



Wicked Problems PODCAST

Wicked Problems – Series 3, Episode 6:

Linda Grave of EV Driver

Transcript

Release date: 7 January 2025

Author: Toby Corballis, Partner

Powered by

ADAPTAVIS[®]

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.



Transcript

0:09 Toby Corballis

Welcome to this episode of Wicked Problems. Today I'm joined by Linda Grave. Linda is an entrepreneur who has built successful companies within the renewable energy and EV sectors over the last 18 years and who has a wealth of experience building successful EV charging networks. She's focused on business growth and development within the EV sector now. In 2016 she built out the EV driver network of public charge points in the East of England with an emphasis on providing an easy access, pay as you go network for everyone to use. She sold that network in January 2020 to allow her to focus on helping others to create the best user-friendly EV charging solutions. She's a pioneer in the EV roaming and interoperability in the UK, passionate about ensuring the barriers to access are lowered and that customer satisfaction is paramount and that's what she helps her customers to do. I'm talking with Linda today about that, about her earlier experience in green and renewable energies, and where she thinks the market's going to next. We're also going to talk about EVEX2025, which is a really great hands-on EV exhibition / conference, I suppose is the best way of saying it – she can do it more justice than I can. Have a listen enjoy.

1:37

Welcome Linda. It's lovely to have you on Wicked problems.

1:40 Linda Grave

Thank you very much for inviting me, Toby. I'm delighted to be here.

1:43 Toby Corballis

I'm really interested in your story because it's a well, just it's a very interesting story, actually, and on the EV charging side and you know, if we rewind the clock, I think you started in green energy. I mean, you probably had a life before that as well, but if I think about your journey into the EV charging world, it seems to have started with green energy side.

2:05 Linda Grave

Yeah, absolutely. Well, let's not go too far back, being as old as I am. So yeah, the renewable energy side, I was very much involved in solar PV. Really, I started with solar thermal, but with the solar PV as it started to make headway, I just absolutely loved, you know, what it was capable of doing and this, you know, production of energy by a simple panel and inverter. It just, you know... not rocket science, it just absolutely worked. So, I love that side of it. We also did battery storage; we did a lot with heat pumps and biomass; we, we did all sorts of things. So, my business partner and I had started that business some time ago at his farm and we had a lot of farming customers and we found a real sweet spot with farmers who wanted a 30 kilowatt PV system on their barn roofs and then it really worked with different



things they were doing on the farm, particularly with irrigation. So, I even got into installing, I did the very first floating solar in the East of England and where we literally floated the solar on the reservoir and it married perfectly with the irrigation pumping season that was required. So, there's some really good product out there now and it's a heck of a lot cheaper than it was back in the day so it no longer requires the subsidies because it is cost-effective in its own right.

3:34 Toby Corballis

So it's cheaper and probably and I suspect more advanced than the technology side so it's more effective as well?

3:41 Linda Grave

Yeah, so I think, you know, per square centimetre as we used to look at it, you're producing more energy. The panels are more powerful. I think the first panels we did was something like 120 watts per panel for the same size panel. Now, physical size, you're doing about 400 watts. So yeah, I mean, it's great tech and it's now as I said, because it's now mass produced, it's so cheap and actually it still drives me nuts seeing massive warehouse roofs without solar PV on because there is no reason anymore not to integrate solar PV when you're building big warehousing and things like that; you know, producing your own power to run that building just makes logical sense. Battery storage is still not cheap as chips, but sadly with the energy crisis as it was with the invasion of Ukraine, you know, we did see energy prices increase greatly so that's part of the reason why it becomes more cost effective now as well, because electricity is expensive and if you can generate your own, then you absolutely should be looking at doing so.

4:44 Toby Corballis

And not just for cost reasons, but it's also more secure in terms of supply, right? So, if I've got that PV and then I've got the battery on the wall, actually if we can't get the energy from interconnects, I've still got some energy coming into my house, so there's a bit more security that way and if you multiply that by however millions, that's actually quite significant.

5:09 Linda Grave

Absolutely true and, as I say, so as the cost has come down, it's made it more affordable... what's always sort of struck me is that people spend maybe 10,000 on a kitchen refit and in 10 years' time, that's an old kitchen and you want to do it again. Solar PV just keeps producing. It just lasts and lasts. I mean, I've got a system on my own roof which I've now extended, but you know, I installed that 15 years ago and it's still producing. It's not had anything done to it at all. I don't yet have a battery storage system myself, but I have a car with a very large battery, so I'm utilising that as much as I can. And I'm quite excited about the potential of V2X, you know, not necessarily vehicle to grid, but vehicle to home, vehicle to other appliances and things, and utilising that battery, and I think, you know, these are exciting things to come. But yeah, it kind of starts with the solar. If you can put the solar on your roof and start there, you know,



if you can't do that, if you don't have the, you might be able to invest in the community solar project. Those are quite exciting, so there's still ways to potentially have your own production of solar.

6:22 Toby Corballis

You were talking there about, you know, PV and okay, you might have a battery on your wall, or you might not, but you know, you've got your PV and then you've also got your car, which is a battery in its own right outside your house, and you said you got quite excited about that. I believe you got so excited you even started a charging company?

6:39 Linda Grave

Yes. So, I think back in the day, as I say, my early customers were really interested in Solar PV. There were subsidies at the time so a lot of it was not necessarily about the environment. It might have been about generating an income from subsidies, but later on, as those subsidies went away, people started asking me about electric cars and I thought I don't really know a lot about them, so I started looking into it and then I heard about this chap called Elon Musk and Tesla and I got really excited about the, the potential of the Tesla Model 3. I'd seen a Model S... Anyway, my, as I say, my customer base was starting to ask. I'd looked into home charges for them, and we [knew], you know, that that wasn't rocket science. We, we researched the best. We were very lucky that we're, where we live. We're close by a company called EO. So EO charging was, you know, very local and we knew the guys well, so we, we looked at doing a few of those and also Zappi. So, we had a sort of couple of favourite charges that we installed for our clients. I just decided that with my little Nissan Leaf that I'd got at the time, if I wanted to go out and see my customers, I probably needed some public charges out and about because I could only do about 60 miles. So, I set about installing some public charging and I was lucky enough to get a contract to do this with the East of England Co-Op. So started rolling out some public charging with the East of England Co-Op. It was AC charging, 22 kilowatts mainly. And it was extremely useful in promoting electric cars and saying, you know, you can do this. You can travel a bit further, you can charge, you know, you can do a top up charge to get round. And it was way before rapid charging was getting going because this is sort of 2016. It was adding that level of security for everybody thinking that, you know, I can have an electric car, and I can do this, so that's sort of why that started. In the meantime, I put my £1,000 down with Elon Musk to get my Tesla Model 3. It was a bit of a punt. It was a, you know, you pay us and if we get enough people who are interested, we will build it. So, I was lucky enough to be one of the first people in the region to get the Tesla Model 3 and so there was a great deal of interest and people were coming to see it and I think it was doing quite a lot of little rides around. But yeah, so that's sort of the early days of the of the network building. It wasn't an easy thing to do, Toby, to say all the different elements that needed to come together to build the charging network: I needed the hardware, I needed the software, I needed the connectivity, I needed the power, and I needed the, you know, the knowledge to pull all these things together. And then I realised once, once it had grown a bit, that if



people were using it outside of office hours, I really needed some customer service as well. Every new network back in the day started while somebody takes the mobile home, phone, you know, home with them that night and if there's a call, you try and sort it out over the phone. But then you started to need, you know, a proper customer service solution so I went about searching for one of those and someone from a, a software company came to me and they'd basically seen that there was a need for this in Europe so we sort of, I helped to introduce that into the UK and quite a few of the networks then got on board with realising that, you know, if you've got customers, you really need to have somebody at the end of the line to help them if something does go wrong, so that was-

10:17 Toby Corballis

Yeah, I understand that only too well because back in 2020, I was working with Shell Recharge and – or NewMotion as it was then – they called it the DC team, so basically the rapid charging team as you probably would call it these days, but back then it was, oh, it's AC or it's DC, but you know, the DC team had four people working on it and they each were taking turns with the mobile phone and they were covering Europe, right. So, they were getting calls from Germany, from Netherlands, from Belgium, from the UK and of course, yes, if you're providing a service and you've got customers, you have to be fit-for-purpose in their eyes, so just having a, a four-person team with a mobile round-robin isn't going to cut it yet. I can totally see where you're coming from on that.

11:10 Linda Grave

Yeah, yeah. And it was, it was like that forgotten element, and for me early on also was connectivity. You know, it was like, I've got a hardware provider, and I've got a software provider and we sat down, we had the meeting together that yes, everything will work. Absolutely it will work. And we started installing. Then we found out, no, actually that software wasn't compatible with that hardware. It needed a, you know, an upgrade, and then, oh, you know, there's SIM connectivity to go with this as well and you're in an area where there's a poor signal, so there were all these different elements that, you know, you really do learn the hard way, but all those experiences helped to shape where we are today, and I think, as you know, recently, you know, we've just had the new regulations have come in to ensure that all charge point operators had 24/7 customer service and, you know, it still surprises me when even in this late day that people hadn't thought of that element as being a highly important part of your network. If you irritate a customer, they will definitely shout about it. It will be on social media and every if they have a good experience, you probably don't talk about it at all, you just crack on and carry on with your day because it's, it's what you expect, isn't it? Plug in charge, get what you says on the tin and move on. But you know, we know we've still got some poor experiences out there, but they are becoming much less frequent, I would say. And the regulations would completely help.



12:39 Toby Corballis

And the regulations will help. I think there's still some confusion about, you know, what does it actually mean to have 99% uptime, for example? Yeah, you know, which bits are we counting? But it is one of the sort of confused points that I've heard people raise. But yes, I think, you know, the intention of the regulation is good and it's nudging people in the right direction and we're very keen as a, you know, we're a consultancy, but we're very keen that people do the thing for the.. we hear things like project to product. That's a phrase that goes on in a lot of Agile communities, and we actually go, "it's more like let's go project to customer." It's all very well going to a product, but if you build the wrong product and the customer doesn't want it or it doesn't work in the right way for them, it's not really a product, right, or service? It has to be something that works for the customer and works really well for them. OK, so you started this network up and it was successful and then you sold it. I think back in 2020. Is that right?

13:47 Linda Grave

That's right, yeah. So I got to the stage where I was realising that, you know that it was either going to be massive growth and investment required to go bigger or I was going to sell and concentrate on consultancy, which I was doing. I was helping people. I was getting quite a lot of questions about how should I do this, what did you do to do that and how did you overcome this etcetera. And I really rather liked that side of it, so I decided that was the route I was going to go. I was going to focus on helping others build Fit-for-Purpose EV charging infrastructure and had a request regarding my network and I sold it to somebody else who was using the same back-office software, a company called Plug and Go and they wanted to grow. They were based in Jersey, and they had some in Gibraltar and some in South of England and they wanted to grow. So yeah, we agreed a sale and I sold my network to them and stayed sort of helping them for a couple of years in the background advisory and then I was able to focus more on the consultancy with a sort of a clear conscience. There was still a lot of secrecy and nervousness in the industry about, you know, data and sharing of data, and I think there still is, but maybe it's becoming a bit less, you know, but people are really quite nervous and they. So if they knew you were a Charge Point Operator to yourself, they were going well, I'm not sure I want you to help me, you might just use my information. It was a really interesting first stage and I would bring together other people in the industry, excellent consultants who would. Maybe they were between jobs, or they were doing something, but they had some time that they could offer and we could then look at some projects that maybe require different levels of expertise. Yeah, so we helped a couple of Charge Point Operators launch. There's a new one that's just started quite recently. They're using the Fuuse back office, but they're in Leighton Buzzard and they have built a really nice charging infrastructure site that is one of their sites, but this particular one has bus charging. It comes completely off the A road with proper signage, you know, a Starbucks coffee or is it Costa? I can't remember – name check – h but you know, a big site with good rapid charging and enough space now for it was built for buses, one area of it, but it's



going to be for trucks and, you know, HTBS and fleets and various things. So there's some really nice sites coming in and looking at what's coming next and how do we prepare? How do we make sure that there this transition can happen? You know, you, these things need to be done side by side. You can't just introduce all the vans and trucks and not have the charging infrastructure, so you need a bit of both. You need to look at the routes that they're travelling and, and, and what they require. I'm sure as you know, you know, it's, it's, you don't want an overhanging canopy where you're trying to bring a truck in, and the cables need to be long enough and high enough and all these different things. So, yeah, there's a lot of different things that need to be looked at when you're considering your charging infrastructure. It's not just about, I think that's the time of day-

16:58 Toby Corballis

Yeah, that's, I can see that because you know, we're quite, I mean we're still, it's still a relatively new industry on the on the car side, but I mean it's a lot more advanced than it is for trucks and for and so on, right, because there aren't that many trucks at the moment. They're coming, but you need to have that infrastructure built out and the demand where their batteries are bigger, they need more, you know, they, they're more inclined to need rapid charging. They yes, they can have, they can charge on Taco breaks or they can charge on a return to depot, but that means their charging schedules are slightly different because they need to be maximised out on the road, etcetera, etcetera, etcetera. And we see also, yeah, and we see all sorts of things that people are now starting to think about, "oh, what if you're towing a caravan in a car," you know, "how do you get into a slot?"

17:48 Linda Grave

Yeah, you know, and then also there's this charging infrastructure that's hugely expensive to install and maintain, and then it's how do these operators perhaps look at sharing that charging infrastructure a bit more? You know, if you if you're using nearly all public charging infrastructure is used mainly during the day. There's not so much usage at night. Is there an opportunity to share that for overnight charging, you know, and sweat the asset a bit more and really get some good utilisation? So, yeah, bringing parties together. And as you said earlier, it's about discussing these things early enough with the vehicle manufacturers, with the end users, you know, the height of the screen, all these different things. Is it fit for purpose? Yeah.

18:34 Toby Corballis

Yes. An example I often give is, I won't name them but one, and I think it wasn't just one motorway service area provider, there was - I think they were all guilty of this perhaps to a degree in the beginning - where they would do things like, well, we can save, you know, €200 on the price of a cable by making it 1½ metres instead of five metres long, and if we do that over thousands of cables, that's actually quite a lot of money, but then without realising that that means that people would have to mount



the kerb in a dangerous way, which might shut the charger down, which costs two-and-a-half grand every time you call out somebody to fix it. You know, that's just a very, very glib example.

19:12 Linda Grave

But quite accurate, Toby, I would say. Yeah, I, I've had to do that myself at a particular charging station, Yeah, not easy.

19:19 Toby Corballis

So, so and then and then to make it worse, it's in a dimly area of the forecourt and because it's been an afterthought, because the whole thing you know, etcetera, etcetera, etcetera.

19:29 Linda Grave

And I had it with the various companies that earlier on councils and they're, you know, well we, we'll have one if you, you know, we because we think we should, but can you stick it over there at the back of the car park, you know, where it's not really in the in the way. You think, "yeah, we need a different approach." I think luckily now that's gone. And like, I'm incredibly lucky here where I live in, in Suffolk, our County Council is fully on board. They've got a large portion of the LEVI fund, or lev-I fund, I'm never sure what you're supposed to say, and they are totally on board. And also, with my EV experience day, this event that I run. They approached me this time, so, you know, "Linda, come on, can we do the event again? Let's get it going because..." Sorry, Toby, I know you're going to ask me about it. I just thought I'd mention it. It's a way of getting the general public to come and test drive the vehicles. Just come and see for yourself. You know, I'm going to bring loads of vehicles to one place. You can look at them side by side and go, "oh, that boot... Yeah, maybe that's not as big as I thought" or, "yeah, it's quite high up" or "I don't like the way the doors open or where the charge point is," but the moment you get to see loads by side by side and actually test drive them, I know that's when people fall in love with them, you know; and once they get behind the wheel, all the arguments and the fun and everything, you know, the fear, uncertainty, doubt just starts to fade away because they are seriously good performance vehicles. So, you know, where's the argument once you've tried? So, you know, I've been doing this event now since I started building that network back in 2016 when I thought, well, now build the network. I'm going to get people to test the cars, and all the local dealerships are on board it and now, with the ZEV mandate and everything, it's becoming more important that they sell X number of electric vehicles, and so I'm running the event again this year it's on, this year... Next year! It will be on the 9th of July yeah, 9th of July so EVEX 2025. It's short for EV EXperience Day, but I think like this time, and we introduced a bit last time, that we have more renewable energy people there as well, because this link with solar battery storage, you know, is really important. We also had vans and we had the Mercedes eActros truck, so we will have a range of vehicles and we might even have some bigger, a bit more HGV stuff available for people to test. We are extremely close to the port of Felixstowe as well. So, you know, we feel as though maybe we need to bring the trucks in and try and get that, you know, in, in the public's eye as well. But the idea



of, as I say, testing the vehicles and getting people along... and Motability are on board. They'll be they'll be with us. They had three adapted vehicles with them last year. Yeah. So, you know, it's all, it's all-encompassing, isn't it? You know, it's just a vehicle; it's got a different fuel source; we need to stop this fear, uncertainty, doubt, and get people to see, come along and try and see what you think, you know.

22:45 Toby Corballis

And, I think it, it's, I mean in a yeah, different... Just shout out to Autotrader do this thing right where they do, they go for EV sceptics and they bring them to a sort of a racetrack, I think and then they take them round in an EV. They question them afterwards and say, "are you still a sceptic?" And I think there's not been one person that was-

23:05 Linda Grave

I've seen that. It's really good, isn't it? But probably when you've got a real doubter, you know-

23:06 Toby Corballis

Yeah, you can understand people's doubts. When they articulate them, you go, yeah, OK, well, I understand on the basis of it sounds reasonable, right? It's, they burst into flames every 10 minutes or they, you know, run out of juice when you're on the way to the shops or whatever, but when you experience it, you find out that's not actually true and none of that is true and that, you know, they can drive really good distances and they're comfortable and they're fast and they, you know, the driver experience is really good, and I think that just evaporates, doesn't it?

23:42 Linda Grave

I'm mean, the AA were one of our sponsors last year and, you know, they get their presentation and I think it was less than 4% of breakdowns in EVs are due to running out of battery, you know, so it, it's a tiny proportion, particularly when you compare it to people that run out of petrol or diesel, you know, I mean, it's, it's just, it's just tiny. It doesn't happen so much. But you're right. I mean that there are so many arguments against to start with them. We, we're having to deal with it daily, aren't we? You know, we're, we're kind of fighting Big Oil in in many ways. It's there's a lot of stories out there about them, you know, not having the range. And then it's amazing how everybody has a granny in Scotland that they need to visit - absolutely everybody I speak to - and there's no way they'll get there. So, you know, and then you start to talk about, well, after you've been driving for two to three hours, do you not feel that you probably need a stop? You know, in some way we need to help people understand, and it's all about getting the messages across. And, and that's what we continually trying to do to, you know, fight the fear, uncertainty, doubt and yeah, just give some correct information. And maybe it's, you know, it's not for everybody yet. That's fine, you know, come when you're ready. It's a transition, not a cliff edge. We are moving towards electric vehicles because they're better for the environment, they're better for everybody and they're really good vehicles. So, you know, rather than-



25:08 Toby Corballis

We love to explode a good myth here on this podcast, and I think there's one that you're sort of alluding to as well which is if we talk about the ZEV mandate, and a lot of people interpret the ZEV mandate as being, they're forcing me to switch to electric, and actually that's not true. They're forcing the car manufacturers to start selling more and more electric, but that doesn't mean you as a consumer has to go and buy an electric. You could be in the in the, well, it's still actually a majority of cars that are ICE vehicles that are being sold, but even if it wasn't, there's nothing to stop you going, you know, most car purchases are second hand anyway. So, if you really are ardently after an ICE vehicle, you can still go and buy it. Nobody's standing there with a shotgun saying: "Oh no, I'm afraid not."

25:55 Linda Grave

I think that's it, Toby, you know, I think, but is it only 26% of people ever buy a new car or something? It's so, you know, we, if we look at the masses, they're buying used cars and what's fabulous now is that there are all these used EVs available and they're really good prices, some super prices. Then of course there are there, there's stories out there that are you don't want to use the EVs, the battery won't last. You know, we've got vehicles on the road with 100,000 mile warranty on the batteries and they're lasting longer than that anyway. You know, there's some fantastic EVs out there. They're still losing only a tiny percentage of their battery capacity in numbers of years, so when you look at the distances that people actually drive, I would say that any family that has a two car household, one of those can be an EV right now. Without doubt. So, you know, you've got, you just need to look at it in different ways. When you know people, you start to ask them about their annual mileage, and then you find out... Well, you only do 7,000 miles a year. You know, you're... Come on-

27:03 Toby Corballis

The average journey is 11 miles, I think the average person's journey, isn't it?

27:03 Linda Grave

It's bonkers, isn't it? Yeah. In fact, we should just be selling bikes, you know, let's be honest.

27:14 Toby Corballis

Linda, if people want to find out more about the work you do in the consulting side, if they want to find out more about the great events, you know, EVEX 2025, where can they go to find out more? What's the right place?

27:29 Linda Grave

The website, which will be updated with a link to the event shortly, but info@evdriver.co.uk is the e-mail address and I'm... you can find me on LinkedIn as well, so quite a few different ways and we'll be doing a lot more promotion of the event over the next few months. But at the moment I just want people to save



the date. If you're in the East Anglia region, do come along because it's definitely worth checking out some of the new vehicles.

27:59 Toby Corballis

So that day is 9th of July

28:02 Linda Grave

9th of July at the Suffolk Showground, which is Trinity Park in Ipswich. The idea is that the sort of morning will be quite business focused in the afternoon, will be general public, Motability in the afternoon. But, you know, if you can only come in the morning, you come in the morning, it's fine. And we'll have some presentations and things throughout the day.

28:25 Toby Corballis

So, what we'll do is we'll put a link to your website so that's evdriver.info?

28:31 Linda Grave

Yes. So evdriver.co.uk is the website

28:35 Toby Corballis

sorry “.co.uk”

28:36 Linda Grave

And the e-mail address is info@evdriver.co.uk.

28:41 Toby Corballis

I was switching my info round to the other end of the URL, so that's my bad, but we'll put we'll put the correct URL at the bottom; we'll put a link to if the event link is up at the time you publish; we'll put that as well, but if it's not, we'll also maybe put it into last year so people can see a bit about what's going on, because I know there's some YouTube vidoes

29:01 Linda Grave

Yeah, there's a video explainer there and it's Ground Transport Events team which are helping me organise the event, so they'll be putting a lot more on their website too.

29:10 Toby Corballis

Fantastic. Sounds like a really good day out. I'm going to try and, you know, get there myself.

29:15 Linda Grave

That'd be great. You'd be very welcome, Toby.

29:18 Toby Corballis

Excellent. Linda, it's been amazing. Thank you so much for taking the time to talk to us and look forward to seeing you again.



Wicked Problems PODCAST

29:26 Linda Grave

Yeah, thank you very much, Toby. Much appreciated.