Wicked Problems PODCAST

Wicked Problems – Series 3, Episode 2:

Sam Clarke of GRIDSERVE

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 interpretation of the text per se.

Transcript

0:09 Toby Corballis

Hello and welcome to this next episode of Wicked Problems where we are investigating more about the EV industry.

I'm joined today by Sam Clark, a lifelong entrepreneur, industry advisor, EV owner and driver, and a multiple Guinness World Record holder for EV driving.

He started his journey in 2002 with electric motorbikes and then founded A0 emission logistics firm called Newt, which he sold to Menzies back in 2017.

He's now working on national charging infrastructure needs for GRIDSERVE and in particular for electric freightway projects. So, that's large trucks that have large charging needs.

Sam is also a founding member and company director / shareholder of EV Café Limited, a popular webinar series that discusses all aspects of EV adoption on a regular weekly and monthly session. It has a number of high profile sectoral sponsors, including companies such as the a, a Europcar, Bridgestone web fleet and many others besides.

1:23 Toby Corballis

Welcome Sam. Thanks for joining us on Wicked Problems. It's a pleasure to have you here. I'm really looking forward to our chat.

1:29 Sam Clarke

Thank you for having me.

1:30 Toby Corballis

And I'm really excited to talk to you because I was looking at your bio the other day and I see not only are you, you know, Chief Vehicle Officer at GRIDSERVE, which is great, but you know, you had your, your own company, Gnewt, and you're also, is it two-times Guinness record holder, most distance travelled in a van and a car on a single charge. Is that right?

1:54 Sam Clarke

That's pretty much right, yeah.

1:55 Toby Corballis

So, tell me, how did you get into EV in the 1st place? Because it's obviously been a quite a journey.

2:00 Sam Clarke

It's pretty much my entire career, Toby, to be honest, I've, I've always been somewhat entrepreneurial by nature. I've now worked for GRIDSERVE – and that's the first job I've ever had, I'm 43 years old – so and I've only been there for four years. So yeah, always been entrepreneurial sort of bloke.

And I got into EV to answer your question directly based on spending a lot of time in China in 2001 and 2002 looking for new business opportunities, fundamentally. And I've said many times on interviews in the past that what quite literally nearly struck me was an electric scooter flying past when I was the idiot tourist that looked the wrong way when crossing the road. And I realised the prevalence of, of electrification in the conurbations in China, you know, twenty plus years ago and thinking, well, that's that makes; that has an environmental and innovative and somewhat engineering as well sort of attributes that really got my attention…. and then, and that's how I got into it and failed miserably, quite frankly, at the beginning because trying to import and develop and design electric vehicles, I focused on two wheels on scooters and motorbikes back in those days. It was incredibly tough actually, and still is to this day to a certain extent, but that's how I got into it: is the electrification of two wheels and scooters and motorbikes.

So I've been driving and riding electric vehicles in the UK now for 22 years and my first vehicle was an electric scooter.

3:15 Toby Corballis

Wow.

3:16 Sam Clarke

OK, or moped, I should say, probably moped because that gets confused that terminology. I want to say electric scooter. Of course, people think of the things that, you know, you stand, and you whizz with one leg, right. But actually it's an electric moped or motorbikes, I should probably say.

3:30 Toby Corballis

Yeah, Yeah, because that you're right. The diversification of electric propelled transport is, you know, it was at one point just cars or, you know, maybe a few bikes. But now it's yeah, it's so many more things, including those sort of scooters that you stand on and, and everything, right. So, I think you raised an interesting point back then. You said you failed quite a bit at the beginning. We do a lot of what we call business performance management consulting. But what we really – one of the things we stress to people is how important early failure is

because it teaches you so many valuable lessons on the path to success. Has that been your experience?

4:12 Sam Clarke

100% yes. Over the years, I have presented in various forums or been interviewed probably... well hundreds of times for sure and one of the most challenging things that I do is a lecture at my local, my kids local, school about once a year on entrepreneurialism and the challenges of it really, or rather the challenges of it is the bit that I add to the mix. And it's one of the hardest places I present because it's a, it's a load of 17 / 18-year-old kids and some of which are really interested in what you're talking about. Some of them, you know, are just waiting to go to lunch or whatever and then there's a group in the middle that, you know, they don't really know what they're expecting. And it's quite a hard audience.

And one of the things I, I often share with them is the failures and the challenges that happened in the early years of my career, because it's really important to the points you just made. Like no one's perfect. Everybody makes mistakes. You know, you do often hear of, you know, wonderful entrepreneurs that make millions and millions of pounds in a heartbeat. And then everything is wonderful. But you never hear of the stories of those that fail because that's not interesting. But there's an awful lot more of them and those failures are what sets you as a foundation for, for making mistakes. Everyone does it.

Here's the question: the key thing is to not do it again, right? And if possible.

So, I'm very open and always have been about the things that have gone wrong because I think, you know, to your point, they're just as valuable as the things that have gone right, if not more so in some ways, I suppose because you've had the experience so you know not to do that and if you've not had that failure, you might make a spectacular failure in the future because you haven't had that experience. So, I think it's, I think, you know, I just think it's really, really crucial.

5:45 Toby Corballis

Tell me about Gnewt and how that came about and what happened there.

5:49 Sam Clarke

Yeah, sure. Well, you know, moving on from the failure I suppose was – this was the attempt to import and develop electric motorbikes and scooters in 2003 – was a bit early to market, but what I didn't want to do is give up entirely. So, having made all of those mistakes, both, you know, from business points of view and also financially and start effectively needing to start again from scratch.

What we had done and what we had learned in that journey and taking positives and negatives is understanding how electric vehicles work and, and why they work and, and, and the methodology behind them and the environmental benefits and all the other bits and pieces that go with it, which are more commonplace now. I effectively started again with a new business partner, a new Angel investment and created this company called Gnewt, which was an acronym for Green NEW Transport and the logic was really taking that electric electrification knowledge and experience and turning it into a service. So, instead of trying to sell a product, we were trying to sell a service which was the last mile delivery solution in central London, which did quite well. Again, it was a lot of hard graft for many, many years, but there was a lot of sort of large companies.

Office Depot was my first client – one of the largest stationary companies in the world at the time – and they just wanted to be able to put on their CSR (Corporate Social Responsibility) that they were doing the right things in central London and trying to reduce emissions. And that's how that, that business was born really. It started with, with two wheel- and three-wheeled cargo cycles, moving freight around a bit like rickshaws, but with boxes on the back. And that's how we, that's how we started because there were literally no vans available in those days. We wanted electric vans, but there weren't any. The best thing we could find was a quadracycle, which looked a little bit like a van, but wasn't. But you've got to start somewhere, right? And that's how that, that came to be. And we built that business up from nothing to something and sold it eight years later and 10 years for my tenure, having delivered 10 million parcels in central London emission free, which was, you know, you know, quite a proud thing to be able to say and do, I suppose. And we upset a few people in the process.

We were very much a disruptor in terms of some of the big companies like the DPDs and Hermes, or Evry as they're now called, of this world, some of which were our customers, but some were not moving fast enough, and we made them move fast… I have a lovely message I got or a meeting I had a couple of years ago, after I sold the business, from one of the directors of DPD that said you were a thorn in our side and said "we were having monthly meetings about the overall, overall business of DPD and I had to say one, one day, why do we constantly talk about this little company called Gnewt in Central London? Like, how do we, what do we do with this? Do we buy them? Do we squash them? What do we do?" You know, and it's nice to hear that because it almost demonstrates that we were a disruptor and we forced perhaps some of the bigger companies to move more quickly in electrifying their fleet, which is also quite satisfying.

8:25 Toby Corballis

It's, it's interesting. I'll just pick up on a point you made there a little bit earlier. You talked about Office Depot's CSR statement. I'm not saying they were greenwashing – sometimes companies get accused of greenwashing with CSR statements – and, I suppose, even if a company is, to a degree, greenwashing, if they're actually holding true to the principles of the

CSR statement what's happening is it's still driving the right behaviours. And that seems, you know, evident in what you just said there as well.

8:52 Sam Clarke

Yeah, it is. And I don't believe that they were in those days, but I also agree with you that many were because we were there physically doing it, right? We were out on the streets every single day physically delivering parcels on electric vehicles in central London. So, it was there, albeit, you know, as a global company of that magnitude, the contribution we were creating in what in those days was the southeast corner of the City is not going to change the world. And obviously they would have messaged and marketed it highly, but as a proportion of the total volume being moved it was nothing, but it's a start-

9:24 Toby Corballis

But I think it's a start and also you say the proportion of the goods you're moving isn't going to change, you know, make a fundamental shift in things, but actually the messaging that they do off the back of that is also part of the fundamental shift, right? So, it's not just the volume of goods, it's also that messaging that's going out. So, I think it sounds like it was a good thing.

9:44 Sam Clarke

No, absolutely was, yeah.

9:46 Toby Corballis

Yeah, and I've got to ask about the about the Olympic events. What was the deal there? What were the vehicles and, and how did you do it? Where did you drive from and to on the Olympic records?

10:03 Sam Clarke

Oh, the Guinness World Records.

10:04 Toby Corballis

Yeah, sorry, I meant Guinness scratch “Olympic”, insert “Guinness”.

10:09 Sam Clarke

Yes, Yeah, it was definitely wasn't an Olympic record. I wish it was.

10:13 Sam Clarke

Yeah, so the Guinness World Records have come about in the last couple of years. A very good friend of mine in the industry called Kevin Booker, who works at Brecon Beacons in Wales, has already got several records of his own and I was over having a beer with him one night at another event that we were both involved in, and I said, I want one of those. I want one of those hanging on my wall. How do I go about it? And he said, well, we've got we've got to find something that that fits. And so, then, my first thought process with him was what vehicle configurations are up for grabs in terms of in terms of things we think we can beat? And one of them was the van record, which was already established in the States: electric van record for the longest journey on a single charge. So, we had a go at that a couple of years ago and we were able to beat the American record by some margin; I think it's about 50 miles with a vehicle with a battery half the size of the one that had the current record. And what that proved in many ways was A, that we're pretty good drivers, B, that it's not just about battery size and brute force and ignorance – it's also about efficiency and drive trains and how you use the vehicle. And so all of those things as a combination meant we were able to beat the record by some margin.

And then this summer just gone, we did the same thing in the in the car, although on this occasion it's a far more highly competitive record and we were able to beat that one by the most slender of margins. I think we made a... we got a Mustang Mach-E to travel 569.7 miles and beat the record by just over a mile. So, you can see, so it was a lot, lot tighter. But again, it proves the point, right. It proves efficiency and the ability to make these vehicles go further – a lot of that is actually just on your right foot and how those little millimetres whereby you move it when you go forward and backwards, you know, particularly forwards, you know, by managing that throttle, you'll be amazed what sort of distances you can get out of your vehicles. And that rate and what we're doing is just proving the point. No one's going to be able to do 569 miles in their Mustang Mach-E any day of the week. It's not, that's not real world, but what it does at least demonstrate is the capability of that vehicle when you do push it to the extremes and that's really what that narrative was intended to do for those two records. And I think we'll do a few more just to keep pushing that message. That's not to say everyone can do it. It's just to say this is what the art of the possible is and have some fun on the way as well.

12:30 Toby Corballis

But it also allows you to point at them and say to people who say, oh, you know, EVs can't go further than 10 miles, you know, whatever the ridiculous thing is. But actually, well, no, look, they can, OK, that's not real world because it's not going and getting the groceries every day or dropping the kids off or, you know, those short journeys that mean that car doesn't take as... doesn't have as good a range, but it's still possible, right? And therefore, you know, we can

blow some of those myths out of the water, which is another topic I wanted to talk to you about because I think everybody who's in this sector has come across myths in the EV world. There's a lot of misinformation about electric vehicles. You know, I was talking to Jordan Brompton recently about the Luton car park fire, and you know that we now know that was a diesel car, but at the time everyone was screaming it's an EV, right? And so, there's lots of these myths that perpetuate like cars bursting into fire every 10 miles or whatever it is. Do you come across a lot of these myths and, if so, how do you debunk them and what sort of things are you seeing prevalent at the moment?

13:36 Sam Clarke

Yes, the answer is yes, of course I have, I've been doing this for, for two decades. You're going to get them all. And some of them are more ridiculous than others. It's fuelled by, pun intended, by a lot of the media that like to put, you know, shocking headlines, you know, in order to, in order to sell papers. And when we get into the detail of it, we find that, as you say, the Luton fire, there was a, there was an example of a, of a car that got flooded last year and it was down. It was brand new electric vehicle got written off as a result of floodwater. It turns out it was a fifteen-year-old diesel hybrid with an electrical gearbox that failed and had nothing to do with electric vehicles whatsoever. But that doesn't matter, does it? Because the headline is all that people see and that's some of the we've got to try and fight this misinformation and just Fact Check as much as we can to push back on some of that stuff. Having said all of that, you know there are still many, many challenges out there that are true. You know, we've got to make sure that the way in which these batteries are made is environmentally friendly. We've got to get the cost of public charging down. We've got to get the cost of the capital expenditure of the vehicles down. There are lots of things that still need to be addressed. And there are, there are, you know, it's by no means plain sailing either. But you know, I guess in a, in a nascent market that it still is, and the fact that there's big oil companies in the background that don't want this change very quickly, and they want to slow it down as much as possible, which is where all the greenwashing is ultimately coming from. We're fighting a battle against some pretty big institutions that have their ears and eyes and lobbying abilities all the way through to government. So that's quite a tricky thing to, to push against. But we're doing it, you know, and luckily, legislation and lawyers on our side with the bans on vehicles over the next 10 years or so. So, we'll just keep pushing and fighting the good fight. I've no doubt that we'll get there, and this misinformation will eventually go because it's predicated largely on people just not understanding vehicles yet and that's and that's OK. If you're not driving an EV, you're not going to understand how it works yet. The second you do, the second you try one, all of a sudden, you're significantly more educated in that particular field than you were 5 minutes previous. So, these things will come through. You know, we all reasonably understand what, how an internal combustion engine works and the bits that need to be looked after and the bits that break and what a miles per gallon is, but no one knows what a miles per kilo hour is yet but it's the same thing. It's just a different unit of energy, right? But no one until you, until that gets

into the mainstream, we're still going to have to keep just reiterating some of these bits of information to help people along.

16:03 Toby Corballis

That's interesting like miles per kWh, people get very confused, I think, between kilowatt and kilowatt hour and that's, I think, very understandable because they almost sound exactly the same, which doesn't help. And I know miles and miles per gallon, but somehow, I think it's just so ingrained in the psyche that the two things are different whereas you're coming to this whole new unit of energy and how it works and how it works in vehicles that it's, it takes a little while just to get your head round some of the terminology. So, I don't think that necessarily helps.

In your role at GRIDSERVE, what are you, what's, what's your role there? Maybe just for the sake of people watching or listening?

16:44 Sam Clarke

Yeah, I've been at GRIDSERVE pretty much since the beginning and it's not a start-up anymore, but it's a public charging infrastructure business that three or four years ago was charging nobody anywhere through to now over quarter of a million charging sessions every month across the country, and I've been on the journey from the beginning to where we are today with that business largely in the commercial team looking at various different projects. And the one that I've been focusing all my time on the last couple of years is actually E-HGV. So, the 40 to 44 ton electric trucks and the infrastructure to go with it. So that's dominated my time courtesy of an Innovate UK funded project that we were awarded and started just over a year ago to try and be a catalyst in this particular sector; because, whilst heavy goods vehicles are only a, you know, single digit, I think two or three percent of the total vehicles on the road, they account for twenty percent of the transport emissions. So, they're a very small group contributing a huge amount of the emissions. So, it's a really, really, important nut to crack and with all the learning from GRIDSERVE that we've already done in the car world and all the infrastructure we've built over the last few years, it seems like the right time now to start to look at that more commercial vehicle orientation and how we can address what is the next piece of lower low hanging fruit. I suppose in terms of electrification, it's getting these big trucks on the road and ensuring that will hopefully move the needle on the emissions levels from transport in the UK and beyond.

18:11 Toby Corballis

We talked earlier about how at one point there was just electric cars and now and then we had we had to disambiguate or clarify [I think that's the same word, isn't it?] But the difference between what an electric scooter is now to what you might have thought of it being some while

ago and that diversification of transport going into the big trucks now, I think that's really interesting because big truck, big battery needs either to stand on a stand for a long, long time or a much more powerful charger, right? So, what are we talking about? Four hundred kilowatt or 1 gig, 11 GW or?

18:53 Sam Clarke

Megawatt, yeah.

18:54 Toby Corballis

Excuse me... One gigawatt would be very high.

18:55 Sam Clarke

So, you're right on both counts. Yes, it would yeah, never say never, but that's quite it's quite a lot for now. But yeah, Toby, you're right actually in both cases in the examples that you just alluded to. So big vehicles like this will typically stop for a very short period of time on a tacho break, for example, you know, between shifts, if you like, or, or driving shifts patterns or they're there, they've got a long dwell time where they're sleeping overnight somewhere, which is called tramping, as I've since learned. But we need to provide provisions of charging power to facilitate both those scenarios and everything in between. So, on one extreme, A fifty-kilowatt charger, which is not a lot, is more than enough actually to fulfil a battery replenishment over an eight- to nine-hour cycle when someone's parked up anyway. But when it comes to the short dwell on-the-go type movements, you need a lot more power to get into those batteries more quickly. So at the bare minimum, we'll be putting in chargers that support 350 kilowatts, which is actually the same at the top end as our car side. In terms of the capability of the chargers, the vehicles can't charge that fast yet, but the chargers can deliver that amount of energy, which is an important distinction in the EV world that the chargers are arguably ahead of the cars because the ability to be able to provide the energy is there. It's the ability for the cars to take that level of energy in that period of time, which is slowly but surely getting up to those sort of two hundred to three hundred kilowatt marks, and the trucks are the same, but the trucks will go past that quite quickly, I think in the next few years. And we're already looking at developing one megawatt chargers, so that's one thousand kilowatts which would be able to replenish a four or five-hundred kWh battery in in a much, much reduced amount of time, potentially, you know, forty-five minutes or so. So that's where we're heading. "We" being a collective industry, I think it will be north of a megawatt of charging and it may be the case that in the future the cars can charge that fast. We're nowhere near that yet. We're probably seeing on our network two to three hundred kilowatts is probably about as high as anyone's able to charge with the vehicle technology that's available today, but that figure a year ago would have been probably twenty percent less. So, it just shows the fact that things are moving in the right direction in terms of getting more power more quickly and becoming

greater, closer to the convenience of your ten- or fifteen-minute petrol stop. Even today, now and my daily life when I'm travelling around the country, I quite often have to move my car when I'm at the service station because the time I'm spending on meetings, having some coffee or doing whatever takes more time than it does for me to charge my car so I want to move it so I'm not blocking somebody else, which is a complete flip of how it was 10 years previous. So, you know, it's already starting to become the almost the most inconvenient thing when you stop is charging because it happens so quickly and if that, if that theme continues, then we'll be on the road to success. I think that's good.

21:47 Toby Corballis

There's a there's a couple of things in there that you spoke about that I think are really interesting and perhaps important to unpack, but before we do, just so anybody listening or, or watching a tacho break is where a driver has to stop by law for a rest after a certain amount of time because, you know, obviously it's dangerous to be driving for too long, right? So when they have to stop for that break, it makes sense for them to be able to charge during that break and just keep the engine topped up and that probably doesn't mean a full charge in the same way that when I drive around, I don't always need a full charge, right?

22:24 Sam Clarke

It's grazing, is one of the phrases which is used quite a lot now. So, grazing being the sort of concepts of just not needing to go from twenty percent to one hundred percent anymore. It's a case of, well, I'll just chuck in twenty or thirty percent, you know, in the sweet spot of the battery and then be on my way because I've already got three- four-hundred mile range and I just want to add in a quick hundred extra miles becomes more prevalent these days as the vehicles and the chargers become more powerful and I think that the big stuff will do the same as the small things, more vehicles in that way. I think there'll be a lot of grazing from here on in, where people are just in and out for ten to fifteen minutes. They're getting a meaningful amount of energy in their vehicles and then being on their way. A phrase that I coined a couple of years ago which is starting to stick, I think, is that "I don't stop to charge. I charge because I've stopped." Now if that's, if that's the mentality we can all get into when the facility and the infrastructure provides the ability to do that logic, then we'll all be grazing all the time. It'll be just, I'll pop in, plug it on charge, grab a coffee and then be on my way and it's all done. It's all done swiftly and hopefully that that is the direction we go down.

23:31 Toby Corballis

I think that's really important because that's also a mind shift, sorry, mindset shift for people who are coming from ICE to, you know... because it very often with an ICE vehicle, well, I'll just top it all the way up because I'm here, whereas you don't need to do that necessarily with an EV. And I think that that just takes a little bit of driving an EV for you to work that out and then

you really understand it. I think there's another point that maybe is implicit in what you said before, which is it's often the car that's in charge of the speed that it takes from the charger. So, the charger might be capable of doing 350 kilowatts or more, but the car might say, actually, I'm only going to take 50 kilowatts for whatever reason at this moment in time. And that's again, another bit of a mindset change, right? Because I have seen, I've rocked up at a, you know, at a fast charger somewhere and I've seen people getting angry at the fact that they're only being dispensed at a certain level. And I've had to sort of talk to them and say, well, actually, it's probably your car that's telling the charger not to give me more than that or give me more than that.

24:27 Sam Clarke

Yes, it very much can be. I mean that that's not to say that sometimes charges are, you know, are throttled back because perhaps the there's only a certain amount of grid capability in that particular area and the power is being shared amongst lots of charges being utilised and therefore it's throttled back for each charger. But you're absolutely right. A lot of the time it is on the basis of the vehicle dictating how much power it can take at that precise moment. That is another education piece that we need to do. There's a very, very, simple little English word that we use which is very important in this, and that's the word “up to”. So, you know, we have up to 350 kilowatt chargers. So that's the capability of the charger, but what your car can take is different. So it's not always 350 all the time. It's up to it, you know? That’s a very important word. I think in terms of people's understanding going forward of the limitations of the vehicle, not necessarily the charger.

25:16 Toby Corballis

Yeah. So “up to” very important. Often those little words are overlooked when people just read something, but it is. I did stop at a motorway service area not long ago and it did on the charger that I was plugged into say “up to” and I thought “oh, that's good” because they didn't do that, the same company, a year before. Sadly, it wasn't GRIDSERVE. I apologise, but anyway, it wasn't… they weren't available there. Other charges are available, I suppose. I was going to maybe wear a chef's hat when I came on here. I thought that might be appropriate because I know you're also involved in the EV Cafe, but I didn't have one and I thought I wasn't going to get one delivered just because that would be ecologically irresponsible of me, I suppose… unless I made it myself, but tell me about EV Cafe… Or tell us about EV Cafe.

26:07 Sam Clarke

Thanks, Toby. Yeah, you've… You've confused the audience no end, I think with that, with the chef's hat thing, because I think that, yeah, the EV Cafe is not a cafe. It is a virtual meeting point really in order to try and bring people together to talk about all the different topics related to electrification. The chef's hat perhaps also is a nod to the session that Sarah Sloman and I did

on Everything Electric where we were cooking and talking about EV's at the same time... Yeah, I've never... I've presented in many places and done many things, but never whilst making a vegan BLT but there we are. That's the chef hat comment, I suppose. But yeah, the EV Cafe has been just a wonderful business that we set up during lockdown just to give some people the opportunity to talk to like-minded individuals like us. There's five of us, which are all pretty experienced in the world of EV and we have a laugh, we wind each other up a bit, but we also talk about proper topics and that sort of cocktail of banter and good guests and good information has worked very, very, well and the business has grown from strength to strength, and as you know, we know, we've hosted many events across the country, or rather we've been out to other events such as Everything Electric and Fleet and Mobility Live and CV show and Car Fest and wonderful places like that where we've showcased and got guests on stage and had things like Iveco van powering our stage, you know, which is a mobile power unit, which is fantastic... And then we do regular webinars and news every month and every week just to try and share information and bring people together. And, and that collaborative approach has been really, really, popular. We've got, you know, more sponsors than I could name because people want to be associated with it and it's a real powerful way to, to spread the message really. And do it do it in such a way that it's just a touch light-hearted. It's not very dry panels where everyone agrees with each other, and everyone has a turn. You know, we do argue, we do talk each over each other, we do wind each other up from time to time, but it's all done, in a very professional manner as well inasmuch as we are getting proper facts out there and getting some really, really, good guests on the show. So yeah, we're very proud of that. It's been something we almost built by accident. It was a bit of fun during lockdown that's turned itself into a full-blown operation now, and, you know, the guys are doing a great job at working that through-

28:21 Toby Corballis

And I... And you're right, by the way, it was a nod to the Everything Electric South where the vegan BLTs were being made, which I thought was great fun actually, and a really good way of engaging people. But in terms of engagement, so people can go there and have a look at that and join in the, well, fun. Is that, is it open or?

28:43 Sam Clarke

Absolutely, yeah. I mean, the EV Cafe is, you know, we've got LinkedIn pages and all the other usual social media outlets. Everyone's very welcome to, to dial in and register to listen into the webinars. We, we do news every Friday morning at 10:00 and have a chat about sort of four or five of the top topics for that week... And there are always top topics because, you know, there is never – someone said to me the other day that no one's an EV expert because even in the time that we've been talking together, there'll be another news article in my inbox telling me about something that I didn't know, so it's hard for us, any of us, to say we're experts because everyone's learning at such a pace. So, it's quite useful to get that information coming through, you know, the quick fire for half-an-hour on a Friday. People seem to enjoy that. So yeah,

please do come and listen to us. Come and join in. And, you know, also businesses are like, you know, we're very much B2B orientated as well and we want as many different institutions to be able to join in and, and hopefully learn, but also contribute going forward.

29:36 Toby Corballis

So, look, we'll put a link to that, if you're OK with that, under the show and obviously a link to GRIDSERVE and anything else that you'd think would be useful for people, you know, as a resource to go and have a look at that around the stuff that you're doing. It's been an absolute pleasure, Sam, thank you for coming on the show. I've really enjoyed our chat and I'm sure that people are watching and listening will too. Thank you.

30:01 Sam Clarke

Thanks, Toby. Thanks for having me.