stations in residential streets, public car parks, and community areas where on-street parking is common provides these residents with convenient access to charging infrastructure. Wherever practicable, the aim of council driven EVI projects places charging points within a 5-minute walk of properties with no off-street parking (Fig. 6). This approach helps to democratise EV ownership, making it accessible to people who may otherwise be excluded due to a lack of off-street parking options.

[28] Stoke Properties With No Off-Street Parking Off-street parking index | Nationwide Vehicle Contracts

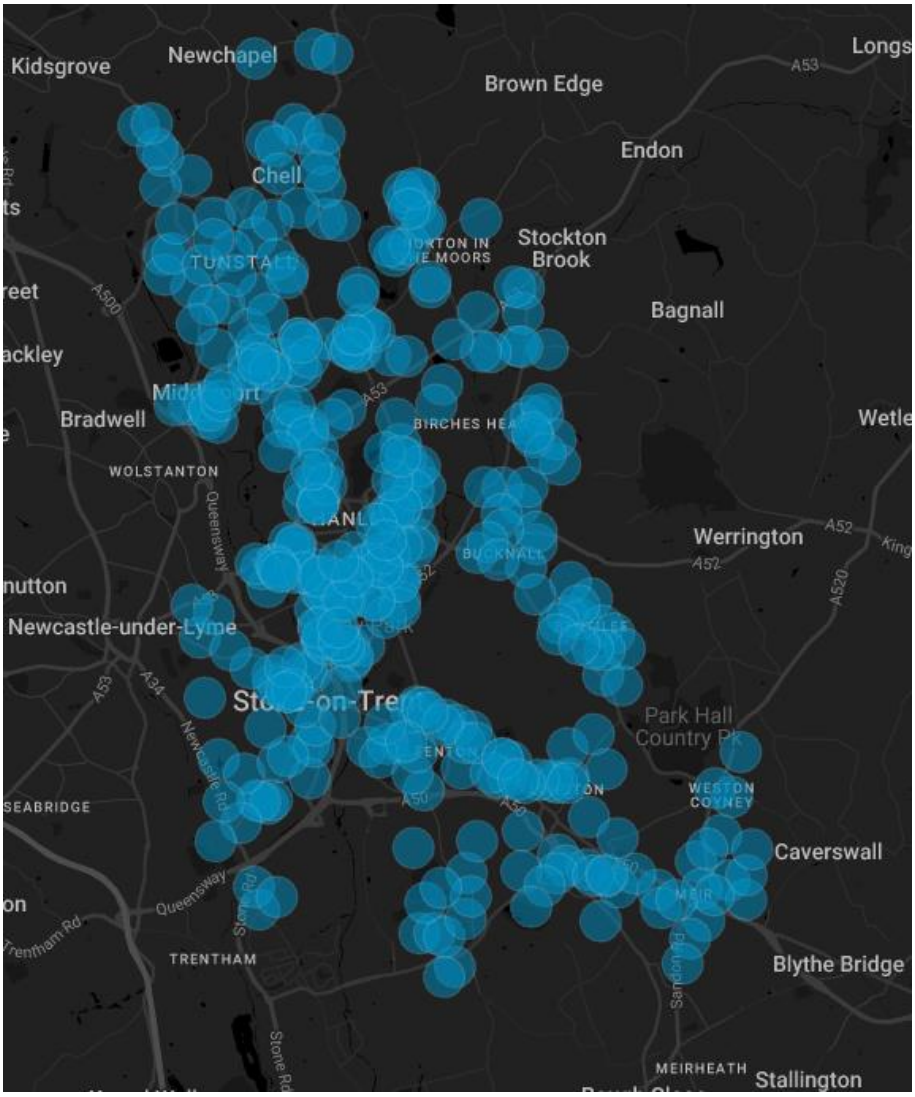

Figure 6 Map showing potential EVCP locations with a 300m radius (approximately 5-minutes walking distance)

3.3.2 Equal Distribution of Electric Vehicle Infrastructure

Ensuring that EVI is evenly distributed across all areas, including underserved or non-commercial regions, is critical for promoting widespread EV adoption. If charging points are concentrated only in commercially viable locations, such as city centres or affluent neighbourhoods, it creates a disparity that can hinder EV adoption in commercially less profitable areas. By prioritizing equitable distribution, all residents, regardless of where they live, have the opportunity to own and use EVs. Whilst the current demand of EV ownership in certain areas may not necessitate the addition of charging infrastructure, the council is planning ahead with the view of projected EV ownership trends to support this expected transition. This approach also supports the broader social equity goals of the council, ensuring that the benefits of cleaner transportation are shared by all communities. Whilst the council place a clear focus

on creating a residentially based EV charging infrastructure, we also aim to be sensitive towards local parking stresses and have avoided EVCP locations that would be directly in front of dwelling and commercial frontages.

3.3.3 District Network Capacity

The capacity of the local electricity grid is a crucial factor in determining suitable locations for EV charging points. It is essential to place chargers in areas where the grid has sufficient capacity to handle the additional load without compromising the reliability of the electricity supply. Overloading the grid can lead to power outages, increased costs, and the need for significant infrastructure upgrades. By carefully assessing district network capacity before installing charging points, the council and CPO can ensure that the grid can support the increased demand, thereby promoting a sustainable and reliable EVI network.

3.3.4 Environmental Impact

Placing EVCPs in areas with poor air quality can have a significant positive environmental impact by encouraging the switch from ICE vehicles to cleaner electric alternatives. By strategically locating chargers in regions that suffer from high levels of pollution, such as congested urban centres or industrial areas, the city can directly address air quality issues. This not only supports public health initiatives but also helps to meet local and national environmental goals, contributing to the reduction of greenhouse gas emissions and improving overall air quality.

3.3.5 Charging Point Operator Attractiveness

The success of EVI depends on its ability to meet current and projected demand effectively. CPOs need to be confident that their investments will be utilised efficiently. Suitable locations should be chosen based on factors such as traffic patterns, the concentration of EV ownership, and projected growth in EV adoption. This ensures that charging stations are placed where they are most needed and will see regular use, making the investment attractive to CPOs. Locations that align with user demand not only improve the user experience but also encourage further investment in EVI, fostering a robust and sustainable network.

3.3.6 PAS 1899 (2022) Compliance

PAS 1899 (2022) is a Publicly Available Specification (PAS) developed by the British Standards Institution (BSI) to ensure that EV charging points are designed, installed, and maintained with accessibility in mind. This specification is intended to make EV charging infrastructure more inclusive, particularly for disabled users and those with limited mobility. Here are the key points regarding accessibility[29]:

3.3.6.1 Location and Accessibility of Charging Points

- EV charging points should be positioned in a way that ensures ease of access for all users, especially those with mobility impairments.
- The specification covers design requirements for walkways, ramps, and nearby parking spaces to ensure users can reach the charging point without obstacles.
- Charging points should be located in well-lit and visible areas for safety and ease of use.

3.3.6.2 Clear Space and Maneuverability

- The standard outlines the dimensions for clear spaces around the charging points to allow wheelchair users or those with other mobility aids to navigate easily.
- Specific guidance is provided on the size and placement of designated EV parking bays, ensuring sufficient space to enter and exit the vehicle.

3.3.6.3 Usability of Charging Equipment

- Height and reach ranges are specified for the placement of charging interfaces, cables, and connectors, ensuring that they are usable for people of different physical abilities.
- Charging stations should have simple-to-use interfaces with clearly visible instructions, tactile feedback, and features like large buttons, appropriate for users with visual or dexterity impairments.

[29] PAS 1899 PAS 1899:2022 | 11 Oct 2022 | BSI Knowledge

- Cable management solutions should be available to avoid tripping hazards and to ensure that cables are easy to handle, especially for people with limited strength.

3.3.6.4 Digital and Payment Accessibility

- The payment systems for charging points should be designed to accommodate users with disabilities, including contactless options, accessible apps, and interfaces compatible with assistive technologies.
- Instructions for use should be easy to read and available in accessible formats, such as large print or audio.

3.3.6.5 Safety and Maintenance

- Charging points should be regularly maintained, with clear indicators if a charging point is out of service or presents a hazard, ensuring that disabled users are not put in unsafe situations.
- Emergency procedures should be clearly communicated and easy to activate for all users.

3.3.6.6 Implementation of PAS1899

The Council expect all of their charging units and digital platforms to be PAS1899 compliant. When working in cooperation with a CPO, the council will expect the CPO to show how their chosen charging unit and digital platform will comply with PAS1899. SoTCC are committed to achieving PAS1899 compliance at all EVI locations, where reasonably practicable. Where PAS1899 complience cannot be achieved, sufficent evidence will be required to justify non complience.

3.4 EV Charging

3.4.1 Charging Device Speed Definitions

As of 1st October 2023, the DfT has defined EVCP chargers along the following catagories[30]. Whilst the government has dropped descriptive terms, the former

[30] Charging Device Speed Definitions Electric vehicle charging device statistics: October 2023 - GOV.UK (www.gov.uk)

descriptive terms are often used in conjuction with the new modified numeric catagories (descriptive terms shown in brackets):

- 3kW up to 8kW (Slow)
- 8kW to 49kW (Fast)
- 50kW to 149kW (Rapid)
- 150kW and above (Ultra Rapid)

This replaces previous catagories, although these defination are still widely in place:

- Slow Charging Devices: 3kW to 6kW
- Fast Charging Devices: 7kW to 22kW
- Rapid Charging Devices: 25kW to 100kW
- Ultra Rapid Charging Devices: 100kW plus

3.4.2 Connector Types

Source: Wallbox

Type 1

Type 1 connectors are common on some older electric cars and have now been phased out since Type 2 became standard in 2014. They have 5 pins and can charge up to 7kW of power using alternating current (AC).

Type 1 is suitable for home chargers or compatible workplace charging points

Source (left to right): evchargeplus.com & electriccarhome.com

Type 2

Type 2 connectors are standard for charging EVs (post-2014). They have 7 pins and suit a range of AC power outputs; specifically 3.7kW, 7kW, and even up to 22kW for faster top-up times using three-phase electricity sources.

This versatility makes them ideal for both home charging stations and public charging points.

Source (left to right): evchargeplus.com & RAC

CCS

CCS is standard across the United Kingdom, the EU, and other countries. This system supports faster charging for EVs.

This connector lets cars charge at higher powers (up to 350kW) using direct current (DC) at public charging stations.

Source: electriccarhome.com

CHAdeMO

CHAdeMO connectors are a type of connection used to charge some older (mainly Japanese and Korean) EVs up to 50kW using DC power.

This connection can still be used at dedicated CHAdeMO public charging stations.

Source: farnell.com

3.4.3 Charging Destination Catagories

Charging device location categories are defined based on both the physical/type of facility they are located in and who can access this but also the type of charging service they are designed to deliver:

On Street: Charging devices located on residential streets only

En-route: Charging devices located for charging to continue a journey. Located in motorway service areas, service stations, electric forecourts and ferry terminals. Additionally 50kW and above charging devices in hotels, restaurants and attractions

Destination: Charging devices located at the end of an EV journey or where a driver may typically stop for an extended period of time. Consists of both 50kW and above and 49kW and below charging devices located in retail car parks, car parks, leisure, education areas and transport (except ferries), in addition 49kW and below charging devices located at hotels and restaurants.

4 Delivery Action Plan

4.1 Introduction

The delivery plan for implementing this strategy is summarised in Figure 7, below, and contains a programme of projects, actions and delivery targets for increasing accessibility to a variety of EVI provisions across Stoke-on-Trent over the next five years, to 2030. The delivery plan will be a live document, updated annually to reflect progress and review delivery plan targets.

Programme	Actions	Outcomes / Targets	Timeframes	Funding	Lead Responsibility
LEVI Pilot	• Roll out EV infrastructure delivery • Manage delivery contract with Wenea, the appointed charging point operator	Estimated delivery of 60 charging sockets for public use, prioritising residential areas with a high reliance for on street parking.	2025 - 2027	Central Government (up to £150k LEVI Pilot funding) / Private Sector Investment	SoTCC / LA Consortium
LEVI Capital Project	• £2.4 million LEVI funding secured • Deliver successful tender process via Consortium of Midlands Local Authorities. • Manage infrastructure delivery contract with appointed charging pointer operator.	Estimated delivery of over 800 charging sockets for public use, prioritising residential areas with a high reliance for on street parking.	2025 - 2030	Central Government (£2.4m LEVI funding) / Private Sector Investment	SoTCC / LA Consortium
Cross-Pavement Charging Solutions	• £260k LEVI funding secured to launch subsidised cross pavement gully charging scheme to enable residents to charge an EV on street from their home.	Estimated delivery of 200 cross pavement charging gullies for residential properties without off street parking.	2025 - 2027	Central Government (£269k LEVI funding)	SoTCC
Ultra-Low Emission Taxis Infrastructure Scheme	• Finalise installation of charging infrastructure • Marketing incentives to support transition of taxis to EV	Installation of charging infrastructure for EV taxi and public use in Council owned car parks.	2025 - 2027	Central Government / Private Sector Investment (up to £200k)	SoTCC / LA Consortium

Programme	Actions	Outcomes / Targets	Timeframes	Funding	Lead Responsibility
EV Charging Policy	• Cross pavement policy • New development EVI policy • Review EV parking policies to improve access to EVI • Review EV parking charges at SoTCC car parks to incentivise transition to EVs	Establish appropriate EV policies to improve access to EVI and support the transition to EV usage	2025 -2027	Central Government / Local Authority	SoTCC
Hackney Carriage/Private Hire (taxi) licensing policy	• Review licensing policy to phase out use of ICE vehicles.	Licensing policy changes to phase out use of ICE vehicles. New licences for Euro 6 compliant ICE vehicles will not be granted after March 2031. Only electric, hybrid and hydrogen powered vehicles will continue to be licensed.	2025-2031	Local Authority	SoTCC
Electrification of Council's transport fleet	• Electrification of SoTCC's transport fleet – phased implementation • Installation of EVI at Council offices and SoTCC owned/managed developments	Phased electrification of SoTCC's transport fleet Install charging facilities in appropriate locations at SoTCC sites	2025 – ongoing	Local Authority / Private Sector Investment	SoTCC

Programme	Actions	Outcomes / Targets	Timeframes	Funding	Lead Responsibility
Public / Private sector partnership and investment	• Seek opportunities for collaborative working with private sector partners to invest in the installation and provision of charging infrastructure for public transport, logistics operations and public use. • Lobby national government to provide financial incentives for purchasing EVs	Support electrification of local bus network, shared use of charging infrastructure for logistics operations, and roll out of publicly accessible charging facilities on privately owned locations. Promote incentives to reduce the cost of purchasing an EV.	2025-ongoing	Local Authority / Private Sector Investment Central Government/ EV Manufactures	SoTCC / Private Sector Consortium Central Government/ EV Manufactures
Public / Stakeholder Engagement	• Implement communications strategy to promote access to EVI and the benefits of EV usage. • Encourage public engagement, to identify where and what type of EVI should be installed to serve local demand.	Deliver ongoing communications to raise awareness and promote EV take-up and EVI usage. Maintain online survey for public to encourage feedback on where new EVI should be installed.	2025 – ongoing	Local Authority	SoTCC
Innovation	Monitor EV technology advances	Participate in pilots / develop policies to reflect advancements in new EV technologies.	Ongoing	Central Government / Private Sector Investment	SoTCC

Figure 7 Table showing key delivery plan of EV Infrastructure Strategy

4.2 LEVI Pilot

SoTCC are part of a consortium of five local authorities (including Leicestershire, Herefordshire, Lincolnshire and Rutland), supported by Midlands Connect, who were awarded £948,000 funding from DfT to deliver over 340 charging points (sockets) across the five authorities.

Following a successful tender process in 2024, the LEVI Pilot Concession Contract between SoTCC and Gamma Energy covers the installation, operation and maintenance of charging points at on street and car park sites across Stoke-on-Trent. 'Wenea' is the customer facing name of the charging app and charging infrastructure.

The contract will deliver in excess of 60 charging sockets across Stoke-on-Trent, installed over a 18 month period during 2025 and 2026. All chargers will have 2 charging sockets and include:

- The majority will be **standard (7kW) chargers**, distributed predominately in residential areas with limited off street parking, providing convenient charging solutions (6-8 hours) for longer stays and overnight.
- **Four fast (up to 47kW) chargers** placed in areas that share both residential and destination charging requirements, providing fast charging (2-3 hours).
- **Four rapid (up to 120kW) chargers**, strategically placed to provide rapid in-transit and destination charging (30 minutes) in high-traffic, town centre and main strategic road corridors.

The selection of potential sites for the installation of EVCPs will be facilitated by EV charging demand data sets which identify areas (postcodes not exact road locations) within the city which are most suitable for the installation of EVCPs, in terms of potential user demand, residential on-street parking reliance and commercial viability. The site selection data analysis is based on the following information:

- Residential areas with high (>50%) reliance of on-street parking.
- Current and forecast EV ownership to ensure supply meets projected demand.
- Propensity to switch to EV ownership/usage based on mosaic data (consumer segmentation modelling of individual's likely behaviour).

- Local public car parks suitability.
- Current grid capacity and proximity to substation.
- Trip attractor destinations with high vehicle turnover.
- Equity considerations, related to on street parking reliance, to ensure EVCP infrastructure is not solely located in the most commercially viable areas.

Using EV charging demand data analysis ensures the site selection process adheres to the principles of the LEVI funding strategy; to utilise public sector funding to leverage sufficient private sector investment to deliver EVCP infrastructure in residential areas of the city which may otherwise struggle to attract commercial investment.

Within the postcode areas recommended for the installation of EVCPs, suitable sections of road, or car park locations, which minimise potential conflict with residential frontages, will be identified,.

LEVI funding enables SoTCC to support the roll out and commercialisation of public EVCP infrastructure, prioritising residential areas with limited off street. By implementing this pilot, SoTCC is taking a proactive approach to ensuring that the City's EV charging network is robust, accessible, and capable of supporting the emerging EV charging demands of residents and businesses, as the city's road traffic transitions to zero emission vehicles.

4.3 LEVI Capital

SoTCC has secured £2,693,000 through the LEVI Capital fund to support the expansion of EVI across the city, providing the opportunity to deliver a comprehensive network of accessible EVI in on street and public car park locations.

A key objective of the LEVI funding is to address disparities in EVI access across the city, particularly in areas where the commercial viability of infrastructure installation is lower. This will help ensure equal access to EV charging for all communities within Stoke-on-Trent.

The £2,693,000 LEVI Capital allocation will be predominantly focused on delivering EVI in residential areas with limited access to private off street parking. The LEVI Capital funding will be allocated as follows:

- **90% (£2,423,700)** will deliver at least 800 new charging sockets at on street and public car park locations across the city, between 2026 and 2030, via a tendered contract with a charging point provider, to install, manage and maintain the charging infrastructure over a 15 year period. For the procurement process, SoTCC are part of the Third Midlands Electric Vehicle Infrastructure Consortium (with Lincolnshire, Herefordshire, and Telford and Wrekin) for procuring a CPO(s) to deliver the contract. The LEVI funding allocated for SoTCC will account for 25% of the project investment, with 75% funding leveraged from private section investment via the successful CPO contract bidder.

  The timeframe for delivering the LEVI Capital contract is:

  - April – June 2025 – Contract out to tender
  - July 2025 – Evaluate tender submissions
  - August 2025 – Award contract to success bidding CPO(s)
  - October 2025 – Contract commences
  - October 2025 onwards - Site selection and local stakeholder consultations
  - Spring 2026 - Autumn 2030 – Phased delivery of 800+ charging sockets at 400+ locations across Stoke-on-Trent

  Following the procurement process, the Council will work closely with the contracted CPO(s), to ensure the EVI is effectively deployed. The strategic placement of these chargers will help maximise their utility and accessibility, ensuring that the city's EV network grows in line with demand.

  The LEVI funding will support a balanced deployment of different types of EV chargers, including:

  - Primarily slow and fast chargers (7 kW or 22 kW) in residential zones and long-stay areas, providing reliable, slower charging for residents and visitors.

- Rapid chargers (50 kW or higher) in high-traffic areas, offering fast and convenient charging options.
- Ultra-rapid chargers (120kW or higher) in high-demand comercial or transport hubs, offering even faster charging for short stops.

It is the vision of SoTCC to ensure that most residents who lack access to private off-street parking will have a public EVCP within five minutes walking distance from their property.

- **10% (£269,300)** of the LEVI Capital funding will subsidise the delivery of cross pavement charging solutions. Further details are provided in section 4.3, below.

4.3 Cross Pavement Charging Solutions

A significant barrier to EV adoption is the lack of accessible charging for residents with limited access to off-street parking. To address this challenge, SoTCC is to use 10% of it's LEVI Capital funding, approximately £269,300, to specifically support the implementation of cross-pavement gully charging solutions. This funding will enable residents who lack off-street parking to install a gully across the pavement outside their property, allowing them to safely and efficiently charge their EVs from their domestic electricity supply without trailing cables across the pavement. Cross pavement gully solutions are illustrated in Figure 8, below.

Figure 8 Examples of cross pavement charging solutions:

Source (clockwise from top left): Kerbo, Gul-e, Pavecross, Charge Gully

The primary objectives of introducing cross-pavement charging in Stoke-on-Trent are:

- **Enhance Accessibility**: Provide an effective, affordable and convenient charging solution for residents without off-street parking, encouraging wider EV adoption.
- **Maintain Footway Safety and Urban Aesthetics**: Implement a charging infrastructure that keeps pavements clear of cables and assoicated footway trip hazards and obstructions, ensuring that the city's streets remain safe and accessible for all residents.
- **Support EV Adoption**: Facilitate the transition to EVs by making home charging more accessible, thereby reducing the reliance on public charging stations and increasing the convenience of EV ownership.

To assess the viability of cross-pavement charging gullies, SoTCC intends to lead a project of multiple EV charging gully solutions.

4.3.1 Site Selection and Planning

Resident Requests: The installation of gully charging systems in Stoke-on-Trent will be driven primarily by resident demand. Residents who are interested in having a gully charging solution installed can apply to the City Council, which will be evaluated based on feasibility, safety, and demand in the area. Once permission is granted, the gully user will take liability for the safe use of the gully.

Subsidised Cost: To encourage wider adoption during the project, and to make the installation of gully charging more affordable, the City Council will wholly subsidise the installation cost (using LEVI funding). Once a request is approved, residents will only be liable for the cost of planning permission for the charger and for the cost of the charger itself. This approach aims to reduce the financial burden on residents while ensuring the sustainable rollout of the infrastructure.

4.3.2 Design and Safety Standards

Cable Management: The gully system will be designed to securely manage charging cables, allowing them to run safely across pavements without posing a tripping hazard or obstructing foot traffic. The gullies will be flush with the pavement surface to minimise visual impact and maintain the aesthetic of the street.

Durability and Weather Resistance: The gullies will be constructed from robust materials designed to withstand varied weather conditions, ensuring longevity and reliable performance over time.

Compliance with Safety Regulations: All installations will comply with local and national safety standards, ensuring that the infrastructure does not compromise the safety of pedestrians or other road users.

Liability: SoTCC will adopt the installation of gully solutions into the public highway, and the gully shall remain the property of SoTCC. However, liability for the proper use of the gully system shall lay with the resident.

4.3.3 Addressing Parking Challenges

No Guarantee of Parking: The installation of a gully charging system does not guarantee exclusive parking outside a property. While the gully provides a safe and efficient way to charge an EV from the resident's home, the City Council cannot reserve or guarantee on-street parking spaces for individual residents. The existing parking policies will remain in effect, and all residents must comply with local parking regulations.

Integration with Parking Policies: The introduction of gully charging will be coordinated with Stoke-on-Trent's broader parking policies to ensure that the installations do not exacerbate existing parking challenges. The City Council will

monitor the impact of gully charging on parking dynamics and make adjustments to policies or infrastructure as necessary to optimise the use of available parking.

4.3.4 Public Engagement and Education

Community Outreach: To ensure the success of the gully charging initiative, the City Council will launch a comprehensive public engagement campaign. This will include a dedicate page on the council's website, informational sessions, demonstrations of how the gully systems work, and opportunities for residents to ask questions and provide input.

Addressing Concerns: The Council will proactively address concerns about the potential impact of gully charging on neighbourhood aesthetics, safety, and parking availability. Clear communication and visual demonstrations will be key to gaining public support.

4.3.6 Cross-Pavement Cable Covers

SoTCC is exploring the use of cross-pavement cable covers to establish policy guidelines for the safe and responsible use of cable covers by residents wishing to charge their EVs across public pavements. It aims to balance the needs of EV owners with the safety and accessibility of public footways, ensuring compliance with local and national regulations.

Cross-pavement cable covers allow a resident to run a cable across the pavement protected by a rubberised cover which reduces the hazard of trips and falls from trailing cables. The intention is to authorise cable-covers as an interim measure or when the use of a gully is not suitable.

Current Rules and Regulations

- **Rule 239 of the Highway Code (2022)** states that: *"When using an electric vehicle charge point, you should park close to the charge point and avoid creating a trip hazard for pedestrians from trailing cables. Display a warning sign if you can. After using the charge point, you should return charging cables and connectors neatly to minimise the danger to pedestrians and avoid creating an obstacle for other road user.".*

SoTCC has used these considerations in applying them to the permitted cable cover product specifications and the conditions of use for persons charging an EV using a home charger across a pavement.

- **Section 178 of the Highways Act (1980)** states that: *"No person shall fix or place any overhead beam, rail, pipe, cable, wire or other similar apparatus over, along or across a highway without the consent of the highway authority for the highway, and the highway authority may attach to their consent such reasonable terms and conditions as they think fit.".*

  It is the view of SoTCC that a cable cover does not constitute as being 'fixed' to the highway and that authority to 'place' a cable will be granted to persons using an EV charging cable with a cable cover in adherence to product specifications and conditions of use.

4.5 Ultra-Low Emission Taxis Infrastructure Scheme (ULETIS)

Stoke-on-Trent City Council, Newcastle-under-Lyme Borough Council and Stafford Borough Council were jointly awarded £787,500 ULETIS funding by the government to install 30 electric EV rapid chargers in council-owned car parks for use by taxis, private hire vehicles and the general public.

The EV chargers are built, owned and operated by SWARCO and operate using a simple contactless bank card payment system.Further details regarding these EV charging facilities can be viewed at:
https://www.stoke.gov.uk/info/20030/taxis/551/electric_vehicle_chargers

As of December 2024, SWARCO have installed EV charging points, providing 24 charging spaces, at 6 car park locations across Stoke on Trent, including:

- 4 charging spaces at Hope Street car park (Hanley)
- 4 charging spaces Kingsway car park (Stoke)
- 4 charging spaces at South Wolfe St car park (Stoke)

- 4 charging spaces at Commerce St (Longton)
- 4 charging spaces at Chancery Lane car park (Longton)
- 2 charging spaces at Butterfield Place (Tunstall).

A 7th charging point location, in Nicholas Street community car park (Burslem) is scheduled to be installed in 2026.

Whilst the charge points can be used as a simple turn-up-and pay as you-go facility, drivers wishing to use the chargers are encouraged to download SWARCO's Evolt Network App to benefit from the information that is provided through their personal account such as location of charge points, usage history etc.

4.6 EV Charging Policy

SoTCC will explore policies which improve access to EVI and support the transition to EV usage. This includes establishing a clear policy on the use of cross pavement EV charging solutions, ensuring parking provision for new developments are equipped with sufficent EV charging infrastructure to meet current and future demand. Parking access for ultilising EVI will be monitored to minimise obstructions. Site specific traffic management orders to protect access for EVs will be considered where necessary. A review of parking charges for EVs at Council car parks will also be undertaken. These policies will create a supportive framework for EV adoption by enhancing accessibility to EVI and incentivising the transition to EV usage.

4.7 Electrification of Council's Transport Fleet

SoTCC operates a transport fleet of over 600 vehicles. Feasbility work is in progress to identify the most efficient process for undertaking a phased electrification of SoTCC's transport fleet, with suitable charging infrastructure provided where necessary.

SoTCC plans to expand its EVI across council-owned assets, including council buildings and council-operated car parks. By utilizing these locations, the council aims to increase accessible and convenient EV charging options for residents, visitors, and its employees, supporting the city's transition to net-zero. This initiative is part of the

council's broader commitment to environmental sustainability and improving air quality across Stoke-on-Trent.

4.8 Hackney Carriage/Private Hire (Taxi) Licensing Policy

During 2024/25 SoTCC undertook a review of the licensing policy for Hackney carriage and private hire (taxi) vehicles, which included proposals to phase out the licensing of ICE vehicles. Following consultation with the Hackney Carriage/Private Hire industry in Stoke-on-Trent during 2024/2025, the following policy changes on vehicle emissions and licensing were approved by SoTCC's Cabinet in July 2025:

- From 01 April 2026 SoTCC will not accept any applications for Euro 5 vehicles. Unless the vehicle is already licensed with SoTCC and wheelchair accessible, in which case renewal applications will be accepted until 31 March 2027.

- From 01 April 2026 all new vehicle applications that are powered solely by ICE must be Euro 6 emissions compliant

- From 01 April 2028 SoTCC will not accept new applications for vehicles which are powered solely by ICE. This will not affect the renewal of ICE vehicles already licensed by the Council.

- From 01 April 2030 SoTCC will not accept applications to renew existing vehicles that are Euro 6 compliant. Unless the vehicle is already licensed with SoTCC and wheelchair accessible, in which case renewal applications will be accepted until 31 March 2031.

- Only hybrid, electric and hydrogen powered vehicles will continue to have licence applications accepted after 31st March 2031.

4.9 Public / Private Sector Partnership and Investment

SoTCC will focus on fostering collaborative partnerships with private sector stakeholders to drive investment in charging infrastructure for public transport, logistics, and public use. Key actions include supporting the electrification of the local bus network, enabling shared use of charging infrastructure for logistics operations, and facilitating the rollout of publicly accessible charging facilities on privately owned

sites. This approach ensures a cohesive and efficient transition to sustainable transport solutions across Stoke-on-Trent.

4.10 Public / Stakeholder Engagement

SoTCC is committed to advancing the adoption of EVs as part of the council's broader strategy to reduce carbon emissions and improve air quality. The council will implement a communications strategy to promote the benefits of EV take up and accessing EVI. A key component of this approach is to ensure the city's EVI meets the needs of residents and businesses across the city. To achieve this, SoTCC will actively promote their online EVI survey to encourage engagement and feedback from residents and businesses to shape future EVI planning and expansion.

Feedback obtained via the communications strategy, correspondences and EVI usage data will inform the expansion of the city's EVI network via:

- **Data Collection**: Gather data on current charging practices, demand for additional infrastructure, and user challenges.
- **Improve EVI Performance and Accessibility:** Use feedback to expand and optimise EV charging infrastructure, ensuring it's reliable and accessible.
- **Online Survey**: Direct feedback via online survey to maxmise participation.
- **Communication Channels**: Use social media, the council's website, and community outreach to direct feedback via online survey.
- **Inclusivity**: Recognise accessibility challenges and plan to reach residents who may have limited internet access.

4.11 Innovation

SoTCC is committed to operating at the forefront of EVI advancements and will actively explore all emerging innovations in EV technology. By continually assessing and integrating new developments, the council aims to ensure that Stoke-on-Trent benefits from the latest, most effective solutions to support widespread EV adoption, enhance accessibility, and improve sustainability city-wide.

SoTCC's aim is not only to address immediate needs, but also to future-proof the city's EV charging network. This involves:

- **Smart Technologies**: Integrating smart charging solutions that can adapt to future demand and enhance the efficiency of the grid.
- **Sustainable Design**: Ensuring that all projects funded through LEVI adhere to high standards of sustainability, reducing environmental impact and delivering long-term benefits.
- **Scalable Infrastructure**: Planning for infrastructure that can grow alongside the increasing adoption of EVs, ensuring that Stoke-on-Trent remains at the forefront of sustainable transportation.

Advances in battery chemistry and technology, such as solid-state can improve the range and charging times of EVs. SoTCC will endeavour to ensure that the charging infrastructure remains fit for purpose for progressing demands.

4.12 Resourcing Delivery of Action Plan Programme

SoTCC will continue to utilise central government LEVI capability funding to provide officer resources to manage the delivery of the programme, including promotional and community engagement activities. A shared revenue stream from the LEVI contracts plus income from management and charging activities from Council owned EVI assets will further surplus the Council's budget for maintaining officer resources to deliver the action plan programme.