Wicked Problems – Series 3, Episode 14:

Dr Chris Pateman-Jones of ConnectedKerb

Transcript

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Note: The text in this transcript has been partially modified to remove duplicated words that are natural in speech, but which interrupt the flow when reading. No changes have been made that would change the meaning of the text per se. Where a timecode isn't followed by a name, the previously named person is attributable.

Foreword to Transcript

We recorded this episode on 12 March 2025, as the ZEV Mandate consultation launched by the Labour government last year was still underway. From 13:30 to 17:00 minutes, Dr Pateman-Jones and myself chat about the ZEV Mandate, and, given the consultation hadn't completed yet, we speculate about the forthcoming changes. The outcome of the Government response broadly aligned with the direction of maintaining ZEV targets that Dr Pateman-Jones advocated for in the episode. Now it's on to the next phase and, having spoken with Dr Pateman-Jones, I can confirm his hope is that the promised incentives package to help adoption will be forthcoming. You can find the full outcome of the ZEV Mandate consultation on the UK Government website, here:

https://www.gov.uk/government/consultations/phasing-out-sales-of-new-petrol-and-diesel-cars-from-2030-and-supporting-the-zev-transition/outcome/phasing-out-sales-of-new-petrol-and-diesel-cars-from-2030-and-supporting-the-zev-transition-summary-of-responses-and-joint-government-response

Transcript

Toby Corballis (00:09)

Welcome to another episode of the Wicked Problems podcast, where we tackle the biggest challenges of our time with the experts working to solve them. Today, we continue to dive into the world of EV charging infrastructure, one of the biggest enablers of the transition to electric mobility. Joining me in this episode is Chris Pateman-Jones, CEO of Connected Kerb, one of the fastest growing public charging networks in the UK. Connected Kern is focused on making EV charging infrastructure equitable, reliable and accessible, particularly for drivers who don't have the luxury of charging at home. In this conversation, Chris shares how Connected Kerb is addressing key challenges in the sector, from land access and planning permissions to grid constraints and investment uncertainty. We discuss the role of government policy, the importance of long-term stability for investors, and how AI-driven data solutions are helping predict demand and optimise charging networks. We also explore the future of EV charging from smart charging technology that balances grid demand to modular infrastructure that allows for scalable expansion with minimal disruption. And of course, we talk about what it takes to build a charging network that truly meets the needs of all drivers, not just those with driveways. If you're curious about the future of EV infrastructure, how we solve the challenges of equitable access and the role of technology in making charging smarter and more affordable, don't miss this episode. So let's get started. Here's my conversation with Chris Pateman-Jones from Connected Kerb.

Welcome Chris. Great to have you here on Wicked Problems. Very excited to talk to you about Connected Kerb and everything that you're doing in the marketplace or in the EV marketplace, I should say, tell me a little bit about yourself and the company.

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Dr Chris Pateman-Jones (01:57)

Yeah, thank you very much for having me. So very exciting to be on here. I'm an infrastructure guy through and through. I started my career a long time ago at Bechtel building big infrastructure projects and moved across to Ernst & Young and then was fortunate enough to be invited to come across and join Connected Kerb. It's a business I was really excited about right from the start when we joined and we had a polystyrene model of a charging point and we've built ourselves to now become the second largest charging network in the UK, which is something I know that I'm very proud of and the whole team is very proud of here.

Toby Corballis (02:25)

What I wanted to ask you actually; I'm going to start with a couple of questions. So, the first one is how crucial is it to ensure that the EV charging is accessible and reliable to all EV drivers, not just those in maybe one part or the other, but how does your company, what role does your company play in addressing that as a challenge?

Dr Chris Pateman-Jones (02:49)

Yeah, I think that is the fundamental question for us. It's the question that really drove the start of the business. We came into this recognising that if you're environmentalists as we are, you really need these green transitions to be transitions that impact the whole of society. And when we came into the market, that certainly wasn't the case. It still really isn't the case today. If you have a driveway and you have the ability to charge your car on your drive, you're far, far, far more likely to be adopting and switching to an EV today than you are if you have to park on street. And so, to set up the business, we were really all about trying to make it as equal as possible across society for people with driveways / without. I guess that has deeper reasons behind that as well. It's not only about having the societal transition broadly, but it's also recognising that at a high level, people who park on street tend to be poorer than those who have driveways, and they tend to also live in more dense urban

populations. And it's in those dense areas where you have poorest air quality as well. And therefore, the benefits of driving an EV would be greatest. So it's the thing that's driven us to try and set up a business. And what we're trying to do as a business is to deploy as much public on-street and in-carpark charging solutions as we possibly can. We talk a lot about; we sort of started with this questioning why it was that people who had a driveway were more likely to be accessing and switching to an EV. And we came up with it was essentially down to the convenience, the affordability and reliability that you get in those locations. And for the whole premise of Connected Kerb was we're trying to provide that same convenience and affordability and reliability in an on-street or carpark setting that you would get in your home. So, we essentially believe that we are a home charging business for people who can't really home charge.

Toby Corballis (04:29)

So, you're trying to address some of the challenges or for particularly those people who don't have a driveway are experiencing. There's a lot of challenges that the sector has seen actually. You're trying to address those challenges that we just spoke about. You've got all sorts of issues like it's not outside my house; it's maybe more expensive because of different VAT pricing. What do you see as the biggest challenges facing that expansion of what is essentially public EV charging infrastructure within the UK? So, I mentioned a couple there, but there are others. I can think of. Things like, you know, land access, grid constraints, planning permission, the ability just to find somewhere to put your chargers. What are the big challenges that you're seeing and how do you address them?

Dr Chris Pateman-Jones (05:16)

A great question. There is not one answer to that. So first off, though, I'd start with a positive. So, I think there's some great work taking place across the whole industry to deploy charging points at a faster pace than ever before. Indeed, the National Audit Office and the Infrastructure Commission put EV charging as one of the only real bright spots in terms of the green infrastructure revolution and believes that we're ahead of

the curve in terms of what is actually required. I think it's also relevant to say that infrastructure is actually now being deployed at such a great rate that you're not seeing utilisation of charging points growing in the same way that we maybe expected because you're not necessarily seeing EV adoption picking up at the same speed. Fortunately, we're now also starting to see some really positive stuff coming out of the SMMT in terms of EV adoption curves as well. So, we're hitting 25% consistently now, which is really nice. And so, we can all have confidence about that. So that's the positive side. The challenges? For the type of infrastructure we deploy, whilst we do deploy rapid charging points, we're predominantly known for our fast-charging points. So that's seven and 22 kilowatt charging points on streets and in carparks and workplaces, places like that, as well as we do do those rapids, but that's where we're predominantly known for. So, for us, because of the locations we deploy, we are restricted by the speed that government and local government come out and procure. So, you can't just go and as much as I would love to be able to go onto your street and just go and dig up the street, I have to have permission. Rightly so. So, rely on procurement processes to take place. And there's been a huge amount of delays to those in the last few years. So, the LEVI program, whilst now beginning to really get going, has been delayed for a couple of years and so you've seen a slowdown in what could have been delivered by organisations like Connected Kerb in deploying charging points. we've been... We've done a really good job, I think, as a business. We've deployed about 3,000 plus charging points last year. This year, we could deploy about 6,000 charging points. So, we're doing a little bit, and the faster we see procurements coming out and giving us that ability to go and deploy, the faster we will go and do it. I think the other part, and I touched on this a minute ago when we talked about positivity in the industry as well, is you've got to also try and get the balance right. So, this is largely being funded by the private sector. The private sector needs to get a return on investment and so it's not about deploying the infrastructure you need for 2040 or 2050 today, it's about deploying infrastructure that is slightly ahead of the curve of what demand is, but not too far ahead to the point where businesses go out of business because they're not generating a return on the investment they make. The key is

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phasing it, getting it there that gives those people confidence to do that. The way that we try and do that ourselves is we talk about active and passive infrastructure. So, if I was to come onto your street today, Toby, and deploy charging points, I might deploy enough charging points to deploy maybe five to 10 in future, but today I might only be deploying three or four charging points and then they would simply be empty nodes underneath the ground with the connection points that you can quickly activate them in future. But you're only actually putting the active charging points in that meet slightly ahead of where your demand is today. The key part to being able to do that is you have to have real data and understanding of what likely future demand is going to be. And that's really where we've heavily invested as a business into the AI solutions that we have to try and help us to forecast demand, but also where we go and deploy charging points.

Toby Corballis (08:36)

I think that's really interesting. So you're putting nodes in the ground that people can't necessarily see, but that allows you in future to be able to activate those nodes and account for potentially future growth in the marketplace.

Dr Chris Pateman-Jones (08:48)

Exactly. Our charging points we're known for, I mean, our charging points are manufactured, we design them ourselves and we manufacture them here in the UK. They're quite different from what you see elsewhere in that they are modular in design so the only piece of kit you see above the ground is the socket and the connection point for the user. So, the RFID card or the contactless payment reader, that's what you see above the ground on a post. The charging point actually sits underneath the ground in a structural node box. Now essentially, what we would do if we go into the street, we'd put some active charging points where the whole of that is in place. But then you would put the ducting and the empty node along for additional charging points to be added. So that essentially you just pull the cable and add the charging points in. It's a couple of hours to go and activate those sites with no further digging in place. And that

has the benefit that it means that local residents don't have to have parking bays removed for demand that doesn't exist today. But it also gives people confidence the charging points are there and essentially, if you've got two charging points on the street and you have a whole lot of people using them, you can then quickly go and add those charging points at a later date, so it reduces the exposure for us and investors of deploying assets that aren't going to get used, but it also gives you a quicker way to then expand the network in future.

Toby Corballis (10:01)

That's really interesting because I mean, there was a report out this morning in various newspapers and it was talking about how the infrastructure is not quite there yet. And part of that report was about how do we keep up with the growth of demand over time? There were other things in there as well. And I'd just be interested to get some of your take on that. That was things like they were mentioning, and by the way, today for anyone watching or listening is 12th of March, 2025… that report was also saying things like, well, there's a sort of tilt where there's more infrastructure in the Southeast and not enough in the North, or there's not enough energy upgrades on major arterial roads to be able to support the implementation of additional charge points. I just wondered if you had any thoughts on that as well, whether that fed into what you were saying as well.

Dr Chris Pateman-Jones (10:51)

Yes, I haven't seen that report, I think there's a few points. Again, I'd come back to the positive in terms of the sheer number of charging points that are going in. Particularly, I experience this when I drive on the arterial routes. There are so many ultra rapid charging points now at motorway service stations, it's just totally different from what it was even 12 months ago. So, there's massive progress on that, I think. Yeah, there are more charging points in the southeast of the UK. There's also a lot of people that live in the southeast of the UK. There's maybe a reason for some of that. But I think the main reason for why that has happened is that London in particular, and a number of the

counties around it, have been really forward looking in terms of getting those procurements in place. They've been slightly ahead of the curve in terms of getting the procurements that allow charging points to go and to be deployed. I think where the government can be commended is now finally getting the LEVI program operational means that there are now procurements taking place across the length and breadth of the United Kingdom to get charging points in the ground. And really positively, most of those procurements have set targets around the number of charging points that need to be deployed. So whilst you've seen a, I think, a transformation in the public network in the last 18, 24 months, you are going to see even more over the next 18, 24 months as LEVI starts to deploy tens of thousands of public charging points, predominantly in the on-street residential and car parking space, because I think then that also reduces the pressure that is on arterial route charging because if you know there's going to be a charging point when you get to your destination, which is the Nirvana situation, where whichever street you go and park your car on within a two, three minute walk or a five minute walk, we typically say, so a couple of hundred meters, you are going to be able to find a charging point. If you get to that scenario, you're not going to need to charge on arterial routes unless you're doing extremely long journeys. Those will always be very, very important charging solutions, but we can see today from the way that people charge when they're able to charge at home on their drive, that that is the preferred way that people will want to charge, so it's the most convenient, it's the most affordable, it's the most reliable charging solution that's out there in terms of the numbers that you can find.

Toby Corballis (13:00)

So, we touched on government there a little bit and the stability, long-term commitment of government policy is really crucial for investment. You talked about private investors earlier. They need to have that kind of stability there, I think, if they want to feel confident in their investments. Your thoughts on the current sort of policy landscape in that respect and what changes might you like to see around that?

Dr Chris Pateman-Jones (13:31)

I mean, when you asked about expansion earlier on, the part I didn't talk about was that regulator uncertainty. That gives people confidence to invest. So, most of our contracts are long-term contracts because this is an infrastructure proposition. Now, the term that you need those contracts to extend for is largely determined by the trajectory that you're forecasting in terms of EV adoption, so if you were to suddenly move the targets from 2035 to 2050, then you'd have a problem in terms of the likely forecast utilisation of your charging network, so that's where there's a direct linkage between the regulation and what we're then forecasting, and, therefore, we can be making in terms of investments. I'd say at the moment, the ZEV mandate is a good mandate, is a strong mandate that is driving behaviours. I think that's why you're probably seeing some of the noise around it at the moment, because it is forcing change, and change always creates a bit of noise. What I would say it is having a positive impact. So, you can see that in terms of EV adoption numbers. You can see that in terms of the changes in behaviour of some of the automotive manufacturers. So, I think it is a really positive thing, so I don't want to see changes to the ZEV mandate. I think you would probably be surprised, Toby, if I'd come on here and said, yes, I'd love to see it all softened. I would like to see it stick. But what I do think we should be doing more of, because I think targets are only one part of it, this is a heart and mind thing, right? So, you've got to really convince and explain to people why they should be making the switch. I think it's very easy for someone in my position to forget that I live this every single day and so it's something that I have the privilege of understanding pretty well. I understand the downsides and the upsides of it so I'm fairly fanatical about it. My family have lived with me as a fanatic, but they're still probably maybe 18 months behind where the market actually is and yet they live with me. So, the rest of people who don't have that benefit, or maybe a negative of having to live with someone like me, they don't have that information so we need to find some way of getting it across to them really quickly and clearly. So, I think the government has a role to play in that in terms of trying to drive incentives, rather than incentives

and positive messaging. So, if you remember from the last administration, the actual changes that Rishi Sunak made were not a big issue. The fact that he made the messaging was completely wrong around those changes was the damaging part. It really, really damaged consumer confidence. I'd say we're still only now recovering from that. So, what I would like to make sure is that the government stays consistent on: this is happening, this is a positive change. And then we back that up with incentives and other different things. I think if you do, my worry is if you do anything to soften the ZEV, then all you end up doing is you negate any incentives that you bring in so they net each other out. Whereas what I think you should be doing is sticking to the targets that we've got. They are recognised around the world as being pretty bold and I think that offers an opportunity to the UK to lead. And then if you match that with incentives as well, that get people quickly into it, I think the targets are actually very achievable. I think actually, if you do that, you won't overachieve in the near term, but in the longer term, you'll end up overachieving the targets if you really try and drive, you get the momentum moving and then I think by 2030 you'll be over exceeding the targets.

Toby Corballis (16:54)

You talked about, you don't want to see the ZEV mandate weakened. And we're also talking about comms really sort of, you know, messaging out to the public. And I feel like you would think that, and many would agree that if you weaken the ZEV mandate, that is in itself a sort of negative communication, keeping it in place and maybe strengthening it actually reinforces the positive messaging around, you know, the direction of travel, if I can put it that way. Yeah. Another thing you mentioned was that it's an infrastructure business, which I totally get and understand, although I would probably say there's another element to it, which is also the software and the, and that, and we'll maybe come onto that in a minute. But if we just stick with the infrastructure side of things at the moment, there's a lot of people worried about the impact that EV driving has on critical national infrastructure, such as the Grid and I wondered if we could just explore that for a minute, because I think, you know, I can understand why

people would think that, right? They think they're going to plug a whole load of cars into the grid, you're drawing a whole load of energy off, but it's not quite like that, is it?

Dr Chris Pateman-Jones (18:05)

That's a great link across into the software side. So, yeah, we're an infrastructure business in the sense that we're trying to deploy charging points that last a really long time. When I mentioned that purely is, if you contract for a five-year contract, you're not going to get long term kit being deployed. You need to contract over longer periods of time and incentivise and think of this in infrastructure and then you'll get long life bits of kit stuck into the ground. And we all want that because if you're having to replace charging points all the time, it will drive up the cost of charging for users plugging into it because you have to recover that cost of replacement all the time, so you want stuff that is long life, easy to maintain, really durable. And so that's the sort of the infrastructure mindset. You wouldn't be replacing the Dartford crossing every couple of years, right? You want stuff to last for long time and we should think about this in the same way. Same as lampposts, same as cables in the ground, all those sort of things. You can't dig the street up all the time. And then equally, when something does fail, you want to be able to replace it really, really easily and hence the modularity of what we try to build. Your point on power in the grid is where, again, one of the starting points for us as a business. So, we always knew that we were going to have to invest heavily into the software side and the technology that we use to manage our network. But we also see EV as a massive opportunity not to be a constraint or a strain on the grid, but to be an active supporter of the grid. If you move to a scenario where everything is charged as quickly as it possibly can be, which is not a scenario we're going to, but I'm just sort of being extreme, then when you turn up at that charging point, you expect to be able to charge your car as quickly as you possibly can. You don't care what's happening to the wider grid system. That is where you would in future potentially have a challenge for the wider grid. If you instead think about it in the way that people charge their cars at home, they plug their car in, and their car charges when power is most, depending on whether or not they're on one of the smart tariffs, if

they're on one of the smart tariffs, then they're able to schedule their charging to take advantage of when power is cheapest. Power is coincidentally cheapest when it's most abundant and available. Essentially, again, thinking of ourselves as a home charging business for people who can't home charge, we're bringing the exact same thing to public charging, essentially. Well, last year we launched smart charging across the UK. This year we'll be doing plunge pricing and a whole load of other different things where essentially our network is able to take advantage of when power is abundant in the grid, suck that power into the network, and deliver it to users because most people are plugging into our charging network for longer than the time that they actually need to charge their car, so if they're plugging in overnight – say they get home at 6 p.m., they plug in, they pick their car up at 7, between 7 and 9 a.m. the following morning – we don't need the full duration of that to charge their car. That offers a massive opportunity for us to delay or to schedule charging, again, to be sucking that power in when it's abundant, either because it's windy or sunny, unlikely overnight, but certainly windy, or even where there's just less demand for the base load, and therefore we can put that into cars at a much cheaper price. And similarly, during the day where it is sunny or windy, we can then be dropping the price further to get people into charging. And we can do that without the person doing anything other than saying, Connected Kerb, I would like you to smart charge my car. And therefore, we can offer that saving. So, to the point I mentioned earlier on about the convenience, affordability and reliability, that's where the affordability piece comes in. We don't do anything about the government maintaining a 20% VAT threshold. What we can do is optimise power price to try and reduce the cost for users in the way that you do already, largely if you home charge on your driveway. It's that equity point. How do you bring that forward? But also, so your starting question, how you deliver a charging network that supports rather than strains the grid, that's the key thing.

Toby Corballis (21:54)

What you've talked about there is a benefit to the customer, right? Because they can flex the pricing, if you will, because they can say to you, hey Chris, give me a smart

charging tariff that you have, because I'm going to leave my car connected to your charger overnight or whatever it is. And then equally that allows the balancing of the grid to be balanced for want of a better word, more easily because you're not drawing down everything all at once.

Dr Chris Pateman-Jones (22:24)

If I might just say on that, when we speak a lot to the Grid, the Grid is very rarely ever telling us they need us to give them power. So, there's a lot of conversation about bi-directional charging. It's really, really, really interesting, but we're not hearing that message from the Grid that they need us to give them power. What we hear consistently from the Grid is that they'd like us to stop taking power at points when they're really constrained. So that is the real opportunity. And then equally, something that most members of the public don't know is that essentially, we're paying at the moment to not take renewable power some days when it's extremely tiny. So, the grid doesn't have the demand for that power that's coming in. EV, if it is charged well, and if you do this in a network effect, has the opportunity to be sucking that power in at times when there's no demand for it, to be taking that at very, very low prices. So, there's a real opportunity of sucking more renewable into the system if you run this really, really well. And that's what gets me really excited.

Toby Corballis (23:22)

I didn't, I didn't appreciate that. So that is a really nice nugget of information. Thank you. So, so I mean, that's, that's talking about the grid. I wanted to move if we can into talking about sort of software and technology, you mentioned that, you know, you use AI to do some of your planning at the beginning, but the planning is one thing and it's a good thing and you need to do it. But you've also got that software and data and technology that helps to improve a user experience. And what's the tools and mechanisms that you're using and frameworks maybe that you're using to ensure that, you know, the customer is getting that experience that they need from their charging experience rather than just, I mean, I know the whole thing soup-to-nuts as part of the

charging experience, but I'm just thinking about that stuff that's visible. Maybe it's the app. Maybe it's also the, you know, something on the charger. Maybe you could give us some insights into that. And also the services that you deliver helping to inform you about, know, what are the products and features that your customers really want?

Dr Chris Pateman-Jones (24:24)

Absolutely. yeah, I mean, I can't not touch on the site planning piece because from a user experience perspective, when we talk about that convenience aspect, we want people to be within a five-minute walk of their charging points. And so, when we use that AI, we talk a lot about saturation. So, when we map an area, we can't walk every single street in the county, but what we can do is get an AI program to do that in a few minutes. We can identify where the sites go based on the density of the population, a whole load of other different things, commuting distances, all that sort of stuff. And that then helps us to deliver on that convenience piece. That's a really, really, really, really important part, so that the automated site analytics platform or ASAP as we call it internally is a really, really important part of delivering on that convenience piece, which as you've already said is a big part of that consumer experience. You then sort of get into the convenience of how they go about using it. And we spent, I think, more than six months last year working with existing customers to try and understand what they loved about the apps that were out in the market and what they didn't really like about them as we were building our own one. So, we have built our own system internally, the Connected Kerb app, which users can use. And we've tried to make that as simple a process as possible, both in terms of how they quickly can identify a charging point and click through to starting a charge, but also how they can then activate smart charging within it. So, we've spent a lot of time building that. We obviously work with roaming partners as well, so you don't have to download the Connected Kerb app, although we would encourage you to – you'll probably get the best prices through doing that. But that's the sort of app side that's supported by our call centre. We're very, very, very proud of the feedback that we get on that and the escalation processes that we have that then feed through to members of the Connected Kerb team that can

go and fix things. But the call centre is also that the customer support is also supported by technology within the business. So we have an AI system that is roaming all the time, trying to identify where problems are occurring and rebooting charging points, but also where a reboot simply isn't going to work, then actually is ticketing to our O&M [Operations and Maintenance] team who are then able to go out and fix it, but also pre-populating and trying to help guide anyone who's answering the calls as to what the issue may have happened for most of the consumers when they're calling. We're trying to use AI across the organisation because it helps us to be more efficient, but also to reduce cost again for the users so we can keep our tariffs as competitive as they are.

Toby Corballis (26:54)

One of the areas of frustration that customers often have is, you know, I couldn't get the thing to start charging or it was down. I couldn't get through to somebody in a call centre or, you know, something just wasn't very clear to me and there was no one there to help me. And I'm not suggesting for a moment that's the situation with Connected Kerb. It sounds like it very much isn't – that you're, that you're kind of on that. And what I liked in what you said there is about the, when you think about the reliability, you know, the fact is, doesn't matter who you are, you're going to, if you, if you have hardware, sometimes there's going to be something that fails in that hardware. It's just a factor of hardware being able to do that sort of self-healing that you were talking about there, which is, you know, sending a command, maybe to reboot it, understanding, I mean, if you're using AI, assume you're doing things like looking for patterns that regularly happen. So, if you see this thing happening, maybe the unit hasn't gone down yet, but it's an indicator that it may be will. Do you use a lot of things like, do you think about leading indicators? And if so, which leading indicators would you use to proactively detect and resolve reliability issues so that they don't impact drivers ahead of time?

Dr Chris Pateman-Jones (28:02)

Yeah, so first off, say we're by no means perfect. You are right that stuff does go wrong, and we are doing our best to try and fix things, but there are always issues when you're running a network of our size and scale. One of the things that we always have, which is a big benefit, is we don't ever tend to just deploy one charging point on its own. So, they are typically deployed as clusters so when they're on a street, there will be two to six sockets typically on the street. So, if one of the sockets is down, the user is still able to normally go and get it. That's actually also how we prioritise and categorise where our teams are out, going and fixing. So, if, for example, a whole site is down, that would have a higher priority in terms of the fix than a charging site where you've got six sockets and one of the sockets is down. You can triage and prioritise those. And equally, when a customer calls up, if they have had a problem with the charging point, typically, again, because of the way we try and deploy, where we're trying to get an, almost, an overlay network across an area, you can divert them to another charging point typically pretty close to where they are. Not necessarily there in all of those situations at the moment, but certainly when you look at our county-wide deployments, that's where we're getting to so that in any location, in any direction, you should be a few hundred meters away from a bank of charging points. That's the sort of Nirvana we're trying to get to. I suppose when you look at the leading indicators, without going into the specifics, because there's an element of sensitivity around that, as you can probably imagine, we're looking at. There are software issues, there are communications issues, and there are hardware issues. So, we're tending to try and look at those and the fix of those. Obviously if they're software issues, then reboots are pretty easy. If they're communications issues, then we've tried to build the charging points that they will, they don't go offline. If it goes out of comms, it will continue to charge so the customer experience remains the same. So, we're trying to deal with things in that way. And then if there are hardware issues, then that's something that's dealt with by our operation and maintenance team as quickly as we can. And we measure ourselves on how quickly we're going and repairing sites, and

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that's certainly an area that I'm trying to push the team to improve as much as they possibly can this year. And that's all automated ticketing. So, our AI engine does that for us. It will ticket, and then we human verification after that.... goes and tries to fix it. I think that we're really proud of is... unfortunately, if go around the UK, you can find charging graveyards of kit that's just been pulled out of the ground and then essentially it's dumped because they are completely integrated systems so repairing them just doesn't make sense. Our system is fully modular so when our teams do go to site, they're not picking it out and dumping it. It gets picked out and then it goes back to the factory to be reworked and then goes back out to site so we rework our charging points. So from an environmental perspective, that's something we're very, very proud of and something that we're picking up. We have a big program this year where we're going and upgrading about thousand sockets this year to be upgraded into the latest versions of what we have. so again, customer experience should be improved. Importantly on that, again, from a, not necessarily from a leading indicator perspective, but that's a time intensive thing to go and do, but it's also an opportunity to then reengage with consumers and residents on those locations to again... to the starting point I think of our conversation of how do you then get people to feel confident that they can switch to an EV quickly. So, every time we're visiting site, my view is we should be going and trying to engage with those residents in that local area to remind them of the fact that charging points are there, to remind them of the reliability of them and the convenience that they can expect when they go and make that switch.

Toby Corballis (31:43)

That modularisation, I think, is really cool because presumably it also means, you know, you can take that modular piece out. It needs – can, the engineer can say, well, I can't fix this now – it needs to go back to the factory, but I've got one here and I can just slot that in, and so that one that goes back to the factory can be repurposed somewhere else. It doesn't have to be going back to the site it came from.

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Dr Chris Pateman-Jones (32:05)

Absolutely, that was the theory behind it. The founding team of the organisation had worked on a number of infrastructure projects and so we have an understanding of you want to try and make that operational maintenance side of it as easy as possible because you're ultimately doing that on the roadside. So, you want to try and do it as quickly as possible to minimise disruption as far as you can and make it as sort of click and connect as easy as you possibly can.

Toby Corballis (32:33)

If you indulge me just for a minute more, just have one or two small questions to go over if that's all right. And one of them that I think is interesting to me, and I think would be interesting to people listening or watching, we talked about a lot of different challenges that the sector has faced over the years. know, everything from perceptions to infrastructure to whatever. I've noticed Connected Kerb has seen quite remarkable growth. You moved from sixth, I think it was, into second place in terms of being the largest public network in the UK in the last two years. What do you credit as being the success for that expansion in that time frame, given that there's all these challenges out there in the sector itself?

Dr Chris Pateman-Jones (33:20)

Yeah, well, thank you for that question. That's a nice one to get. Ultimately, it comes down to we have a fantastic team of people that are here that think very deeply about the problems that we face. So, the thing I'm probably most proud of is the team that we've managed to assemble here. It was a great starting point for the business in terms of the problem that we were trying to solve. And we were also quite fortunate, I think, with the timing that the business was set up. We had great success right at the start, and then everything went quiet for quite a long time in the build-up to COVID and during COVID and that gave us even more time to think deeply about the problem we were trying to fix; hence the reason you have the modularity, hence the reason we've

been first to market with smart charging and all those other different things. But I think that also meant that as we came out of COVID, and it was sort of time of COP26 and all those sort of things going on, we were ready and raring to go for the small number of large tenders that came out before there was essentially the pause in tenders. It was an 18-month period where were basically no tenders coming out at all. We're now coming out of that. Before that, we won some pretty big contracts and my team have then proven over the last 18, 24 months that we have the capability to go and deploy at scale, so I think it's a case of timing, but more importantly than that, building a fantastic team that's allowed us to go and do it and to think really deeply about the problem. We're also, as I've mentioned, a UK built business and that gives us a lot of credit from those who we work with, they can see that we're trying to do things as well as to make money. So, we want to be a profitable organisation as soon as we possibly can, but we also are an ethically driven organisation so we are very focused on our environmental impact and we're very focused on how we work with the communities where we go and deploy. And I think that it's all of those things combined. It's not just one thing, but it's those things combined which have allowed us to sort of accelerate. But as you point out, we sort of grown at a factor of five to 10x of our competition in the last 24 months. And it's something the team are rightly very proud of.

Toby Corballis (35:21)

Congratulations on those numbers. think it's fantastic story. Sadly, we're coming to the end now and there's so many more things that we could discuss. I'm absolutely convinced that… You know I've got loads of questions going around in my head, but we don't have the time to discuss them here today. Maybe we get a chance to do that at some future point. It's been amazing to have you on. Thank you so much for taking the time to talk to me. I wish you only success for the future.

Dr Chris Pateman-Jones (35:47)

Thanks for having me, Toby.