

EV CHARGING: POWER YOUR COMMUNITY'S ENVIRONMENTAL TRANSFORMATION



Data and insight to help public sector organisations meet the demand for electric vehicle charging points

CACI

Introduction:

A new EV era is dawning for your residents

By 2030, no-one will be able to buy a brand new petrol or diesel car in the UK. In just eight years, electric vehicles (EVs) will be both the norm and the future of private, public and commercial road transport. Leasing firms and company car schemes have joined individual early adopters to sharply accelerate uptake of EVs. That upward trend is set to continue.

“ By 2025, most major car manufacturers expect over 50% of their models to be electric. In 2030, the UK will ban the sale of new internal combustion engine vehicles. ”

Local authorities already know there's a need for a vehicle charging infrastructure to meet this growing demand. But in a brand new market, there's no blueprint or body of experience to guide your strategy and action.

In every local area, there are key questions to answer:

- Where are charging points most needed?
- How quickly can local residents switch to EV?
- Will public charging availability affect local EV uptake and attainment of local emissions targets?
- What's influencing consumer behaviour in different neighbourhoods and households?
- Where should you site public charging points?
- What type of facilities are needed?
- How should you prioritise and fund EV charging infrastructure?

There may be no direct precedent, but there is a wealth of data and insight that can help public sector organisations shape strategy and action plans with greater confidence. In this report, we describe how you can access and evaluate a range of evidence to help with decision-making for effective EV infrastructure development that's tailored to community needs in your area.



The big picture: the EV marketplace today

The COP26 summit brought environmental concerns to the mainstream news agenda. For consumers as well as those in the public and private sectors, there's a new sense of immediacy about environmental, social and governance (ESG) issues.

In this new world, we understand better than ever our collective and individual responsibility for controlling carbon emissions. While EVs have been around for several years, it's no wonder that their popularity is now soaring. Their time has come.

UK consumers are EV ready

- In 2021, the electric Tesla Model 3 was the second best-selling new car in the UK, overtaking even the (fossil fuel-powered) Ford Fiesta
- Electric and hybrid vehicle market share has grown rapidly to 26% of all new car purchases in 2021
- 50+ EV models are on sale in the UK, with more launching every month
- The fleet market (leasing and company cars) has embraced EVs and there are meaningful tax incentives to encourage participation



Powering EV infrastructure with data

Life has changed for everyone since the Covid pandemic: we're now used to scrutinising data to help us understand and explain things. For central and local government, the use of data to evidence decision-making has never been more important; its value has been proved in every aspect of planned Covid response and now in recovery.

As organisations refocus through and beyond the pandemic, they're keen to apply the power of data to support other vital decision-making. Consumer and environment data are key to targeting and planning local EV infrastructure effectively.

Consumers drive change – it's their attitudes that will determine EV uptake. During and since the pandemic, consumer lifestyles have evolved in different ways. Some have saved money, which means they could now afford an EV. Others are commuting less, so their transport needs have changed.

CACI's recent consumer survey reveals current perceptions, intentions, opportunities and barriers to EV uptake.



42%

of UK consumers think their next car will be an EV

77%

of UK consumers think the main benefit of EV ownership is lower air pollution

64%

of them expect to purchase an EV in the next 2 years

74%

see price as the main disadvantage

Statistics derived from CACI's own EV survey

Consumer segments and local hotspots

Broad trends give context, but they don't tell you when, where, why, who and how EV adoption will evolve in the many different communities and residential areas at a local level.

Detailed data for granular and precise insight

It is essential for public sector organisations to understand in detail what EV adoption looks like for the residents, households and communities they serve. That means looking at different consumer types and behaviours and mapping them to your area, so you can see a picture of where and how fast demand will grow and how best to phase and prioritise the roll-out of electric charging points.

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It's not just about affluence. Age and lifestyle are important too.

It's also not just about private car ownership, employees may need to charge commercial company vehicles (like vans) at home rather than returning them to the depot overnight.

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Segmented consumer data gives you a new level of insight

Using Acorn, CACI's consumer segmentation, our analysis breaks down consumer attitudes to EVs by their demographic and lifestyle characteristics. It shows important variations between different consumer types, which will affect how and where local authorities decide to locate and invest in different types of charging infrastructure.

Older people in the Mature Money group are concerned about range and not having enough public charge points. Younger consumers in the Rising Prosperity group are keen to embrace the environmental benefits of an EV but are unsure when they can afford to buy one.

In the Comfortable Communities group, which includes more rural residents, people say they're less likely to buy an EV soon. They're concerned about the price and lack of second-hand availability. Harder pressed communities are also less likely to plan an EV purchase. They are overall less likely to be vehicle owners - but some may soon use a company EV for work and need to charge it overnight.

These are just a few insights from the data. Depending on the prevalent consumer types in your area, different attitudes and behaviours will be more or less influential.

Insight isn't static – it needs updating all the time

In a new market like this, consumer perceptions and behaviours can change fast.

Our research shows that there's currently a significant information gap. People who don't have an EV have different concerns and perceptions compared to EV owners. For example, non-owners tend to believe that range is a major constraint. EV owners tend to be satisfied with the range of their vehicle in practice.

It's likely that perceived barriers to EV ownership will reduce as more people gain experience and understanding. Information campaigns from central government, focused on the ESG agenda, will influence them. Advertising and PR by vehicle manufacturers will also promote the benefits of EVs. This could speed up propensity to buy or lease an EV in different population segments.

Changing consumer attitudes may speed up the pace of EV uptake and influence consumer priorities for EV infrastructure. That's why it's essential to refresh data regularly with the latest consumer opinions and behaviour.

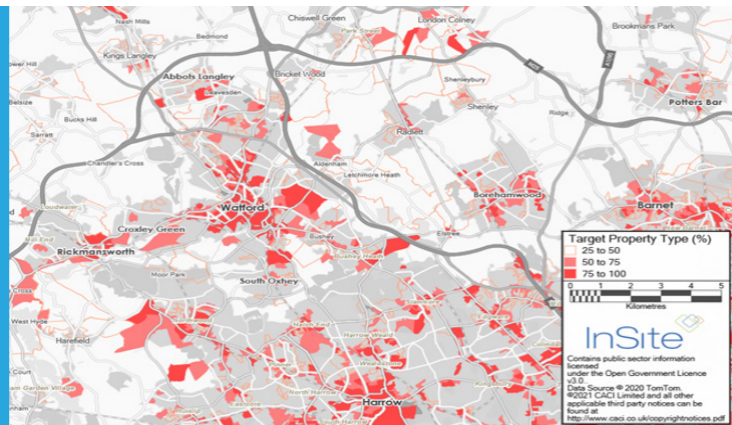


Mapping demand to the unique local environment

Once you understand the behaviours of different consumers and households, you need to apply this to your particular local area. Every region is different; within each local authority there will be a range of demand types – from town to town and street to street.

Rural communities will face different challenges from dense urban areas. For residents in multi-occupation buildings and terraced housing, with shared or on-street parking, it's far more difficult to charge a private vehicle than for homes with their own driveways.

Adopting a blended data approach and presenting the insights visually will help you and your stakeholders to understand specifically where needs for EV charging exist now or in the future, and how they may differ between locations and over time.



Understanding the physical environment for EV charging potential

- How will people charge their EVs if they don't have private off-road parking adjacent to their home?
- How many of the households in your local area have their own driveway? ¹Around 1/3 of UK households don't have off-road parking. What is the level of car ownership amongst your residents in multi-occupation buildings or where on-street parking is used?
- How many public EV chargers do you need – now and in the future? What's the right balance of provision between public charging points provided by the council and those supplied by local supermarkets, service stations, private car park operators and amenity owners?
- How many charging points are there today in the local area and how much are they used?
- Which residential locations are likely to have the greatest demand for public charging points initially and what kind of technology and devices will work most effectively in each?

¹ - <https://www.gov.uk/government/publications/electric-vehicle-charging-market-study-final-report/final-report>



Strategy and planning in practice

Councils are already working with a wide range of data to help them understand demand and develop a strategy for residential EV charging points.

Public sector EV infrastructure strategy priorities

- Deliver value for money and make sure EV infrastructure decisions are fit for now and the future
- Distribute resources and services equitably, even if current EV demand appears to be among wealthier early adopters.
- Influence commercial charger operators to invest throughout the community, not only where they prioritise the greatest profit and ROI.
- Base decisions on evidence rather than reacting to lobbying or individual demands

Providing evidence for balanced decisions

EV infrastructure decisions in the past may not have been evidence-based. It's understandable that the first charging points were installed based on local assumptions, where land was available and where operators were prepared to install them. Other local authority departments may have competing priorities: property and car park teams may be reluctant to introduce EV charging spaces because of the potential impact on their profit KPIs.

Objective data evidence is vital to influence these teams and other decision-makers, partners and stakeholders. The future is not certain, because EV adoption is relatively new. Current and frequently updated insight is key to inform and maintain successful EV charging strategies.

For local authorities, a blend of data will provide the comprehensive insight needed to prioritise and plan. This might include demographic profiles (such as those provided by CACI's Acorn consumer segmentation tool), DVLA vehicle registration data, OS mapping data, the Chargepoint registry, highways and parking restriction datasets.



Oxfordshire County Council uses blended data for EV insight:

Oxfordshire County Council knows the value of blended data to deliver specific and detailed insights that a single dataset cannot reveal. Combining a range of consumer geodemographic data, consumer survey analysis, Council-held information and local mapping provided evidence and context to inform EV strategy and programmes.

EV charging point strategy, planning and prioritising

Project-based analysis for specific EV propositions

Grant applications for EV funding from Innovate UK

Demand response, to assess requests from consumers or charge point operators

“ Using our data model we have looked at the properties unlikely to have a driveway, according to our licensing criteria for dropped kerbs, and assessed car usage in different localities to prioritise where need for public charge points will occur first. We’ve predicted early mass adoption areas using Acorn profiling, determining the highest priority towns for early projects. Going into further granular detail we have used map data plus grid capacity and vehicle crime level data to identify specific potential sites. We’ve also used the data for another project to assess the viability of using cable channels to allow safe on-street home charging across pavements.

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Elizabeth Bohun, Lead Technologist, EV integration, Oxfordshire County Council Innovation Hub



Conclusion:

Routes to a successful public EV chargepoint roll-out

There's no blueprint for local, EV charging infrastructure – every community and area has different needs. There are many options and a lack of experience and guidance.

Although both transient (long distance) and residential charging are needed, the focus for local authorities should develop local residential infrastructure that meets community needs.

- Focus on the local market
- Understand supply and demand - and adapt as things change
- Blend your data with market-leading sources
- Build data partnerships with commercial chargepoint providers (fuel stations, supermarkets)
- Share your experiences with other public and private sector providers

A blended data approach will support five- and ten-year EV strategy developments and inform tactical projects. It can also provide evidence for grant applications.

CACI is a trusted data and segmentation partner to local government and public sector organisations. We're experts in data and delivering insights in ways that teams can use for everyday and strategic decision-making.

Get in touch if you'd like more information or advice on planning and executing a successful EV charging point strategy designed to meet specific local needs.



Stewart Eldridge

Associate Partner - Head of Public Sector and University Data

Email: seldridge@caci.co.uk

Phone number: 020 760 56164



CACI

| Email: Info@caci.co.uk | Web: caci.co.uk | Phone: +44 (0)20 7602 6000