

Competition and Markets Authority Electric Vehicle Charging Market Study

Electrical Safety First Response

January 2021

Electrical Safety First is the UK charity dedicated to reducing deaths, injuries and fires caused by domestic electrical accidents. The Charity does this through education, public awareness, advice campaigns and political engagement.

The Charity welcomes the increasing take up of electric vehicles (EVs) as it is clear that they have many advantages over petrol and diesel vehicles for both health and environment, and they form an important part of the UK's efforts to reach a net zero carbon target.

However the Charity has a number of safety related concerns regarding how EVs are to be charged. Given the current numbers and locations of publicly accessible charging points relative to the projected numbers of EVs, and the expense of installing home charging points it is clear that a great many owners will rely on charging their vehicles through extension leads from standard UK plug sockets.. This practice carries with it a number of hazards and the numbers of EV owners charging their vehicles in this way will increase rapidly, especially given the newly announced target of 2030 for ending the sale of petrol and diesel engined cars.

It should also be considered that many households operate multiple vehicles, and so even if homes have a dedicated EV charging point there may be insufficient capacity to charge all the vehicles safely. This need for extra capacity is something to be considered even in single vehicle households, as it is foreseeable that friends and family will still visit and require power for their vehicles during their stay.

To solve this problem two things are necessary to ensure that the take up of EVs is a success. Firstly, there must be adequate numbers of publicly accessible charging points to reduce the so-called "range anxiety" that puts people off of buying an EV.. If owners of EVs are constantly concerned about where they will next be able to find a charging point this is likely to act as an incentive to charge from domestic sockets. Secondly, all major barriers to home charging access must be resolved. These include physical barriers such as the lack of off-street parking and associated dedicated charging points and "paper" barriers such as insurance and tenancy arrangements.

The Government must make an assessment of the suitability of the UK housing stock with regards to the provision of dedicated domestic charging points. This should not be done in isolation, as the electrification of domestic heating which is required to meet the UK's carbon targets will also require significant changes to the power required by home installations. There needs to be substantial early and constant engagement with the network operators and National Grid to ensure there is an adequate infrastructure for the provision of safe charging across the UK.

Early action is required to ensure that the roll out of EVs in the UK is not hampered by the issues discussed in this response. It is worth highlighting that whilst 2030 is the target for new vehicles to be exclusively EVs, the change will occur much faster as more EVs enter the second hand market and it becomes much

less desirable to purchase a petrol or diesel vehicle as 2030 approaches. Demand will easily outpace the supply of adequate charging without considerable Government activity.

For any questions regarding this response please contact [redacted]

As a consumer-facing charity Electrical Safety First has responded to three of the questions from **Theme two: effective consumer interaction with the sector**, numbers 2, 5 and 9.

2. What are the key challenges for consumers already interacting with the sector and how might these change over time as the sector grows?

The key challenges for consumers from a safety perspective are access to dedicated charging facilities, whether domestic charging points or publicly available charging stations. As the consultation document notes, around 80% of EV charging is done at home. Where domestic charging stations are not available, either through lack of suitable access such as in terraced housing with no dedicated on street parking or cost barriers then EV users will be forced to charge through extension leads. This issue will be further exacerbated with high-density housing, such as blocks of flats.

A long-standing safety concern of Electrical Safety First is the practice of “daisy chaining”, whereby short extension leads are plugged into one another in order to increase the access range from the wall socket. This dramatically increases the risks of socket overload and electric shock, and can also place excessive physical strain upon both socket and extension lead. This practice also leads to extension leads, intended for temporary supply of power, rapidly becoming permanent.

The risks of this practice increase again if they are used to provide an outside power supply. The majority are not intended for this use and have minimal protection against the elements, increasing the risk of a serious electric shock. Research conducted by Electrical Safety First discovered that 75% of those who charge using a domestic extension lead admit to ‘daisy-chaining’ extension leads to reach their vehicle, showing that the issue is already wide-spread¹.

In urban areas the sight of charging cables crossing pavements to electric vehicles has become reasonably common, despite this practice being against the law and creating an additional hazard for pedestrians. It is also likely that accidental force on these leads will result in damage to the cable, plug and socket, again increasing the risk of electric shock and fire resulting from the use of damaged equipment.

If the government’s target of ending the sales of new petrol and diesel engined cars by 2030 is realised, there will be a rapid year-on-year increase in ownership of electric vehicles, which in turn will put pressure on existing public charging infrastructure. Government must ensure that adequate infrastructure is in place, and that it addresses the issue of unsafe charging practices that is likely to arise from housing that is not able to install private charging points, such as terraced housing, high rise residential buildings and flats.

¹ <https://www.electricalsafetyfirst.org.uk/media-centre/press-releases/2019/05/driven-to-danger-electric-vehicle-drivers-charging-dangerously-due-to-lack-of-public-infrastructure/>

5. Do particular groups of consumers face additional challenges to interacting with the sector and if so, who and why? How might these be overcome?

One group which Electrical Safety First has identified as facing particular challenges is that of tenants in the Private Rented Sector (PRS). As these residents are entirely reliant on their landlord providing charging access, if none is provided they may soon find themselves effectively prohibited from buying a new vehicle. As 20% of UK households reside in the PRS, a figure which is forecast to continue increasing², this is a large scale issue which requires urgent action.

As an example of the issues facing tenants, Electrical Safety First has heard testimony of renters who have had great difficulty in having a charging point installed in their PRS home. In one case the renter requested a charging point for their EV, only to have an increasing number of barriers and burdens placed in their way. The end result of this process being an outright refusal, effectively forcing the tenant to seek alternative housing if they wished to continue using an EV.

Some of the barriers mentioned included the tenant being asked to take out additional insurance on the Landlord's property due to the perceived risks of installing a dedicated charging point. Whilst a dedicated charging point is a far safer option than charging from a wall socket, it is understandable that landlords will require assurance that their investment is protected. In order to counter this it is important that the Government consider incentivising landlords to install charging points

It is clear from the above that the Government must work closely with both tenants and landlords to resolve this issue, or face the prospect of millions of households being unable to operate EVs.

9. What else is required to help ensure that the EV charging sector develops in a way that is responsive to consumer needs?

Electrical Safety First believes that educating consumers on the importance of correct and safe charging of EVs should be a high priority. If less safe, temporary charging arrangements are tolerated then they will quickly become permanent and treated with complacency.

This could be achieved through advertising campaigns and the distribution of literature. As an example, Electrical Safety First has published a "glovebox guide" for EV users to help them become acquainted with the new safety aspects of their vehicles³. The Government must also promote the use of registered professional electricians to perform the installations. Such jobs are already notifiable under Part P of the Building Regulations in most cases in England and Wales, so it must be ensured that installations are being performed correctly and safely to guard against future safety and legal issues which may arise.

² <https://www.ons.gov.uk/economy/inflationandpriceindices/articles/ukprivaterentedsector/2018>

³ <https://www.electricalsafetyfirst.org.uk/media/2037/glovebox-guide-to-evs-esf.pdf>