Bristol aims to achieve 100% ultra-low-emission-vehicle (ULEV) coverage by 2050. With an estimated 200,000 cars and an already fragile transport ecosystem, how will Bristol approach this growth without burdening the city’s infrastructure?

Bristol has big ambitions. By 2027, the city aspires for 50% of all public vehicles to be ultra-low emission-vehicles (ULEV). By 2041, 50% of all cars, and by 2048, all vehicles on Bristol’s roads will be ultra-low emissions (BOCP, 2019). However, a zap-map survey suggests a few social concepts which are withholding this breakthrough.

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| The cost of buying an electric car is too high | 55% |
| Not being able to travel far enough with one charge to reach the next charging point | 54% |
| There is not a public charging point near my home | 53% |
| You have to charge the car too often | 38% |
| It takes too long to recharge the battery | 33% |

Firstly, price equity is the most prevalent issue facing customers. More than half (55%) of people believe the high cost of an electric car is the main factor deterring purchase. At the moment, the most popular electric car costs £31,000 (Nissan Leaf), whilst the most popular conventional vehicle costs only £15,995 (Ford Focus) (Ford, 2019; Nissan, 2019).

The rest of the difficulties revolve around charging points. Bristol currently has 81 charge points - approximately 1 for every 7-8 electric vehicles (Zap-Map, 2019). However, if they want to maintain this ratio to 2050, there will need to be considerable investment. By 2050, Bristol aims for 100% of all cars to be ULEV and there are currently approximately 190,000 cars in Bristol (BCC, 2019). With no increased uptake in cars, and the full switch of 190,000, Bristol would need over 23,000 charge points. Even to match the upper-limit for charger-per-vehicle ratio of 1:30, Bristol would need over 6,000 charge points. A considerable increase from the current 81.

Home charging is really important. Home charging is especially convenient for people who primarily use their electric car for short trips around their town or city; especially if a car has a 200- to 300-mile range, that could get them a couple of days or weeks on a single charge. In other words, it’s [**far more often**](https://nhts.ornl.gov/vehicle-trips) that we’re driving home, to work, or to run an errand than going on a long road trip.

But convenience comes with a cost. Home charging may be the most convenient, but home charging is also typically relegated to higher-income people who can actually afford to charge from within their home. For lower-income people who don’t have a garage or a dedicated parking spot with easy access to a charger, the logistics of charging at home become much more complicated. As policymakers consider how to make EVs more affordable, they should also consider how to make home charging more equitable and accessible for middle- and lower-income people.

One option is getting more charging stations on residential streets, powered by the same electrical lines for streetlights. This was [**piloted in London**](https://www.fleeteurope.com/en/new-energies/europe/analysis/1300-street-lights-converted-ev-chargers-london?a=JMA06&t%5B0%5D=Siemens&t%5B1%5D=Ubitricity&t%5B2%5D=electric%20vehicle&t%5B3%5D=charging%20infrastructure&t%5B4%5D=London&curl=1#:~:text=A%20major%20residential%20road%20in,not%20have%20off%2Dstreet%20parking.) in 2020, with a number of street lights converted. But this is a relatively small project, and it hasn’t been adopted widely yet in other countries. Another option is increasing the number of charging stations at people’s workplaces, giving them another place to charge while their car is parked for hours. Everyone parks their car somewhere at night; that’s where we need to get the charging to. We need to have a mix of home charging, workplace, and public charging stations.

Also, innovations will help drastically. Car range is growing so vehicles will have to charge less often. Charging on the move is also in trials.

However, and perhaps most importantly, there is a considerable amount of misinformation surrounding the electric car. In a study commissioned by Volkswagen, 20% of participants believed an electric car slows down whilst battery decreases and when asked how long it takes to charge the average electric car, the average answer was just under eight hours. Both responses show a lack of education upon electric cars, and this does contribute to a slower take-up. Although electric vehicle cost and range may improve there still seems to be a way to go to educating the consumer base and improvements here could very well be a catalyst for the accelerating growth the industry seeks.