



Words: Dominika Fleszar
Images: Lawrence Richards

Powering London's streets

Increasing the number of electric vehicles on our roads is one of the key weapons in fighting global carbon emissions, but many cities still lack the necessary infrastructure to make it a reality. A team of Master's students explored innovative ways of making charging points more readily available

In November 2019, after visiting the producer of a new plug-in taxi, the London Electric Vehicle Company, Prime Minister Boris Johnson promised to invest in the UK's electric car charging network. According to his words, the maximum distance between charging points for electric vehicles in England and Wales should not exceed 30 miles. This, amongst other things, was part of the spending plans to enhance the country's economic development after Brexit. There was also a promise to increase the amount of electricity generated from offshore wind from 30GW to 40GW by 2030, helping green vehicles to become more efficient.

Even more ambitiously, in February the following year, the Prime Minister announced a plan to ban sales of gasoline and diesel-powered cars in the UK by 2035. This move is part of

a worldwide trend: France hopes to prohibit conventional car sales by 2040, Norway by 2025 and cities like Paris, Athens, Madrid and Mexico City are aiming to sanction diesel vehicles by 2025. So what does one need when already in possession of an electric vehicle? Well, a charger.

The British landscape is changing rapidly to accommodate these needs. Companies such as Ionity, a joint-venture between Daimler, BMW, Ford and the Volkswagen Group, are launching numerous new sites. Each will contain multiple chargers, with charging time of about 20 minutes and using solely renewable energy. BP Chargemaster, a fusion of petrol stations and existing networks of charging points, is set to install 400 new rapid points by 2021. Tesco and Volkswagen are about to launch 2,400 new chargers located at or by the retailer's stores, with

some of them free to use.

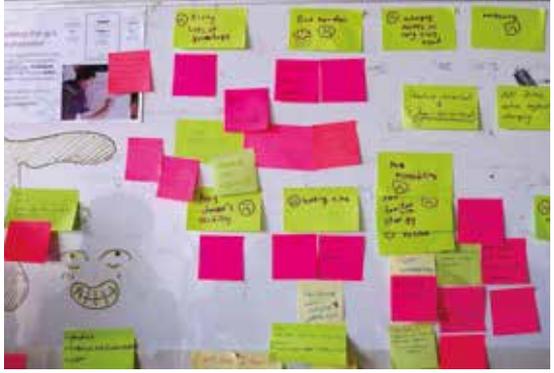
Enter char.gy.

The brainchild of London-based service design agency Unboxed, char.gy is creating “simple, sustainable, on-street charging for everyone”.

“The last four years have seen a surge in demand for electric vehicles in the UK, with the demand due to drastically continue increasing over the next few years. With nowhere to easily charge an electric vehicle in a residential street, how can this uptake be supported by limited infrastructure? This is the problem we’re working with Unboxed to overcome,” said Chris McDowell, char.gy’s Chief Product Officer, as quoted on the website. Catering mainly to drivers who do not have access to off-street parking (who, in London, make up a staggering 78% of households), char.gy’s vision is that every lamppost also becomes a charging point.

In 2019, Unboxed collaborated with LCC students on the further development of char.gy. The students were drawn from MA Service Design. Under the guidance of Lawrence Richards, one of the designers involved in the project, students worked in diverse teams, conducting research and developing prototypes based on the challenges faced by the product.

Collaborations between electric vehicle companies and university students are becoming more and more popular. Back in 2016, Anne Lusk, a Harvard research scientist in the Department



of Nutrition, and Henry Bonges, a former Master's degree student at Harvard Extension School, published a paper highlighting a series of recommendations that they believe will ease the fear of being unable to power-up when needed. In 2018, Uppsala University, Sweden, was even looking for a candidate to participate in a doctoral project that would explore the benefits of implementing electric vehicle smart charging in the urban setting.

Richards graduated from LCC a few years back, and therefore shares a common experience with the students who worked towards the development of char.gy. He was involved with them before, whether it was to celebrate Christmas together or coming in for talks and conferences. For this one-off collaboration, he organised a series of workshops where students learned some of the techniques that could be useful. They also received professional feedback, and got the chance to understand the reality of working with a real-life client.

"I think there's a good amount of balance that you can get at the University from doing some speculative projects and some kind of real-world projects," says Richards. According to him, char.gy is interesting because it comprises both a product design element, and an interaction design component. "And there's obviously a service element part of it because, well, it's a service – you plug your car into it and charge your car," he adds.

The project also enhances behavioral change: as electric cars are still fairly new on the market, the concept of electric charging remains quite foreign to most car owners. As Richards puts it, it's like "trying to get people to understand what it is, how it works, and the benefits of it too".

Eight weeks was quite a short period of time for the students to properly develop their ideas. This time constraint was one of the main difficulties they had to face. "This turned out to be our biggest learning. Over the course of the project, we created many unique tools for our team to save time and to share understanding quickly," said one of the participants, Jesse Lei, as quoted on Lawrence Richards' blog post.

While doing extended bits of research and testing different things out represented a good opportunity for students to grasp practical knowledge in the design landscape, their contribution to the project clearly benefited the



"Over the course of the project, we created many unique tools for our team to save time and to share understanding quickly"

company: "The interaction took a lot of time and it wasn't as simple or intuitive as other services that are out there, and student input made this journey a little bit easier," explains Richards.

Another participant, Jennifer Glasser, recalls that "our teammate rented an EV car and went through the entire journey of planning, locating and using a Char.gy lamppost charger. Despite the fact that she was not an EV user and had never charged an EV car before, she was able to empathise as a 'new user' and from this point, we could better understand the frustrations and confusion that a new user would encounter."

Although looking into the future and being speculative can be highly beneficial, in a start-up with limited funding, one needs quick, practical solutions. On the other hand, working with a diverse team offers lots of different perspectives, which in turn helps coming up with innovative solutions that make you challenge the status quo. Interestingly, Richards underlined the importance of diversity in technological aspects of design – some countries are often more technologically advanced and some materials might not be available in Europe. Even if the ideas never get implemented, it is still worthwhile to try.

"It's interesting to know what the future holds and what might be the next iteration of that feature," Richards concludes. ●