REPORT - July 2025

Charging lottery: a consumer's perspective

T&E

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Executive summary

Overall, the UK has an excess of public charging capacity but consumer experience shows improvements are needed

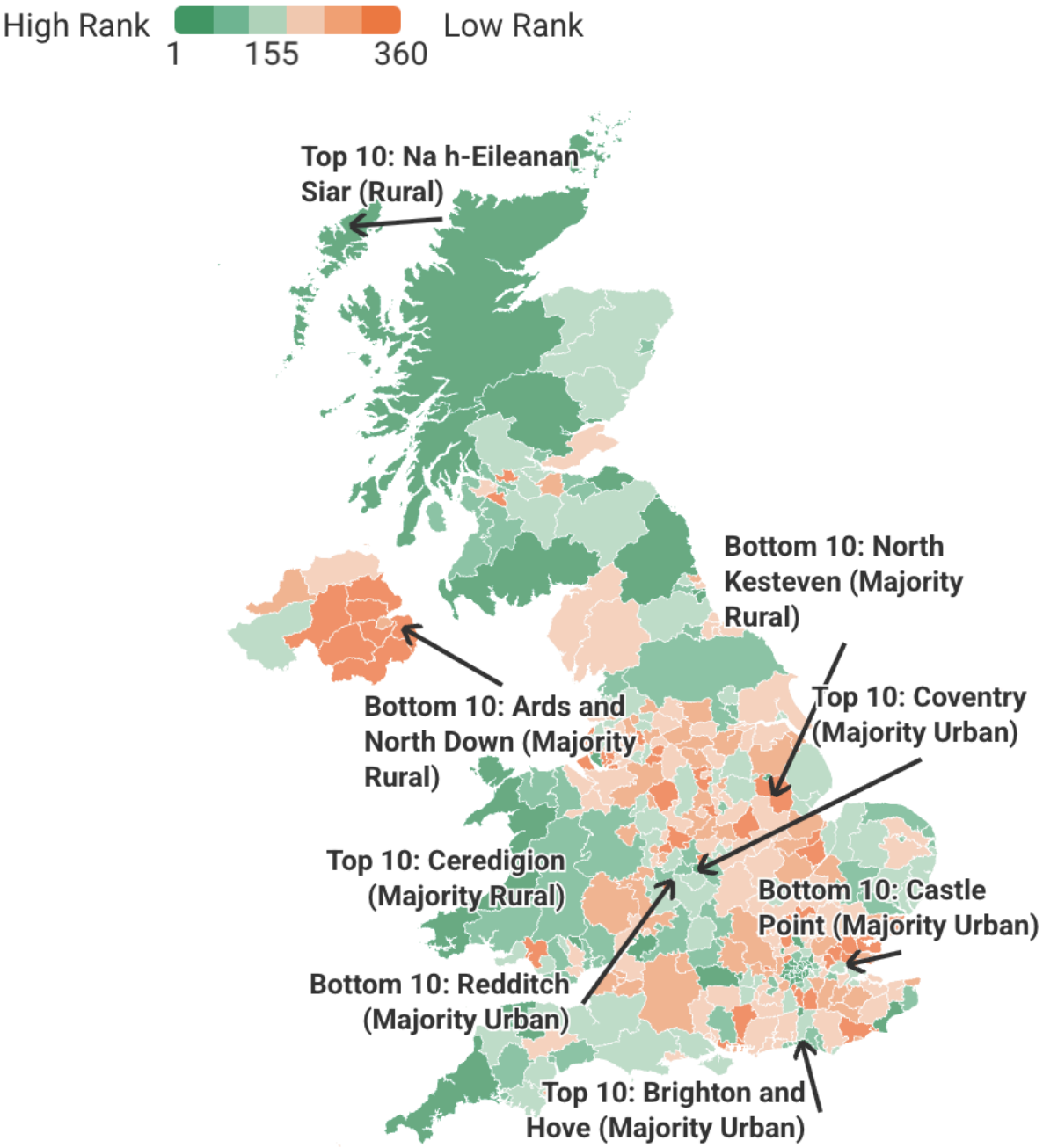
The UK's public charging network has seen remarkable growth, nearly doubling the number of charge points over the past two years to reach 80,998 devices across 39,773 locations, with 115,241 connectors as of May 2025. This expansion puts the sector broadly on track to deliver the fourfold increase needed by 2030 to support mass battery electric vehicle (BEV) adoption.

T&E's analysis of charge point roll out at the local level shows that roll out remains strong in London, with other urban areas, such as Brighton, Coventry, and Cambridge, also making strong progress by matching high local demand with targeted investment. Encouragingly, several rural regions—including parts of Scotland, Wales, and Cornwall—are also delivering well, with modest charger numbers appropriately scaled to local needs.

However, many other areas are falling behind, for example, while Brighton and Hove have moved ahead with 185 charge points per 100,000 people and 20 charge points per 100 locally registered BEVs, Walsall is at the other end of the spectrum with just 25 and 3, respectively. Local authorities not keeping up with local demand are spread across the UK, from urban areas in the South East, such as Harrow, to rural areas in the north, such as Cumberland.

Ranking all LA on their charging rollout shows big differences across the UK but no simple North/South or Urban/Rural divide

Many local authorities are being left behind, creating islands of poor performance



Source: Office for National Statistics (Boundaries), DfT (2025), Electric vehicle public charging infrastructure statistics: April 2025
• We ranked LA on an equal weighting of charge points per person and charge points per BEV in each LA

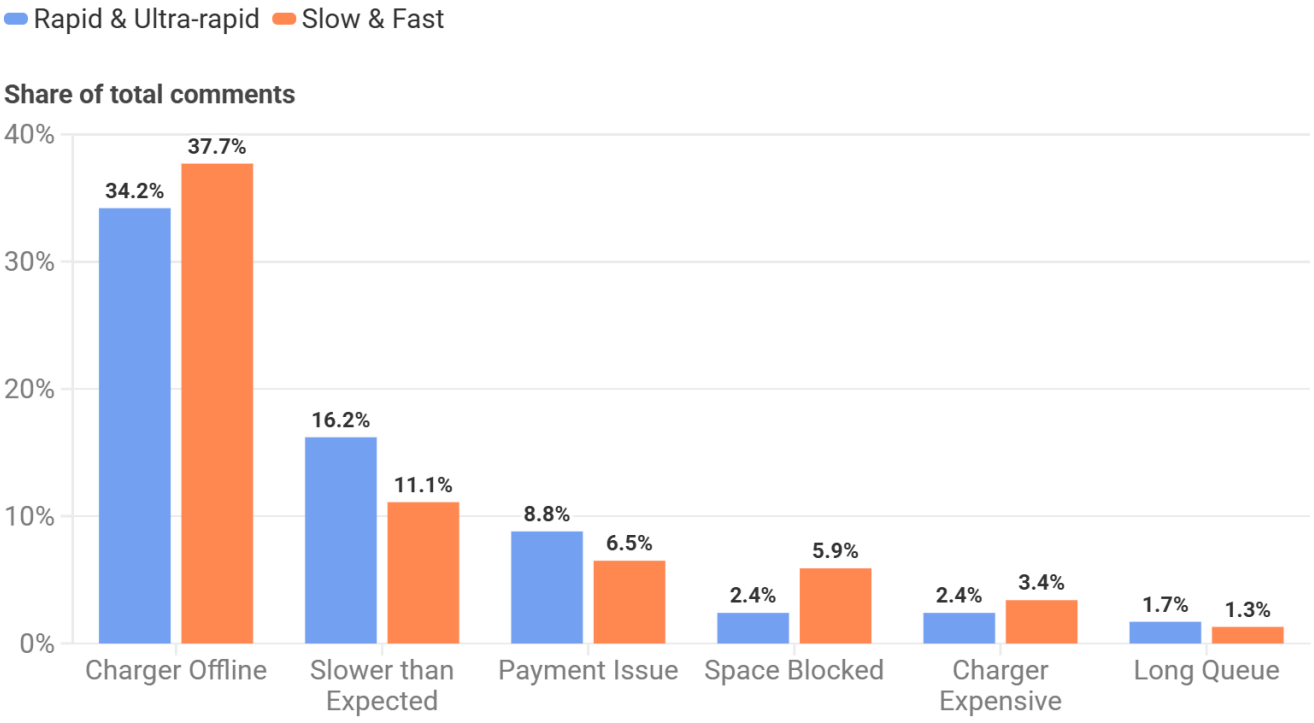
T&E polling data shows that a key perceived barrier for drivers considering a BEV is the lack of a fully national network of ultra-rapid chargers across the UK to ensure longer journeys can be made easily, which is often expressed as concern regarding public charging availability, charging times and range anxiety. T&E's analysis shows that although rapid roll out (rapid and ultra-rapid numbers have increased by 33% in the last year to over 15,000 charge points) over recent years means that major roads in the South East through to the North West are well served, with 90% of motorways with 10km of ultra-rapid charging. Coverage in rural areas, in the South West, Norfolk, North East England, Wales, and Scotland, is patchy, with only 65% coverage for A roads.

Given current utilisation rates of just 16% by time and 4% by energy, it remains commercially challenging for charge point operators to invest to fill gaps in the A-road network. The cancellation of the Rapid Charging Fund (RCF) aimed at tackling this part of the charger market has left a critical gap and other sources of support for charger roll out in these areas need to be considered to ensure full coverage across the UK.

Success relies on a greater focus on the consumer experience of charging

Despite strong infrastructure growth, public satisfaction with charging remains modest at just 64%, with surveys showing cost and charging experience continuing to rank among the top barriers to BEV uptake. T&E's AI analysis of user reviews of charging experience in this study reveals that failed charging attempts are the most frequently cited issue.

Consumers unable to charge due to a broken charger or poor instructions remain the most commented on issue



Source: T&E analysis of customer comments left at charge points. Comments left at charge points in Q1 2025

The Public Charge Point Regulation 2023 requires 99% reliability of rapid/ultra-rapid chargers and their payment systems. T&E's analysis shows that the number of comments, per BEV on the road, relating to broken and failed charging attempts have slowly decreased since the regulation's introduction, with failed charging comments per BEV now at 36% of the level seen in 2020. This is positive and shows that the regulation is working.

However, the total number of comments relating to failed charging attempts has remained roughly constant since 2020, suggesting that this remains an issue at a small number of sites.

The analysis shows that the time it takes to repair broken chargers remains an issue, with only 20% of a sample of 500 broken charge points repaired within 24h and 40% within one week. Repair times differ significantly across the UK with the South of England achieving 50% of chargers being fixed within 1 month. This drops to 40% for the North of England and 30% for the Midlands. Given that consumer rankings of CPO's are strongly tied to reliability, further improving

reliability and faster repair of chargers is needed to boost consumer satisfaction and confidence in the UK's charging network.

Recommendations to end the charging quality lottery and ensure good access to reliable charging across the UK:

- **Use the remainder of the £400 million dedicated to charging in the 2025 Spending Review to target those areas currently left behind in public charging provision.** This should include local residential charging for communities without driveways, not already supported by LEVI or the £25 million cross pavement scheme, and in-transit charging on sections of the Major Road Network, particularly for those locations where the current business case for a charger is challenging
- **Include renewable electricity used to charge electric cars in the Renewable Transport Fuel Obligation (RTFO)** to support the roll out of ultra-rapid charging in less profitable and underserved areas, at no cost to the treasury, to fill the gap left by the cancelled rapid charging fund
- **Reverse the fuel duty freeze and commit to raising fuel duty by an additional 5-10p next year** in order to ensure that fuelling a car using green electricity is cheaper than using fossil fuel
- **Amend the Public Charge Point Regulation to require CPOs to:**
    - Repair all broken charge points within 1 week and 20% within 24 hours
    - Publicly report via a simple, accessible metric the number of broken charge points and payment systems in each local authority to allow the government to see problem areas as the current national data is insufficiently granular and accessible to identify issues at the local level effectively
    - Track and publicly report on a range of consumer-related metrics, including consumer satisfaction, the number of consumers who attempt but fail to pay, and the number of consumers who attempt but fail to charge

- **Bring down public charging costs by lowering VAT from 20% to 5% on public chargers** in line with private charging, with a requirement for charge point operators to pass these savings through to consumers in full
- **Remove policy costs from electricity prices to reduce charging costs for everyone in line with the Climate Change Committee's recommendations**

Section 1

1. State of the Market

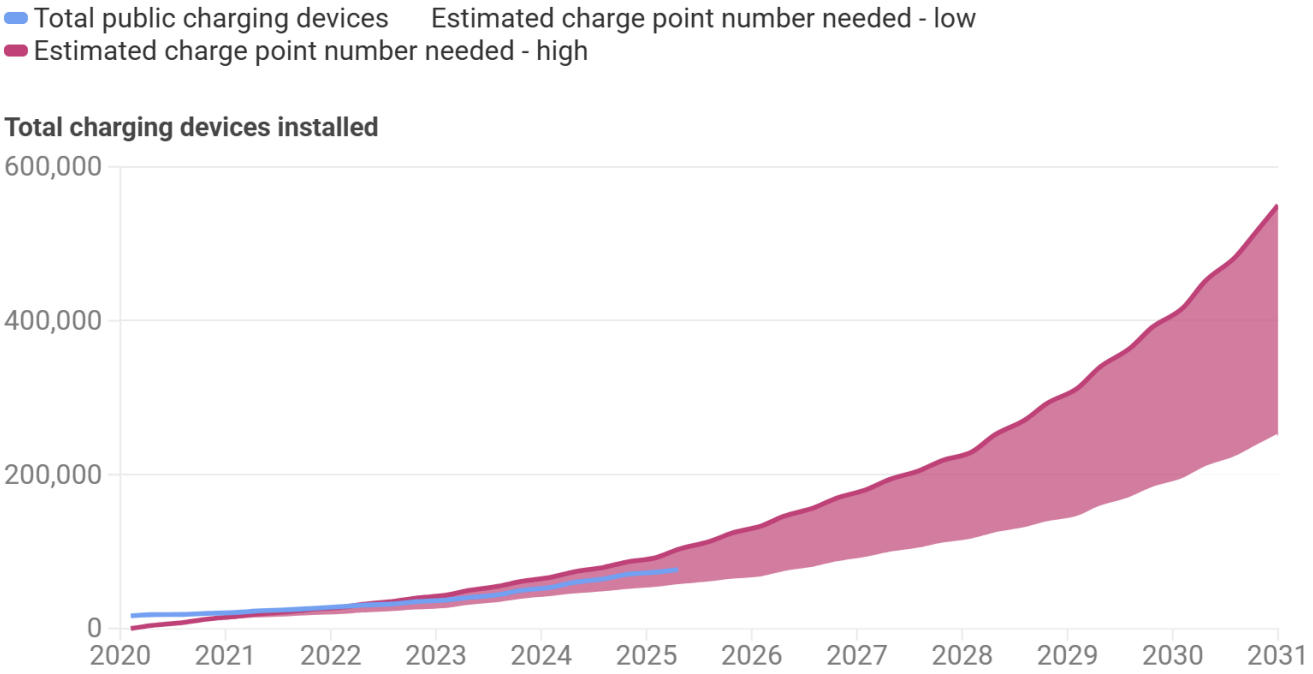
This Section sets out the current state of the UK charging market, covering aspects such as the number of charge points and charge point distribution. This section concludes that, in terms of raw numbers, the charging market is doing well and is on track. However, this contrasts with consumer polls, reported by ERM, showing that charging is still a major barrier to BEV adoption. Therefore, Section 2 of the report takes a deeper dive into consumer feedback on charging and what this means policymakers and the charging industry must deliver, on top of charge point rollout, to support charging confidence for all consumers.

1.1 Nationally, the UK has enough charge points

The UK Department for Transport (DfT) has produced projections for the number of charge points needed in the UK based on BEV sales as driven by the ZEV mandate. ZapMap data, shown as the blue line in the figure below, shows that actual charge point deployment is in the middle of DfTs projections (pink band), suggesting that at the highest level, the UK is on track. This reflects remarkable growth from the charging sector, which has nearly doubled the number of charge points in the last two years to reach 80,998 charging points across 39,773 charging locations with 115,241 connectors by May 2025. This puts the industry on track for the fourfold increase needed between today and 2030.

Public charge point number in the UK April 2025 against DfT projections

As of April 2025 actual charge point rollout matches expected need



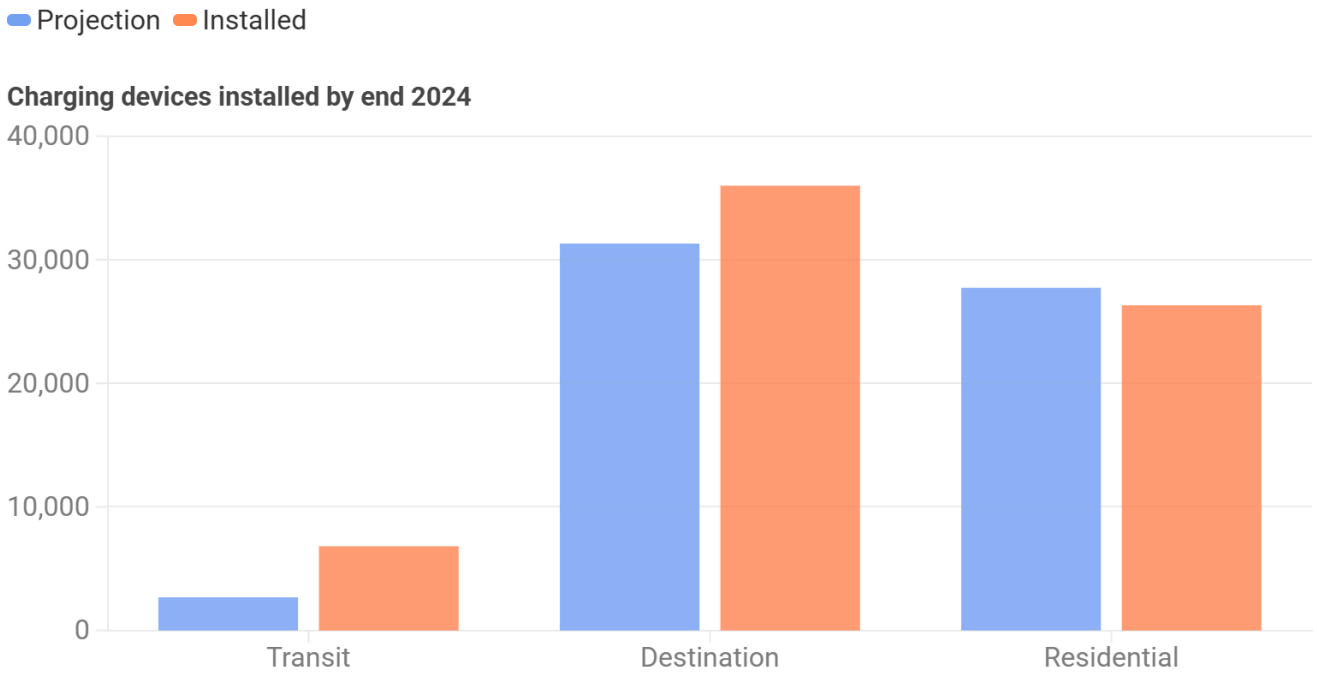
Source: DfT (2025), Electric vehicle public charging infrastructure statistics: April 2025. NAO (2024), Public chargepoints for electric vehicles

1.2 The UK has a good mix of charging destinations with a focus on faster in-transit chargers

DfT has developed several scenarios for the expected rollout of charge points in the UK. These scenarios reflect two key uncertainties. Firstly, the demand for public charging is modelled as low, mid or high to reflect different splits between home/public charging and the possible range of mileages of public charge point users. Secondly, three scenarios reflect differences in the split of charging between residential on-street, destination and in-transit chargers, with the scenarios designed to reflect existing behaviour, a greater focus on on-street charging, and an increased demand for destination/en-route sites. Combined, this gives nine scenarios with differences in the total charging energy and number of charge points installed across the scenarios.

UK is performing very well at installing charge points across different locations

UK is very close to meeting DfTs "Existing Behaviour Mid" scenario



Source: DfT (2025), Electric vehicle public charging infrastructure statistics: April 2025. HM Government (2022), Taking charge: the electric vehicle infrastructure strategy

In 2024, the UK more than doubled all DfT scenarios for the rollout of in-transit chargers designed to support long-distance travel. Progress on destination chargers was also very strong, with real rollout exceeding projected demand from 6 out of the 9 DfT scenarios. The weakest rollout was in residential on-street charging, where charging rollout only exceeded 2 of the 9 scenarios, and these two are the lowest, where more drivers can use private charging and charging preference is assumed to be skewed towards destination or in-transit chargers.

With a higher than expected ratio of rapid/ultra-rapid chargers at many in-transit and destination sites, in theory, the UK needs fewer chargers than the UK total projections above imply. DfT projections assume the UK needs chargers in the ratio of 1:12:10 for in-transit, destination, and residential chargers respectively, CPOs have actually delivered them in the ratio 1:5:4. This means in terms of charging capacity, the UK is well ahead of what DfT assumes is needed at this stage of the transition. This is good news as it should minimize queuing and delays for drivers. However, it may also be true that this charging mix is well suited to early adopters who predominantly have driveways but will need to change over time to support mass adopters, lower-income households, and second-hand buyers who may be more reliant on public residential on-street charging.

1.3 There are gaps in the UK charging network but these do not follow a simple North-South or Urban-Rural divide

There are many ways to assess charging sufficiency and equitable distribution, ranging from a simple comparison of charge point numbers between locations to a comparison with a modelled expectation of local requirements. This analysis examined charge points per 100,000 people and charge points per BEV, as these provide an indication of the number of charge points required when the entire car fleet has transitioned to BEVs and the number needed today.

To understand if charge point distribution reflects underlying demographic or geographic differences the two charge point metrics were compared against a wide range of factors such as population age, wages, house prices, employment, education, health, deprivation index, home ownership, urban/rural, etc. we found no statistical correlation between total, slow/fast, or rapid/ultra-rapid charge point delivery and any of these metrics.

A similar picture emerges in the figure below showing a ranking of all 361 local authorities (LA) using an equal weighting of charge points per 100,000 people and charge points per BEV. Again, the map shows no clear North/South, Urban/Rural, or wealth divide in charging provision. The map shows different regions doing well/poorly for different reasons. As expected, London is doing well, but so are other cities with high demands for charging, such as Coventry and Cambridge, which are meeting local needs through high local investment. This marks a positive shift with areas outside London now accelerating their rollout of on-street charging - 6 out of the top 10 local authorities for absolute annual growth in charge point number are now outside London, according to the latest DfT charge point data. Other areas, such as rural Scotland, Wales, and Cornwall, are doing well as they have managed to invest in chargers in small communities where a small number of chargers matches the levels of local demand.

However, many other areas are falling behind, for example, while Brighton and Hove have moved ahead with 185 charge points per 100,000 people and 20 charge points per 100 BEV, Walsall is at the other end of the spectrum with 25 and 3, respectively. Local authorities not keeping up with local demand are spread across the UK, from urban areas in the South East, such as Harrow, to rural areas in the north, such as Cumberland. The diversity of LA who are leading and lagging on charging is clear when looking at the top and bottom performing local authorities, ranked below, with a wide diversity of locations and urban/rural split.

Based on this ranking, the top performing LA outside Inner-London in England, Wales, Scotland and Northern Ireland are (place, region, urban/rural):

- Coventry - West Midlands - Urban: Majority nearer to a major town or city
- Watford - South East - Urban: Majority nearer to a major town or city
- Na h-Eileanan Siar - Outer Hebrides - Remote Rural
- Gwynedd - Wales - Majority rural: Majority further from a major town or city
- Ceredigion - Wales - Majority rural: Majority further from a major town or city
- Pembrokeshire - Wales - Majority rural: Majority further from a major town or city

- Cambridge - East of England - Urban: Majority nearer to a major town or city
- Brighton and Hove - South East - Urban: Majority nearer to a major town or city

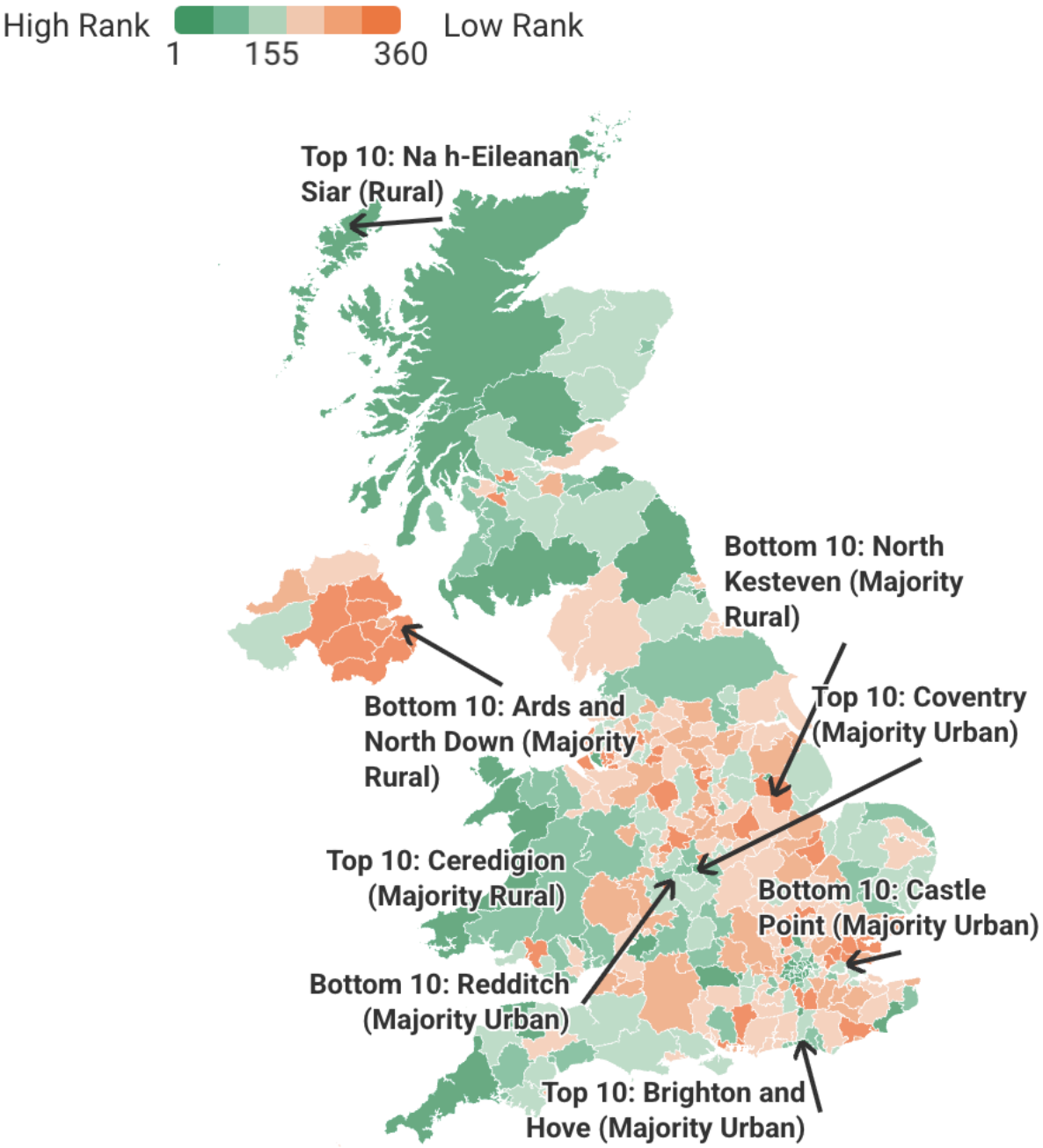
Based on this ranking, the bottom performing LA are (place, region, urban/rural):

- Castle Point - South East - Urban: Majority nearer to a major town or city
- Fenland - East of England - Intermediate urban: Majority further from a major town or city
- North East Derbyshire - East Midlands - Intermediate rural: Majority nearer to a major town or city
- Melton - East Midlands - Intermediate rural: Majority further from a major town or city
- Redditch - West Midlands - Urban: Majority nearer to a major town or city
- North Kesteven - East Midlands - Majority rural: Majority nearer to a major town or city
- Harrow - South East - Urban: Majority nearer to a major town or city
- Walsall - West Midlands - Urban: Majority nearer to a major town or city

Instead of the market being shaped by basic metrics such as rurality, it appears that the historical context, such as did the local authority have dedicated staff to apply for government funding and drive progress in local charging delivery, may have had an effect on which local authorities have made progress. However, there is insufficient data available in the public domain to be able to assess this effectively.

Ranking all LA on their charging rollout shows big differences across the UK but no simple North/South or Urban/Rural divide

Many local authorities are being left behind, creating islands of poor performance

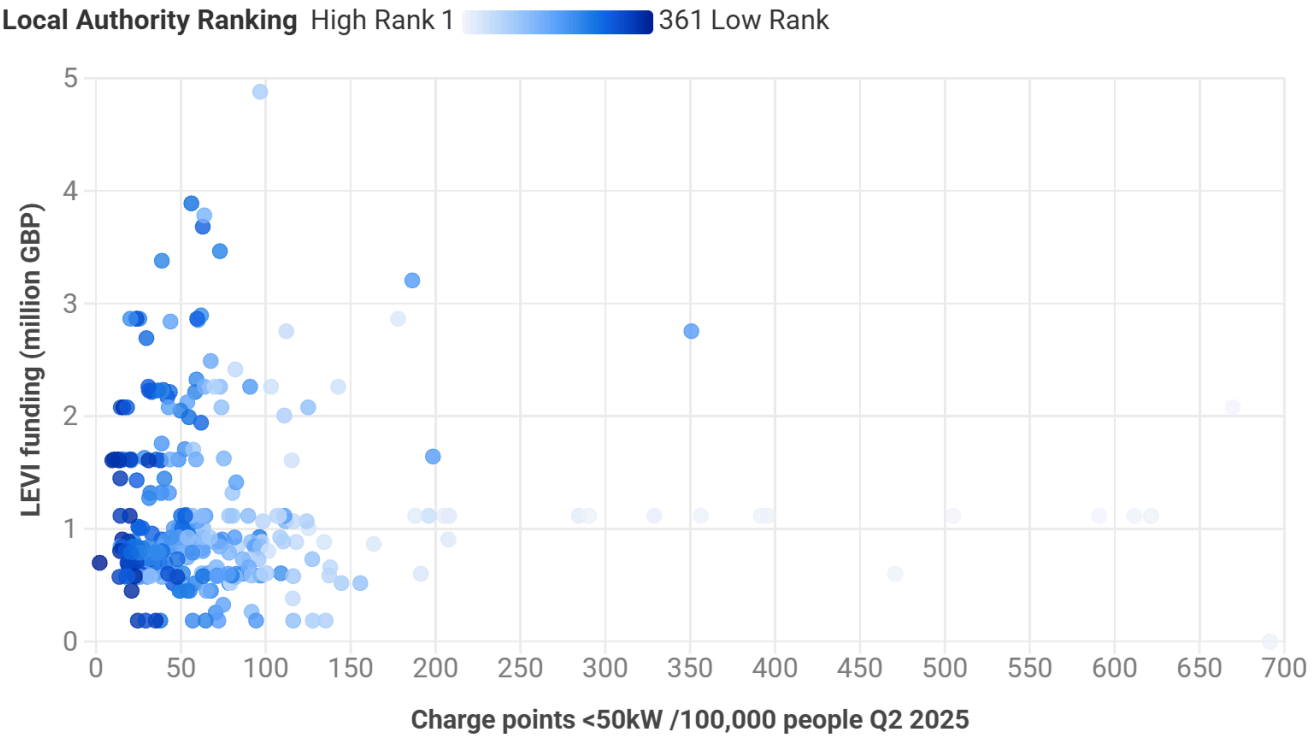


Source: Office for National Statistics (Boundaries), DfT (2025), Electric vehicle public charging infrastructure statistics: April 2025
• We ranked LA on an equal weighting of charge points per person and charge points per BEV in each LA

Reflecting these local differences in engagement and progress on charging and to ensure access to residential on-street charging for everyone, the government introduced the LEVI funding scheme. This scheme aims to drive the deployment of local, primarily low-power, on-street charging infrastructure by supporting local authorities with funding for chargers and local authority skills and capability. The LEVI fund distributed money based on the number of vehicles without off-street parking, the inverse of the number of chargers per 100,000 people, the index of deprivation and the level of rurality.

These metrics suggest the LEVI fund will be very focused, offering support to disadvantaged communities and acting as a key leveling-up driver in electric car access. However, funding data shows that LEVI funding has been distributed broadly, with all local authorities gaining some funding and most getting close to £1 million, as can be seen from the cluster of dots in the bottom left of the figure below. This should mean near-home charging improves everywhere, but misses an opportunity to level up in the way a more focused scheme could have delivered the biggest improvements for the furthest behind local authorities. However, LEVI funding is still being issued and spent, so the full impact of the scheme and its benefits have yet to be seen.

LEVI funding has not been used to level up charging in local authorities who have fallen behind



Source: OZEV (2025), Local Electric Vehicle Infrastructure (LEVI) capital: funding amounts and project status. DfT (2025), Electric vehicle public charging infrastructure statistics: April 2025

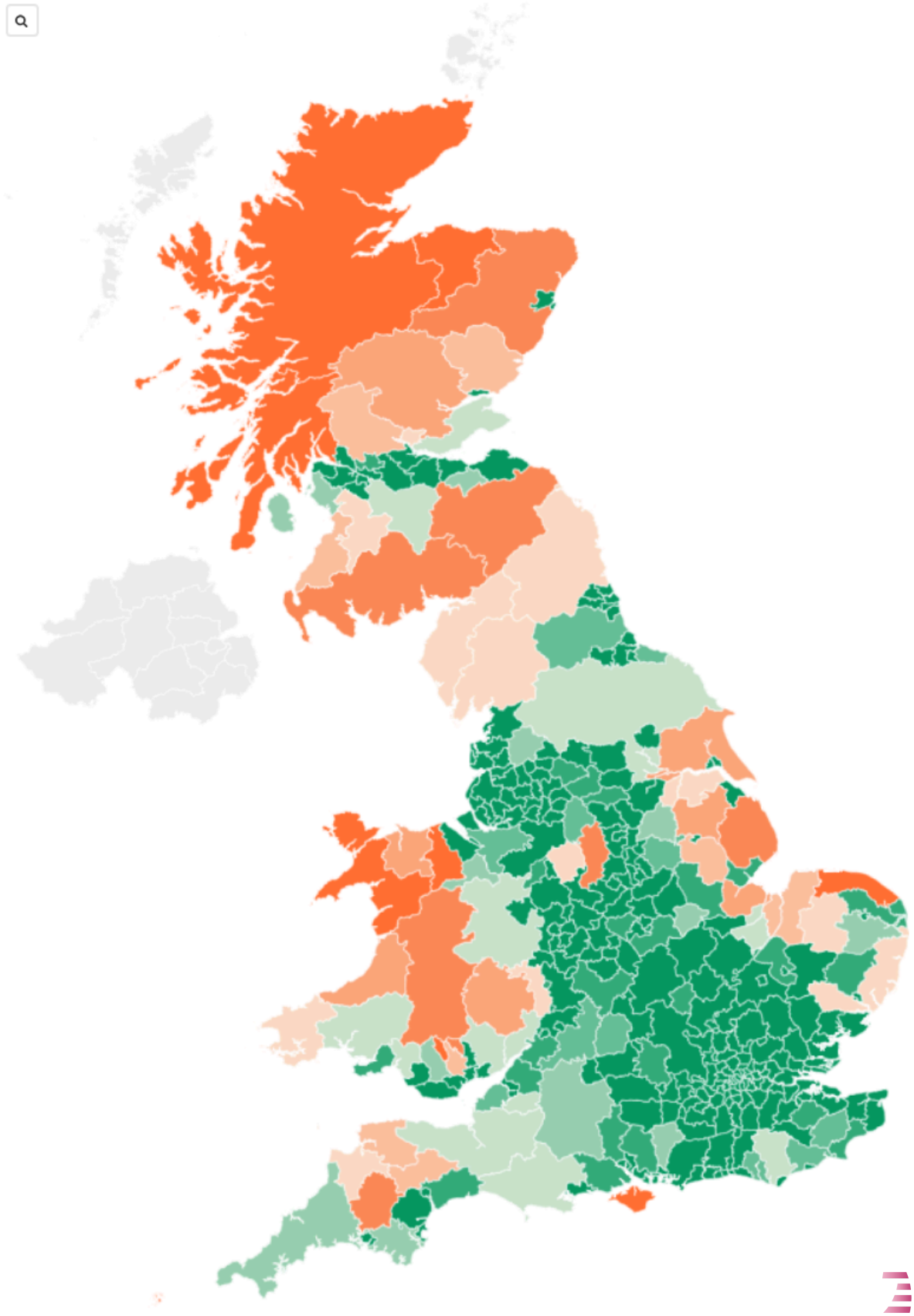
1.4 Rapid and ultra-rapid charge point rollout on the motorway network is very good but coverage of some smaller but still strategic roads is lagging behind

One of the key milestones drivers are looking for before buying a BEV is a national network of ultra-rapid chargers across the UK, allowing drivers to go anywhere with ease. In total, there are 15,500 rapid and ultra-rapid chargers. As shown in the figure below, coverage of the major roads is very good in the more populated areas (90% of motorways are within 10km of an ultra-rapid charger), covering a band from the South East to North West, but drops off in more rural areas (only 65% of A-roads are within 10km of an ultra-rapid charger), e.g. South West, Wales, Norfolk, North East and Scotland. Given that ZapMap data shows that the utilisation of ultra-rapid chargers today is only 16% by time and 4% by energy, it is likely commercially challenging for CPOs to fill the rural gaps until utilisation improves. Filling these gaps could have been an outcome of the now cancelled Rapid Charging Fund (RCF), showing there is still value in funding for this area, even if it is scaled back to just focus on strategic gaps in the network.

Ultra-rapid charger coverage is excellent in much of the UK but drops off in less populated areas

Proportion of the Major Road Network within 10 km of an ultra-rapid charger by Local Authority in June 2025

0% 100%



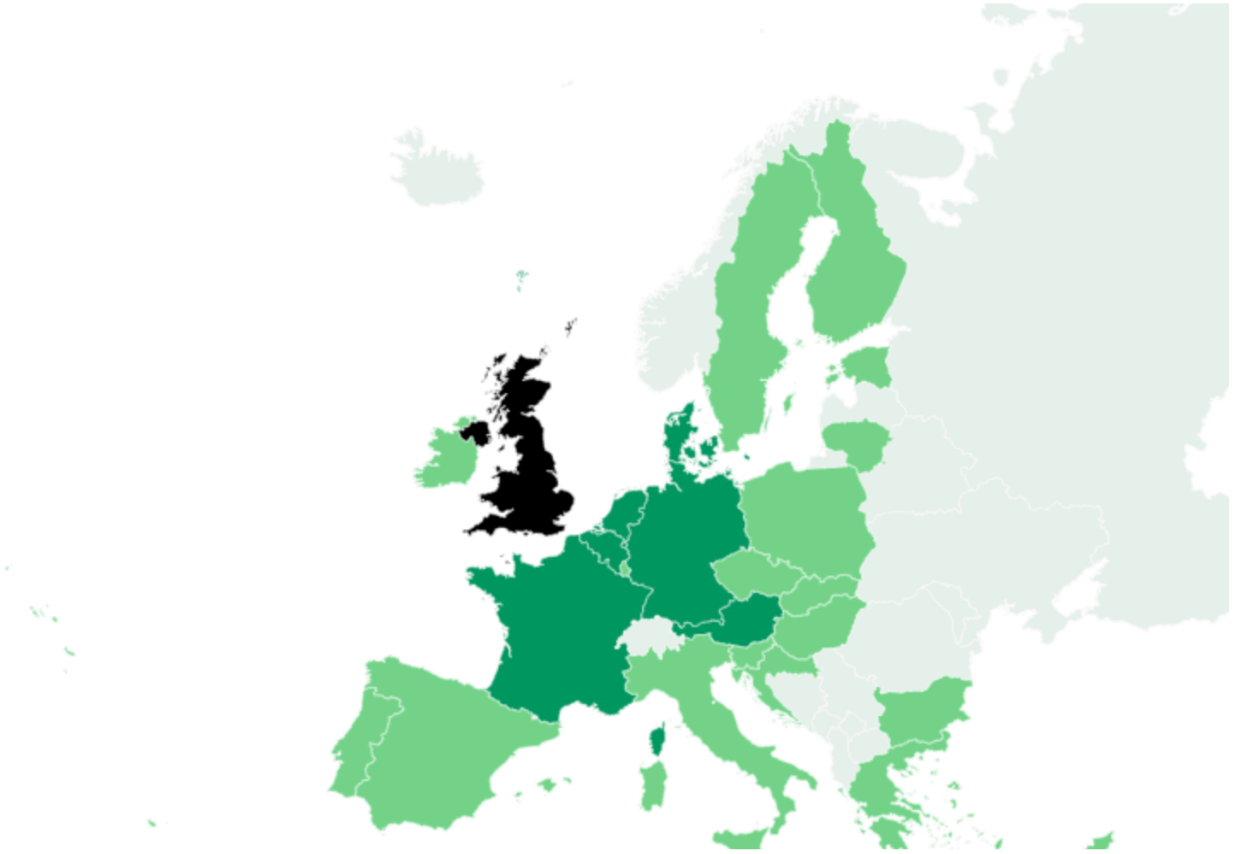
Source: T&E modelling of Ecomovement data • Ultra-rapid chargers are 150kW and above

Another option for providing funding for the roll-out of charge points in underserved areas without a cost to the treasury is the inclusion of energy used to charge electric cars within the renewable transport fuel obligation (RTFO). This would allow charge point operators to sell e-credits from electricity used for EV charging to fuel suppliers to enable them to meet their obligations under the regulation. This could significantly improve the business case for public charging stations by increasing revenue from charging provision. Such a scheme is already operational in California, The Netherlands, and five other EU Member States. The remaining EU member states are working to start introducing similar credit mechanisms in 2026 as shown in the graph below. T&E calculations suggest that in the Netherlands this has provided a subsidy to charge point operators of around 5p/kWh and has roughly doubled the number of commercially viable charge locations, particularly benefiting less profitable and rural areas. By implementing such a system, the UK can encourage private investment in EV charging networks in underserved areas without relying on direct government subsidies, helping to reduce costs to the exchequer.

UK left behind as EU powers ahead with e-credit scheme for charging

EU27 + UK by their stance on allowing charge point operators to generate and sell credits to fossil fuel suppliers

Credit scheme operational Planned expansion under RED III No scheme or plans in place



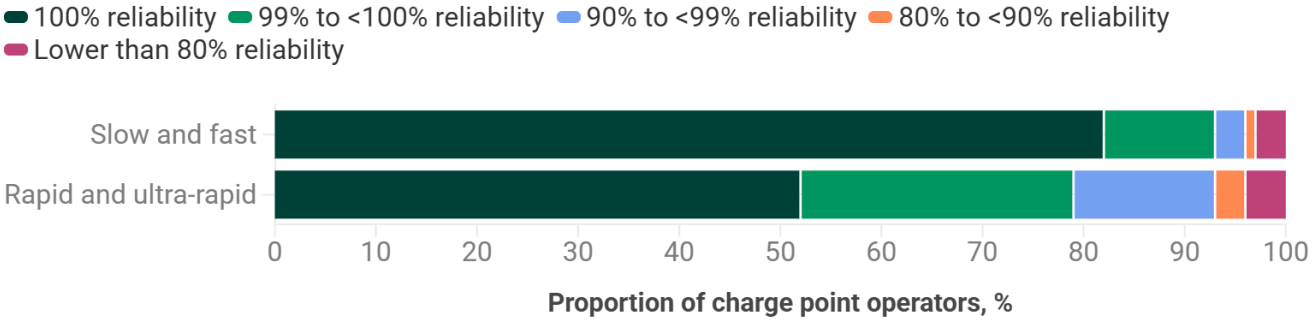
Source: Transport & Environment

T&E

1.5 CPOs are doing a good job of providing a reliable network

Rapid and ultra-rapid charge points and their accompanying payment system must be working 99% of the time, calculated as an average across each charge point operator's rapid charge point network over the calendar year, as specified by the Public Charge Point Regulation 2023. Analysis by the National Audit Office, shown in the figure below, suggests that the industry as a whole was not quite meeting this target in August 2024 as around 80% of rapid/ultra-rapid CPOs had a reliability over 99% (green bars in the figure), although it is worth noting CPO's had until 24th November 2024 to meet the target. Reliability was higher for slow/fast CPOs, as over 90% met the 99% reliability threshold, even though the regulation does not apply to them. This shows that most CPOs are offering a reliable charging and payment network, which should boost consumer confidence.

Charge point operators are very close to meeting the stringent 99% reliability target set by the government



Source: https://www.nao.org.uk/reports/public-chargepoints-for-electric-vehicles/

1.6 However, there is room to improve consumer satisfaction with charging

In Section 1, we have shown that the UK has sufficient charge points, with a skew towards faster chargers than DfT assumes is necessary and these charge points and their payment systems should be functioning 99% of the time. From this, it could be assumed that there is an excellent charging network in place, and consumer satisfaction and confidence in charging are high. However, ZapMap's 2024 Drivers' Survey found that public charge point experience satisfaction was only 64%, while an ERM review of 12 UK consumer surveys found that concern around charge point number and charge point experience were the most common concerns stated by the public after upfront vehicle cost. This shows that basic metrics such as number of charge points or charge point reliability are useful to track progress but don't provide a good indication of the consumer's experience of charging satisfaction or the impact this has on consumers' willingness to buy a BEV. The next section explores the charging experience from the user's perspective.

Section 2

2. Consumer Experience

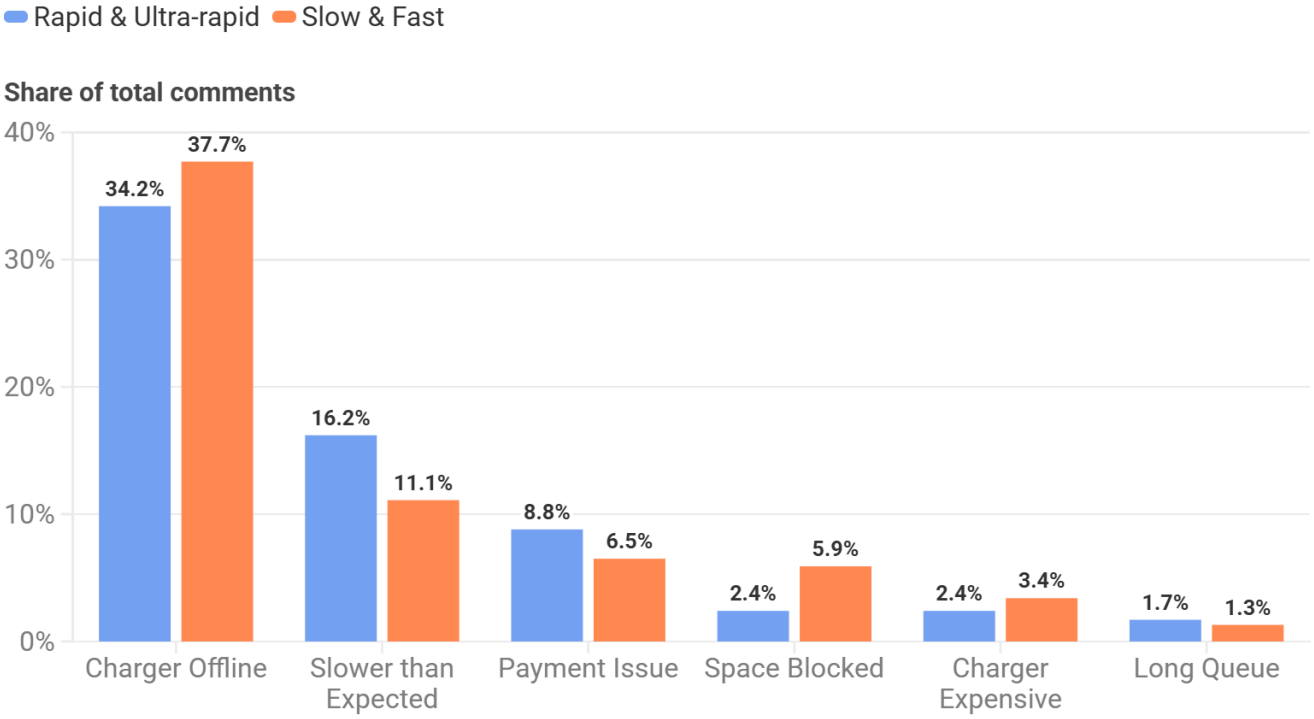
A good, affordable public charging experience is vital for the successful transition to BEV. An ERM study showed that today new car buyers are very demographically diverse, with a slight trend towards older, more affluent individuals. The wider literature, as shown in the next sub-section, shows that different groups have different priorities and concerns when it comes to public charging. In order to make all new car buyers comfortable with choosing a BEV, CPO's must ensure the current charging experience, which is focused on early adopters, evolves to provide a great experience for everyone.

2.1 Charging barriers to BEV adoption

The National Centre for Social Research found that across the general population, the charging-related barriers to BEV adoption are in order of priority "not enough charge points", "charging takes too long" and "uncertainty around how to find a charge point and start charging". Following the sharp rise in electricity costs after the Russian invasion of Ukraine, the AA also found that the rising cost of electricity bills was putting 70% of consumers off choosing an electric car, making the reduction of electricity prices a key priority to boost consumer interest in BEV. The list of key charging barriers changes when speaking to BEV users with home charging. Transport Focus in their survey of BEV users at rapid en-route chargers found "charging cost" to be the main barrier, followed much further behind by "charging speed", "locating a charger" and "operating the charger". The list of priorities changes again for BEV users without off-street parking. Britain Thinks found that this group worried about "the charge point working", "charge point being available" and "the diversity of CPO, apps and payment systems they need", reflecting their focus on dependability and ease of fitting charging into their schedule above charging speed and cost.

In this work, an AI text analysis model has been trained to review over 250,000 comments left online by users between 2020 and 2025. The comments are specific to a charge point, allowing the comments to be assigned to a location, CPO and charger type/speed. The AI was trained to extract information on a range of common charging complaints such as the charger being broken, the payment system not working, or charging being too expensive. The figure below summarises the high-level findings for the 60% of comments linked to complaints, note this does not refect the share of charging sessions with issues as consumers often don't comment after a successful charging session. This shows that while queuing and costs may often make the headlines, it is broken chargers, charger speed, and difficulty with paying that have the biggest impact on consumers' charging experience.

Consumers unable to charge due to a broken charger or poor instructions remain the most commented on issue



Source: T&E analysis of customer comments left at charge points. Comments left at charge points in Q1 2025

Charger reliability

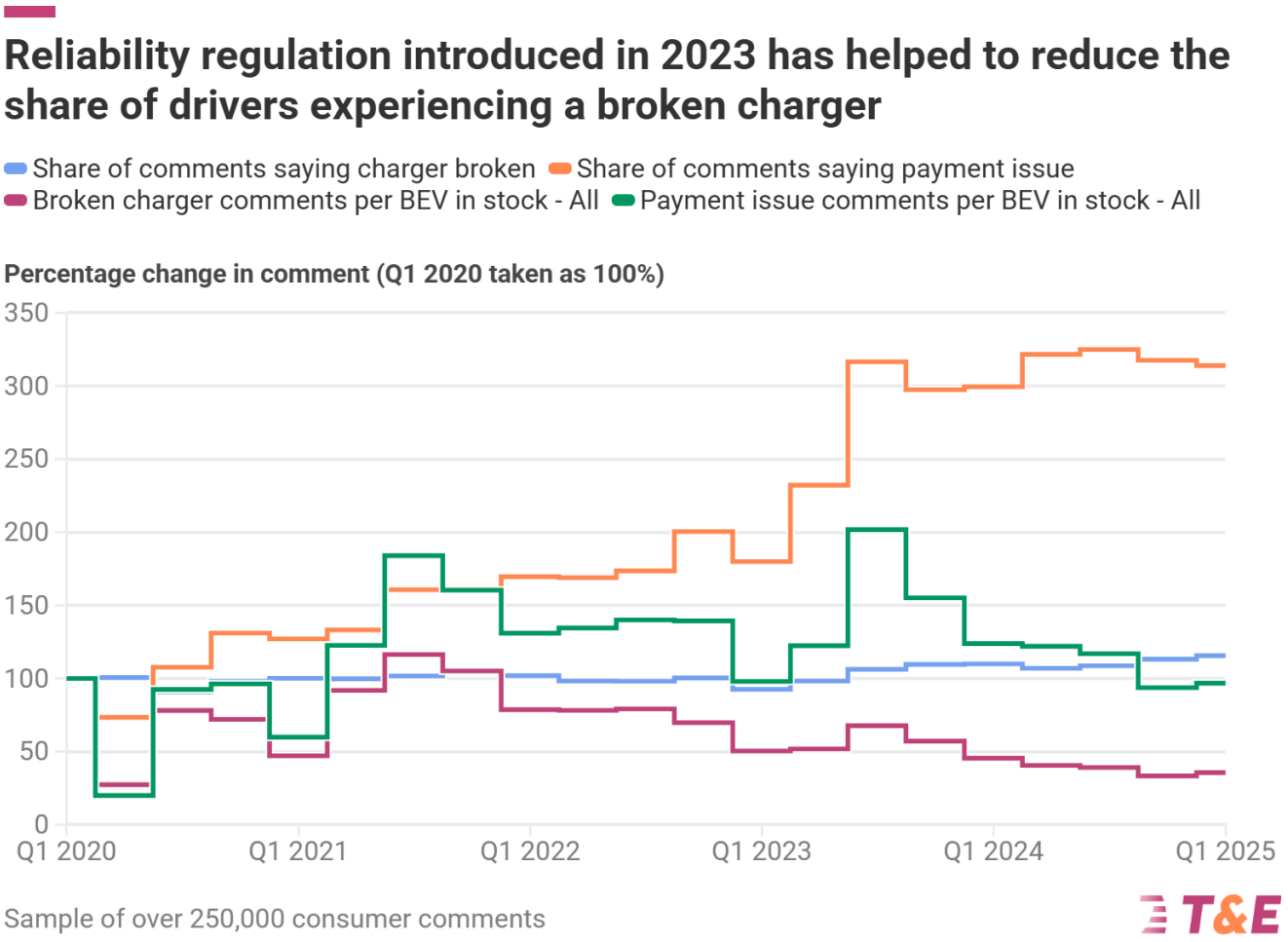
The Public Charge Point Regulation 2023 sets minimum standards for pricing transparency, contactless payments, reliability, support through a helpline, open data and ensuring consumers can access charging through a roaming provider. This regulation should ensure the uptime and reliability of rapid & ultra-rapid chargers and payment systems in the UK.

The Public Charge Point Regulation 2023, introduced in late 2023 and enforced in late 2024, requires 99% reliability of rapid/ultra-rapid chargers and their payment systems. The regulation aligns with a period of gradually falling comments per BEV regarding both broken charge points and payment issues, suggesting the regulation has had a positive impact.

However, the number of comments and share of comments regarding broken charge points and payment issues have remained constant since the regulations' introduction. This could indicate that a constant number, although shrinking share, of CPOs network is regularly broken. This is supported by multiple comments complaining about chargers which are still out of order and have been for a long time. These possibly older, less reliable units may just need replacing.

Across the time period studied, the number of comments regarding payment issues changed from 100% at the start of 2020 to 313% and 97% respectively by Q1 2025 for the share of comments and comments per BEV in the stock. On charger reliability, which specifically

assesses consumers' failing to charge, the picture is slightly more positive, with comments staying constant or declining - comments changed from 100% at the start of 2020 to 115% and 36% for share of total comments and comments per BEV, respectively, by Q1 2025.



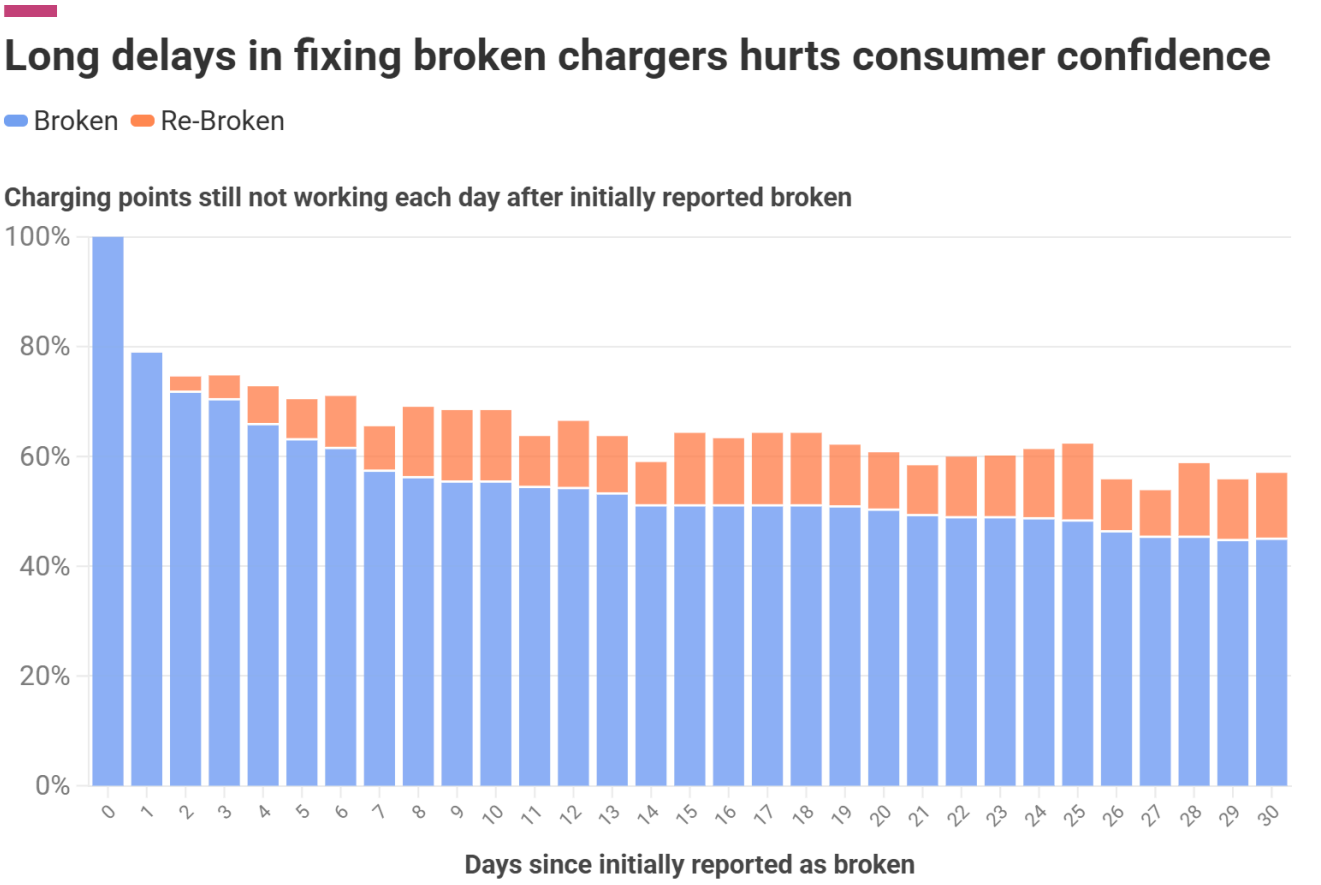
There are several possible reasons why a sharp drop in comments after the introduction of the Public Charge Point Regulation has not been observed; some CPOs may not be meeting the regulation, reliability for many CPOs was already very high, as shown by the National Audit Office, so the regulation had a limited impact, or users could be struggling to use working charge points due to poor information and support. If this is the case, then further research is needed to identify and rectify these issues.

What is clear is that for the small share (3-4%[1]) of charge points that are broken, the regulation has not resulted in quick repair times. Data on repair times prior to 2023 is not available; therefore, it is not possible to assess the impact on repair times of the introduction of the regulation. However, analysis of 2025 data, as shown in the figure below, shows that once reported as broken most chargers (60%) are not repaired for at least a month. Only a minority of charging points are repaired quickly, within 24 hours (20%) or within a week (40%). These repair times differ across CPOs and locations with the South of England achieving 50% of charging

[1] Share of broken charge points according to Ecomovement data

points being fixed within 1 month. This drops to 40% for the North of England and 30% for the Midlands.

There is also a large difference across CPOs with MFG EV Power fixing 78% of charge points within a month, but Genie Point only fixing 22% over the same period.

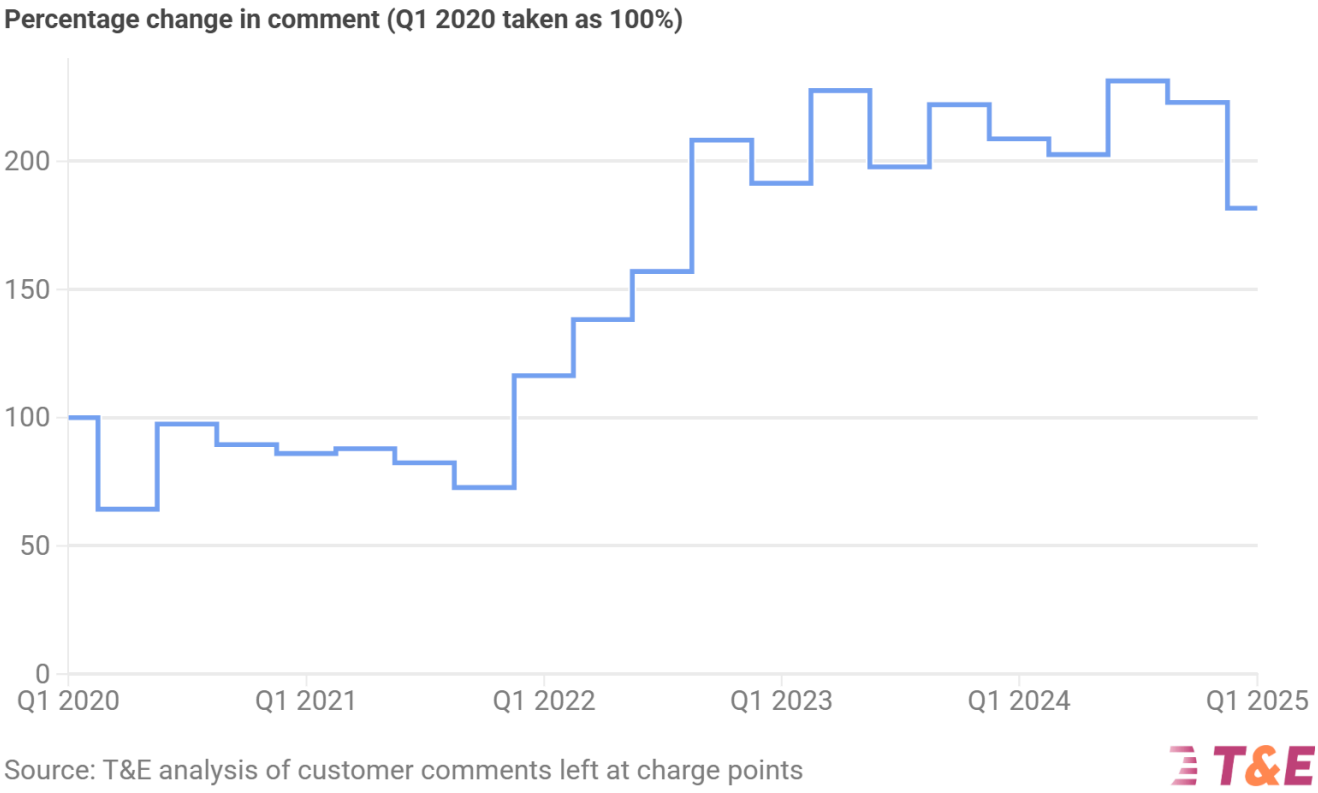


T&E analysis of a sample of 507 charging points reported as broken in March 2025

Charging cost

The expense of public charging did not come up as a complaint in the charging comments analysed as often as initially expected, given that it is the number one most commonly cited barrier to buying a BEV as reported in a recent study by ERM, with less than 5% of comments raising the issue of expensive charging. This is likely because consumers are less likely to add a comment on charging costs, rather than that this is not a priority issue for them. The number of comments relating to charging being expensive doubled with the onset of the cost of living crisis in 2022 and has not gone down since, suggesting concern about high electricity prices have remained unchanged since prices peaked two years ago.

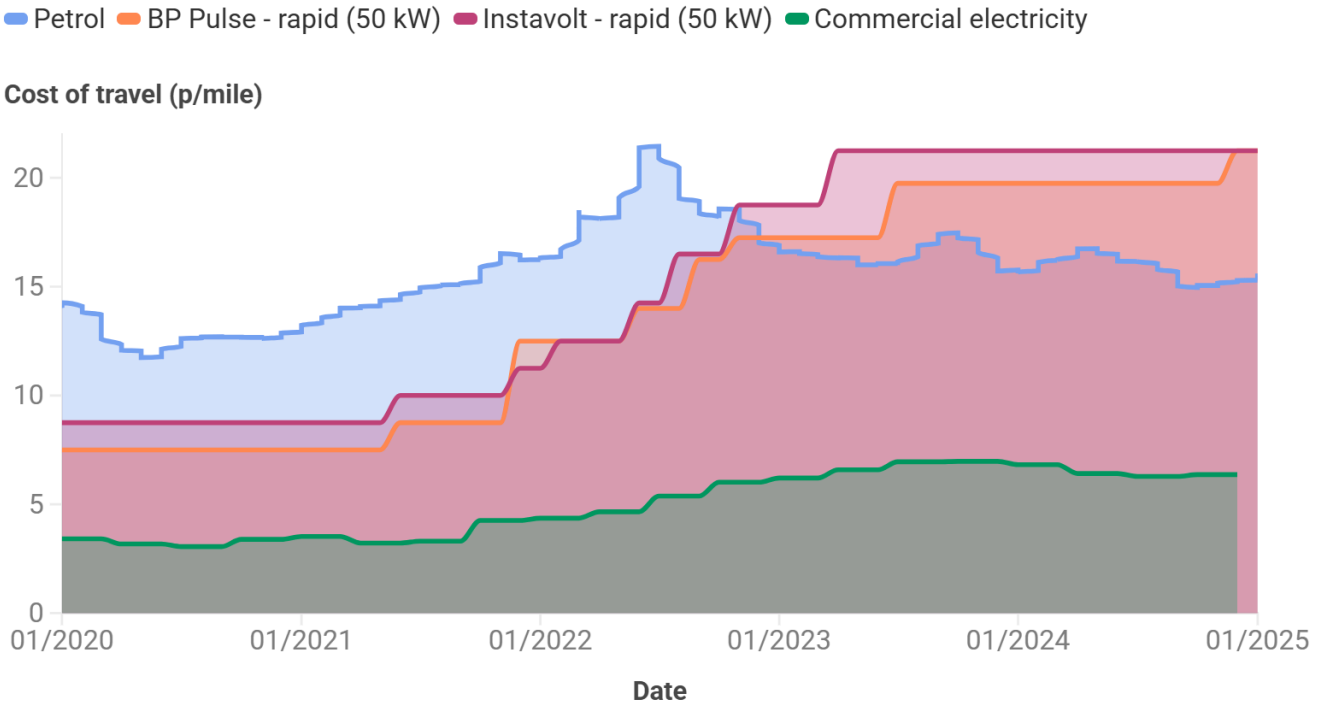
Comments on the cost of public charging started to rise in 2022 with the rise in electricity prices and have remained high since



Source: T&E analysis of customer comments left at charge points

The Centre for Net Zero found that consumers respond strongly to charging prices and ERM showed that charging price is a major concern for those thinking about buying a new BEV. As shown in the figure below charging prices in the UK more than doubled in less than two years between 2021 and 2023 and have remained high since. The UK now has the highest public charging prices of any major European car market, according to Ecomovement data. This reduces the perceived benefit of owning a BEV and drives higher inequality between those with and without a driveway. The image below shows the current stark contrast where the cost of petrol is below the cost of public charging for the two biggest charging operators (for rapid + ultra-rapid chargers excluding Tesla) due to the 2022 fuel duty cut of 5p, which is yet to be reversed, as well as more than 10 years of fuel duty freezes.

Public charging prices have risen quickly discouraging consumers from choosing BEVs as they question the financial savings



Source: DESNZ (2025), Weekly road fuel prices. DESNZ (2025), Gas and electricity prices in the non-domestic sector. Instavolt and BP Pulse rapid charging price: range of news outlets

To encourage the switch to electric and away from fossil fuels it is crucial that this situation is reversed by lowering the price of public charging while concurrently increasing the cost of fossil fuels. This should start by reversing the freeze in fuel duty put in place after the invasion of Ukraine and continuing to increase fuel duty in line with inflation. Bringing down electricity prices by ensuring access to cheap off-peak tariffs either in residential on-road charging, as already offered by some charge point operators or cross-pavement gullies should be the government's next priorities. Reducing VAT rates for public charging to align with domestic tariffs is another option, the cost of which could be covered by unfreezing the increase in fuel duty. To be effective at bringing down prices, such a measure must guarantee that the savings are fully passed on to consumers.

Charging speed

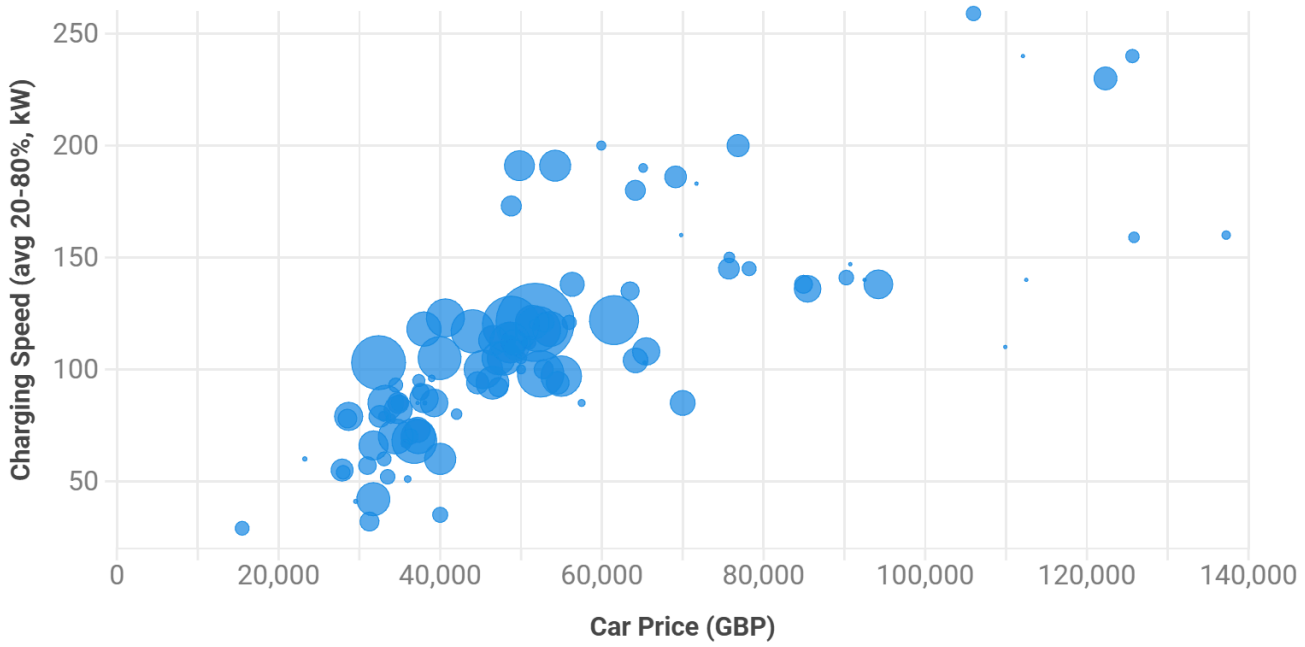
The speed of charging is impacted by several site-specific characteristics such as charger-rated speed, charger cooling systems (water-cooled cables can maintain higher speeds for longer than air-cooled cables), grid connection capacity, number of plugs powered by a single charging post and site busyness (some sites will have to slow charging on individual chargers if all chargers are in use and their combined demand is greater than the site's grid capacity).

Most consumer comments (80%) around charging speed are left on the fastest chargers, where the speed of charging is likely to be impacted by the design of the vehicle, not just the charger. Data from EV Database and DataForce, summarised in the figure below, shows that only 10% of cars sold in 2024 can accept charging speeds above 150kW across a charging session, this rises to 60% for speeds greater than 100kW. Older and cheaper models are also much less likely to offer these higher charging speeds, meaning consumers buying new cars will only now start to see the added value of ultra-rapid chargers and only if they are buying a more premium model with a price over £40,000. To prevent consumer frustration at chargers not providing the charging rate stated on the charger CPOs should provide consumers with information at the point of charging, which states the charging speed and the reason for that speed (e.g. grid constraint, other drivers using a plug attached to a shared charging column, the car cannot accept higher speeds).

Ultra-rapid chargers future proof the network but consumers can be unsatisfied as their cars cannot make use of these high speeds

90% of BEV sold in 2024 had a price below 65,000 and a charging speed under 140kW

Bubble Size = Annual sales in 2024



Source: T&E analysis of car price, charging speed and sales based on data from EV Database and DataForce

2.2 Charging experience lottery

Differences in charging experience between drivers are often discussed in terms of having a driveway or not. While this is the biggest differentiator, many other factors are impacting the user's experience of charging. Many of these will have to do with the car. In the best cases, the car has good range and accurate range estimation, the car will plan the route, identify charging stops, pre-condition the battery before stopping, support payment and charge quickly. However,

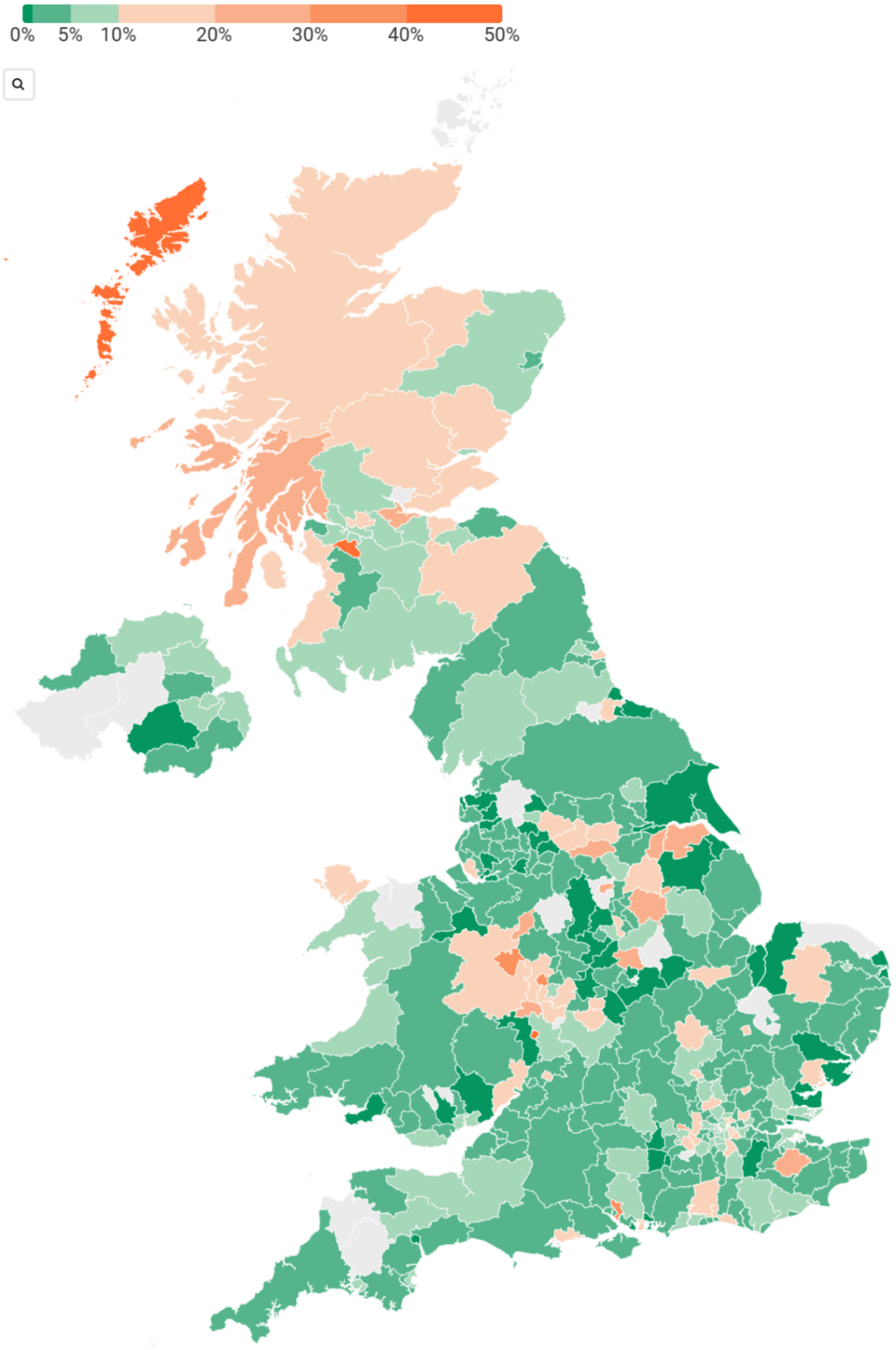
many car models will only do some of these steps, leaving drivers to use third-party apps to fill the gaps. The requirement to be technology capable to get a good charging experience may be one other reason why older users rate public charging so poorly, as found by this DfT backed survey.

For example, the high technology literacy, seamless identification and payment of charging requires the driver to be proficient with the in-car systems, a smartphone and apps, required to gain the best charging experience may not be working for older consumers, with Age UK finding 50% of people over 75 lack key foundational IT skills. This is supported by a DfT backed survey, which found the over 55s were significantly less likely to use public charging, and when they do, they are less likely to be satisfied (20%) compared to respondents aged 35-54 (46%) or aged 18-34 (61%).

Charging experience is also impacted by the charging network with some locations/CPOs offering great speed, reliability, and amenities while others are lagging behind. As shown in the figure below, broken charge points are concentrated in specific locations, resulting in a charging lottery - the percentage of broken rapid and ultra-rapid charging points when reviewed in June 2025 was extremely high in specific locations such as East Renfrewshire 68%, Worcester 53%, Wolverhampton 37%, Telford and Wrekin 36%, and Eastleigh 32%. This means that today drivers run the risk of passing good chargers and stopping at broken chargers. These bad experiences drive down consumer confidence in public charging and BEV use more generally.

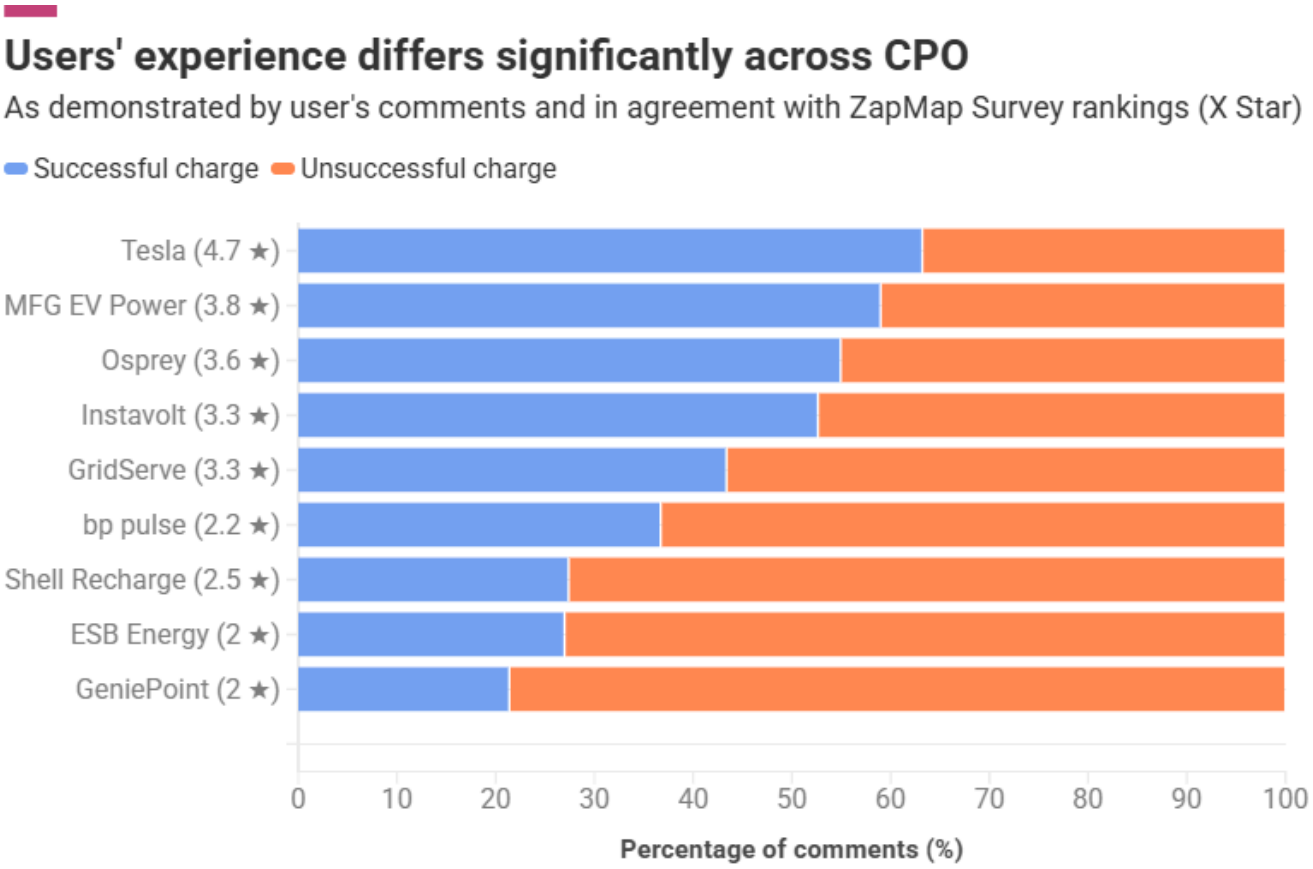
The postcode lottery for broken charging

Percentage of broken rapid & ultra rapid charging points in each Local Authority, May 2025



Source: Ecomovement • Includes only charging points with a network status
Local Authorities are marked grey where there are less than ten EVSEs with a network status

Charging experience can also differ significantly between chargers within a local area run by different CPOs but this is unlikely to be apparent if drivers don't do their research before setting off. As demonstrated by each annual ZapMap survey, and supported by the comments in the figure below, the quality of the charging experience still differs significantly across CPOs even after regulation has been introduced to try and improve the minimum standard - note that the ratio of successful to unsuccessful charging in the figure below does not reflect real failure rates as consumers are less likely to comment after a successful charge.



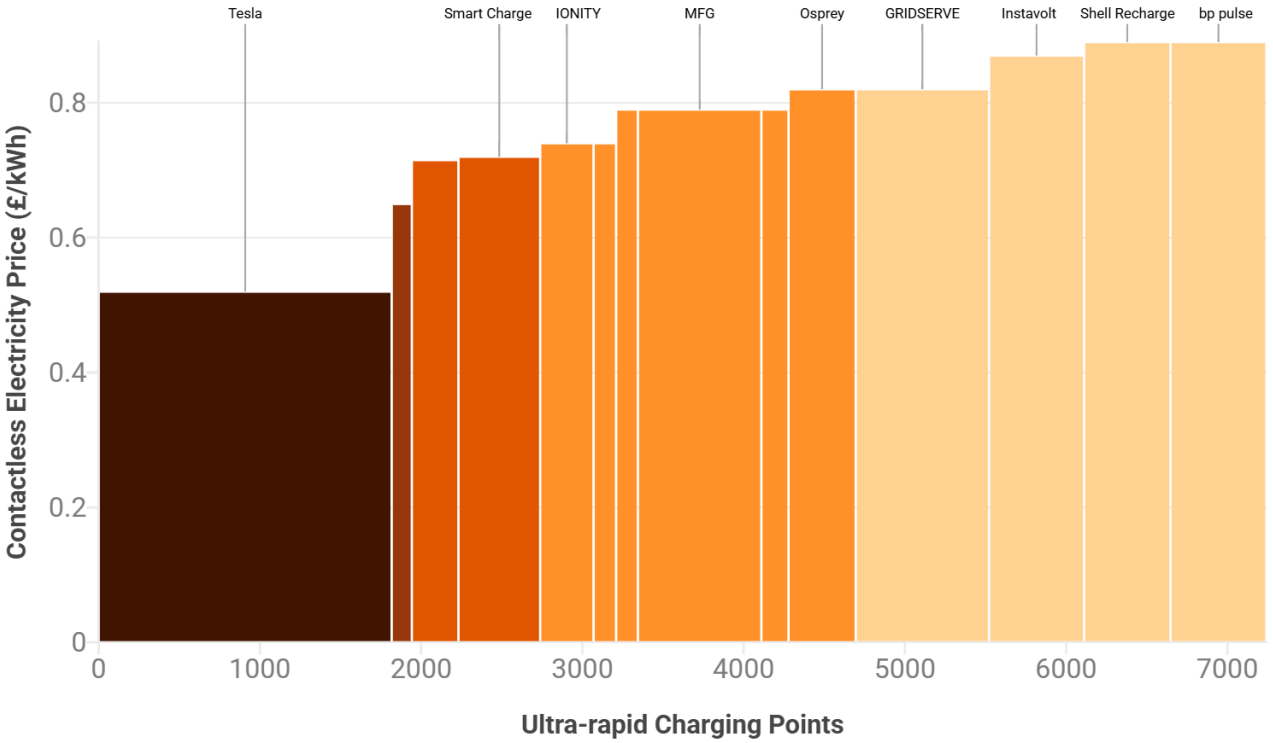
Source: T&E analysis of consumer comments left at chargers. ZapMap scores: https://www.zap-map.com/news/best-rapid-ultra-rapid-networks-2024-25

Charging prices can also differ significantly between chargers of the same speed and within the same local area. As charger roll out expands further competition should eliminate such practices but poor price signage[2] means that there is a need to compare prices online in advance, making it hard for drivers to shop around. For ultra-rapid public chargers, available to all drivers, prices range from an average of 0.69£/kWh at Fastned to 0.87£/kWh at Instavolt. This difference would result in a price increase of £6.50 or 26% for a user charging a 60kWh battery from 20 to 80%.

[2] Unlike petrol prices which can be seen from the road and compared as people drive past, charging prices require the driver to stop and read information on the charge point. This limits consumers knowledge of prices along regular routes and makes finding the cheapest local charger impossible without using a smartphone

Without clear price signage, drivers cannot shop around

Ultra-rapid contactless prices for CPOs with more than 100 charging points, June 2025



Source: Ecomovement for the number of charging points; prices taken from CPO websites • Tesla Supercharger price is for non Teslas during off peak hours
Gridserve and Shell Recharge using the midpoint of the range for contactless DC charging

Section 3

3. Conclusion

At a macro level, the UK charging market is a success with the number of charge points, speed of charge points, and charge point reliability all close to or exceeding government projections and targets. Charge point distribution still needs further work to ensure drivers can make a confident shift to BEVs regardless of where they live across the country, but again, change is happening here, with 6 out of the top 10 local authorities for absolute annual growth in charge point number being outside of London, according to the latest DfT charge point data.

Despite excellent progress, respondents to ZapMap's 2024 Drivers' Survey found that public charge point experience satisfaction was only 64% and an ERM review of 12 UK consumer surveys found that concern around charge point number and charge point experience were the most common concerns stated by the public after upfront vehicle cost. Our review of comments left during charging events found that while queuing and costs may often make the headlines, it is broken chargers/failure to charge, charger speed, and difficulty with paying that have the biggest impact on consumers' charging experience.

- **Charging Reliability** - The introduction of the Public Charge Point Regulation 2023 has steadily improved the comments per BEV regarding broken charge points and payment failures. However, the raw number of comments regarding these issues has not improved. This suggests that much of the network is working well for many drivers but a small share of chargers are constantly broken and are being fixed very slowly or not at all. Getting these charge points fixed quickly is vital to boost consumer confidence in the whole charging network.
- **Charging Speed** - Slower than expected charging was the second most common comment left by consumers, demonstrating how frustrating consumers find it not to be able to charge at the full speed advertised on the charge point. However, analysis of charging speeds offered by car models on sale in 2024 found that it may often be the car, not the charger, limiting charging speed at ultra-rapid chargers. CPOs could boost consumer satisfaction with their network by communicating this to their customers at the charge point
- **Charging Cost** - Consumer comments on charging costs rose sharply between early 2022 and early 2023, mirroring the rise in electricity prices following the invasion of Ukraine. Public charging prices and consumer comments around the cost of charging peaked in early 2023 and have remained at this high level since, suggesting action to reduce charging prices would have a positive impact on consumer experience
- **Charging Lottery** - The quality and cost of the charging experience in the UK differ depending on which CPO's network is used and where the charging takes place. Broken charge points are concentrated in small areas, meaning drivers who stop at charge points as though it were a petrol station, without pre-planning their charging stop, face a lottery of broken charge points.