



Plug in and go with your electric car. If only it was that simple!

We know climate change is serious and we know we must reduce our dependency on fossil fuels, writes Mike Coles. Changing to an electric car is billed as one way we can help. We also know that electric cars are more expensive to buy and cheaper to run. But how cheap? Read on.

Electric motors are simple and reliable. Think of your fridge where motors can run continuously or frequently for decades without breaking down. But when it comes to electric cars it's the battery technology that's expensive to produce.

Let's put aside hybrid cars, which use an internal combustion engine supplemented by an electrical system, and concentrate on totally electric-powered vehicles. Here, the main battery technology is lithium-ion, the most expensive component of which is cobalt. Fifty per cent of the world's cobalt is mined in the Democratic Republic of Congo under questionable labour conditions and its future availability is already recognised as a problem.

But back to the practicalities of running an electric car in East Finchley. You decide to bite the bullet and purchase an electric family saloon. Three of the most popular offerings by Renault, Kia and Nissan are all around £28,000-32,000, about 40-50% more than a similar petrol car. Having bought the car you plug it in and start to enjoy pollution-free cheap motoring.

It's a minefield

If only it was that simple. One consideration with your new electric car is how far it will go on one charge, or more realistically 80% of its charge, since lithium-ion batteries can be damaged if they run flat and they charge more slowly above 80%. Your range depends on the capacity of the battery, your driving style and the ambient temperature.

Car battery capacities are measured in kilowatt hours, ranging from 6kwh for small city cars to 100kwh for the most advanced and expensive. The bigger the capacity the longer the range: a whopping 400 miles in the top of the range Tesla 100kWh car or less than 100 miles in a small city car like a Smart Car.

Charge anxiety

Then charging an electric car is another minefield and something prospective owners should research carefully. There is even a new medical condition recognised as 'range anxiety' or more accurately 'charge anxiety'. In short, what if your battery goes flat and there is nowhere to charge it?

Currently this not an unrealistic concern. Electric car sales, currently about 20% of all new car registrations, are outstripping the availability of charging points. Predictably, this availability is uneven throughout the country, although locally we are quite well served.

You must plug your car in somewhere. The cheapest option, which provides the cost benefits that you hoped would offset the

purchase price, is charging it off-road at your house using a home charger and off-peak electricity. This means having a two-tariff electricity supply: normal during the day and cheap at night. The difference in the two tariffs can vary a lot, perhaps from 45p to 7p. You'll need to research the options as energy charges continue to rise anyway.

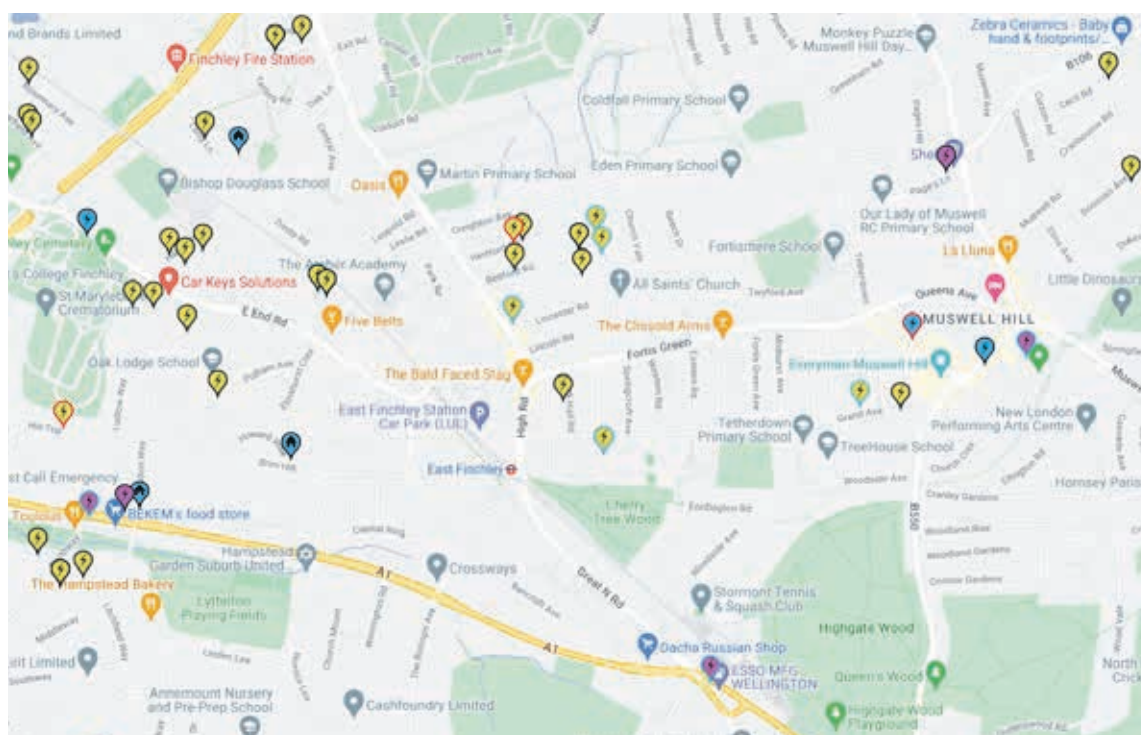


Roadside: A lamppost charging point

Local charging points

However, in East Finchley only a small minority of drivers have off street parking. Those without, or who live in multi-storey buildings, will depend on public charging points. This is where costs can vary wildly and caution and more research is needed.

Readers will have noticed charging points appearing all around N2. Some of these have been installed in lampposts courtesy of Barnet Council and Ubitricity, a subsidiary of Shell Oil (see the map for locations). There are some commercial ones at the tube station and other public ones outside the UOE Post Office. Over the past five years the government has been incentivising charging points by offering grants. Some supermarkets and leisure centres have offered free charging while you shop or swim but now with the increasing uptake of electric vehicles the situation has become more commercial and expensive.



Plug it in: The map of car charging points around East Finchley taken from the zap-map.com website

Charging times

Let's look at a few details. The larger your car battery is, the more electricity it will need to recharge. Not all chargers charge at the same rate. Home chargers and lamppost chargers charge typically between 3kWh and 5kWh, so if your car has a 50kWh battery it will take around eight hours to get to 80 - 90%.

Most of the commercial public charging points charge at a higher rate called rapid charging. Some even offer ultra-rapid charging or super-charging where you can substantially recharge your car in 20 minutes. You won't be surprised to hear that the faster the charge the more expensive it is.

Get the right plug

Here is another consideration: there are three different types of charging plug. Many public chargers have tethered plugs, where you bring the plug from the charger and plug it in to the car, much like filling it with petrol. Others, including lampposts, require your own cable and you must have the right plug and cable for that charging point. Of the three plug types, what's called the 'type 2' seems to be becoming the most common.

If you live near a lamppost you can apply to the council to have a charging point installed, providing you meet certain conditions (see below for link). There are no marked bays at the lamppost sites so there is nothing stopping a petrol car or another electric car parking there and blocking its use unless you have a long-enough extension and can park safely nearby.

How much does it cost?

Costs by the major suppliers have already gone up twice this year as the result of the energy crisis. Recharging at home is now

43% higher than a year ago, but still cheaper than the equivalent amount of petrol.

For public charging points it's a little murkier. A general increase of 25% of on road charging was quoted by The Guardian, but that's on top of already high costs. National supplier Instavolt, which operates a charging network across Britain, has increased its prices twice so far this year, first from 45p/kWh to 50p/kWh and then to 57p/kWh. Ubitricity, found locally, increased prices from 24p/kWh to 32p/kWh in the spring. Another quirk: domestic electricity users are taxed at a VAT rate of 5% whereas public charge-point supply is taxed at a VAT rate of 20%

minutes for £9.36. A 22kWh 'fast' charger would give you 172 miles but in two hours and cost £12.48. A lamppost could also give you 172 miles for £12.48 but in 10 hours.

As we can see, there is a 'charging divide' between those with home access to charging and those relying on public chargers. The government is seeking to reduce the disparity in prices across the charging network and stop those without access to at-home charging paying a much higher rate.

But regardless of public charging costs, if you don't have home charging then, for the moment, you have to roam the streets to find a charging point and hope for the best, or sit on a garage forecourt



Forecourt: Charging bays at the Esso garage opposite Aylmer Parade

A real-world example

Costs are very fluid but as a rough guide let's take a Renault Zoe, a decent average compact electric car. About £29,000 to buy, you pay no vehicle tax on it, it's exempt from the ULEZ, and residential parking permits are cheaper or even free. It has a 54kWh battery and a range of just over 200 miles.

Fully charging it at home, off-road, with off-peak electricity would cost you £5.82. If you relied on public charging, a 50kWh charger could give you 129 miles in 36

and wait your turn at the limited line of chargers there.

There is also concern over how your charging electricity is generated in the first place. But that's another story!

Useful links

To apply for a lamppost socket outside your house:

tinyurl.com/4xa9b3av
Barnet Council's 'transport vision':
tinyurl.com/ym2nkyby

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