HOUSE OF COMMONS

Business, Energy and Industrial Strategy Committee

Oral evidence: Electric vehicles: developing the market and infrastructure, HC 383

Tuesday 8 May 2018

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Watch the meeting

Members present: Rachel Reeves (Chair); Vernon Coaker; Stephen Kerr.

Questions 216 - 279

Witnesses

I: Robert Evans, Chair, UK Electric Vehicle Supply Equipment Association; Rasita Chudasama, Principal Transport Planner, Nottingham City Council; David Martell, CEO, Chargemaster; Matthew Eastwood, Head of Transport, Scotland, Energy Saving Trust.

Written evidence from witnesses:

- Chargemaster;
- Energy Saving Trust.

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Examination of witnesses

Witnesses: Robert Evans, Rasita Chudasama, David Martell and Matthew Eastwood.

Q216 **Chair:** Thank you very much for coming to give evidence to our Select Committee this morning. I am sure there is nowhere you would rather be on this warm, sunny morning after the bank holiday weekend. Our numbers are a little depleted this morning, in part because Parliament does not start sitting formally until 2.30 this afternoon and we have late votes this evening. I am sorry for the shortage of numbers, but that does not reflect a shortage of interest in this subject. We have been conducting our inquiry into electric vehicles for a few weeks now, and that has included a visit to Oslo, where we looked at Norway's experience of the rollout of electric vehicles. We have one more evidence session after this in a couple of weeks' time.

Thank you very much for coming to see us this morning. I will start off the questions, and this is really to all four of you. What are the main barriers to developing the charging infrastructure for electric vehicles?

David Martell: First of all, good morning. Chargemaster is the largest operator of public charging in the UK. We believe it is going pretty well. There are no specific barriers nationally. There are regional barriers. There is significant investment going into public infrastructure. We, at Chargemaster, are investing some £50 million over the next two years. We are aware of at least four other players in the industry investing similar amounts, so it is going pretty well.

Robert Evans: There is a mix of two different customers for charge points. There are a lot of host organisations, be they public or private sector organisations, that put charge points on their land, and then there are companies, like David's company and others, that invest in their own assets and deploy them, in partnership with local authorities or others, or of their own accord. It is really positive and we have members within the association who are looking to invest and own their own charge points. They are very upbeat.

For host organisations, one of the barriers has been the business case, with a slow penetration of electric vehicles in the marketplace. That has potentially held back some organisations from investing. Having said that, the perception, with the 2040 targets, that this is now an inevitability has overcome that barrier.

There is a land issue, in the sense that, where organisations own land that you want charge points on, it is up to them. You cannot put your charge points on other people's land. There are constraints on the low-voltage network that add costs in particular locations. For cost reasons, you cannot always put charge points exactly where you want.

The level of organisational knowhow and knowledge within the organisations that are looking to buy and install charge points is being addressed, for example, by training courses and a broader dissemination of information. I do not believe that there are any key roadblocks as such, but there are always areas that you can look to improve, to maintain momentum.

Q217 **Stephen Kerr:** How would you distinguish between the barriers to getting the public and the private charge points in place? What are the differences in the barriers? Are there differences?

Robert Evans: Operationally, not necessarily, no. It is a question, for both types of organisation, of seeing the business case. The business case for a local authority depends—and Rasita will answer this question—for example, on winning funding to run a scheme. If you can win funding from a national level that is additional to what you ordinarily have, you have much more free rein to move forward, and that can be your business case. For a private organisation, the question is: will it bring more customers to my location, or will it lose me customers if I do not have the provision of charge points?

Q218 **Stephen Kerr:** Are there specific barriers in the public authorities' minds? For example, there is a sum of money available from BEIS for public charge points, but that sum of money has not been exhausted by any stretch of the imagination. Why is that? What is the specific barrier to public authorities?

Robert Evans: You need to differentiate between a capital grant and a programme that can also give you revenue support for the people to administer and manage. Where there has been funding for initiatives such as taxis, buses or the Go Ultra Low cities, there has been a much greater impetus, because there is the ability to fund somebody to do the work as opposed to a capital grant, which is partial funding. It is not nearly so easy to build momentum for those types of applications. That would be my take.

Rasita Chudasama: If I explain from a local authority perspective some of the challenges we have been facing, they are slightly different but echo the comments of the other panel members. We have been successful in securing Go Ultra Low funding from the Office for Low Emission Vehicles. We got about £6 million. We have invested £2 million of that into establishing a publicly accessible charge point network, and that is across the D2N2 LEP area. The city council took the lead in procuring the contractor, which is Chargemaster in this case.

If we take it back to the beginning, for local authorities, procuring a provider and having the resources and the expertise about how to go to market is a significant barrier. We bid to the Office for Low Emission Vehicles because we are confident in electric vehicles and we want to see them in Nottingham. We said, "We need to have a charging infrastructure network", and that was part of our bid package, but we did not have any suppliers at the time, so we had to assemble a team once we had secured the funding, which comprised of procurement, finance and legal, as well as project management, to help take us through the process of going out to market. Developing a business case in terms of what is commercially viable was really interesting, because we did not know any of that. That was some of the feedback that we got from different providers when we went to market, because, as I am sure we will hear later on, suppliers organise themselves in slightly different ways.

We need that knowledge and knowhow to navigate a market that is still fast evolving and quite risky for a local authority. How do we know that we are buying the right thing? What if technology has a massive step change in a short period of time, we have bought the wrong thing, we have a series of white elephants around the city and we have no budget for maintenance or replacement? Those types of risks need to be managed and we needed to factor them in as part of our decision-making.

Ultimately, everyone can say finance is a barrier, and I know that there is national funding available, but for local authorities to understand what they want to purchase can be as much of a barrier.

Q219 **Stephen Kerr:** Do you not have bandwidth, in terms of the organisation's resourcefulness and ability to commit itself?

Rasita Chudasama: To give you some context, it is a four-year project. We got the funding in 2016 until March 2020. It took us the best part of 18 months to procure a provider. That is from nothing, from the first meeting: "What do we want to do? How do we want to do it? What do we know? What do we not know?" We did not have any technical expertise within the council, so we appointed a company called Cenex, which provided the technical knowledge about the market, the different providers and their USPs, to help frame our learning.

Then we had to figure out what we wanted to buy, because there are certain legacy issues, which I am sure will come up, from previous tranches of funding, where ownership of the assets has been passed to local authorities, councils have not had funding to maintain them and they have become obsolete. We did not want to have that happen, so we changed our procurement focus from just supply and install to a concession model, which meant that the council could have some revenue and an income stream.

With the Chargemaster contract, we are getting a guaranteed minimum payment, where we are paying for a dedicated resource to manage the network, work with Chargemaster to develop stuff, hopefully bid for future funding, resolve any issues around power and land ownership, and find sites. All of that stuff takes a hell of an amount of work for a local authority team, so those are some of our significant barriers.

Q220 **Stephen Kerr:** That is a pretty comprehensive description from Rasita.

David, what would you add in terms of the public sector, and how is it different for the private?

David Martell: As you might imagine, working with the local authorities across the country varies tremendously. As Rasita said, we are working very closely with Nottingham to put out infrastructure. We have worked very closely with other local authorities, in particular Milton Keynes, and it goes very well. There are other local authorities that have more severe constraints and are not as enthusiastic. We see the market going forward with the public sector playing its part, particularly the authorities that are keen to do so, but also the private sector.

You have to bear in mind that currently there are about 350 new charging points being installed every month. There are currently about 14,500 or 15,000 charging points across the country. It is growing pretty well. That is split between public sector and private sector. We work with both. We invest in our own charging points.

Q221 **Stephen Kerr:** Are the barriers similar for the public and private sectors?

David Martell: They are similar. One of the challenges is that the electrical connection through the DNO, the local supply, is often very cumbersome. It is a bit like having your BT telephone line installed at home. You often have only one person to go to. We have a bit of an issue in Nottingham at the moment. It is something you have to work through and it does not stop things; it just delays things.

There is enough money. In terms of public infrastructure, there does not need to be a lot more government money going into it, because there is plenty. The market has evolved, so that there is lots of private sector investment going in. We just need the cars now, quite honestly. There is a lot of infrastructure going on.

Of course, we are talking about public infrastructure here, publicly available on the streets and in car parks. That is only one part of the equation. People charge at home and at work. I always make the point that it is very similar to charging your mobile phone. You do not go down to Carphone Warehouse to charge your phone. You will charge it in lots of places. Although public infrastructure is very important, it is not the only factor that we need to consider.

Stephen Kerr: We are going to come on to that later. I am very keen to hear from Matthew, for very obvious reasons.

Matthew Eastwood: In terms of barriers, the only one that I have not specifically heard and we need to raise is poor mobile communications. In some parts of the north of Scotland, the fact that there is poor mobile communication makes it a challenge for charge points. Poor signal quality means that the charge point struggles to remain connected to the back office. Sometimes it is possible to have hardwired connections, but where that is not possible we have been looking at piloting satellite communications. We have examples of that in Gills Bay in Caithness and Ullapool in Ross-shire on the north coast of Scotland.

In terms of the distinction between public sector and private sector, the picture is possibly slightly different in Scotland, with annual funding from the Scottish Government to local authorities, both for the installation of electric vehicle charging infrastructure and for the replacement and electrification of public sector fleets. The picture in the private sector is a little more mixed, and attitudes remain a little more mixed, in terms of the uptake of electric vehicles and acceptance of EV charging infrastructure. This is possibly the case in Scotland because we are proactively engaging with private sector organisations to encourage the uptake of EV charging infrastructure and electric vehicles.

As a specific example of this, where public sector land has not been available to install charging infrastructure, we have engaged with private sector landowners adjacent to Scotland's trunk road network, so the M80, the M8 and the A9, looking for opportunities to install additional charging infrastructure on private land, to improve the resilience of Scotland's charging infrastructure network or to fill gaps where there are gaps in the network. Sometimes that can mean engaging with organisations that have not yet bought into the concept of electrification and its benefits.

Q222 **Stephen Kerr:** How is that engagement going?

Matthew Eastwood: It is mixed. Every organisation is different. Sometimes it can be quite challenging; sometimes it can be relatively straightforward. It really depends on the nature of the organisation and the potential benefits. As one of the other panellists highlighted, if they can see the benefits to them as an organisation of having charging infrastructure—the potential for additional customers, additional patronage—they could be persuaded of the benefits of having infrastructure installed. We very much focus on the benefits to them as an organisation of having this infrastructure in place.

Q223 **Stephen Kerr:** Talk about the disparities between the different nations and regions in the United Kingdom. We had a brief conversation there about Scotland. Should we be concerned that there is such a wide disparity between, for example, the north-east and Wales? According to this brief I have, there are only 31 publicly funded charge points in the whole of Wales. Should we be concerned about that?

David Martell: It is partly due to the historical structure of government funding over the last eight years. Initially, in the early days of electric vehicles, eight or nine years ago, there was a series of what were called "plugged-in places". The north-east was one; London was another; Milton Keynes was another, and so on. It grew. Of course, they were the hotspots for charging infrastructure and quite successful. As Rasita said, unfortunately, there was a bit of a legacy with maintenance and who was going to look after them, and some of that is being resolved now. Part of the regional disparity is down to that history. It is also driven by demand. You mentioned Wales. I fully agree, but there is a very small number of cars in Wales. As cars become more and more common, I am sure it will balance itself out.

Q224 **Stephen Kerr:** It is chicken and egg, though, is it not? There are only 31 publicly funded charging points.

David Martell: It is, but, to answer your question, it is not something to be concerned about. The market will resolve that.

Rasita Chudasama: I have something to add to that. There is a risk that we will end up with pockets of charging deserts. There are places like Wales, particularly mid-Wales, Norfolk and Lincolnshire that are not well served by the grid, so it is cost prohibitive to connect those places up with charge points. It is interesting to learn from Scotland, because there are charge points in quite remote areas. Was that as a result of quite a proactive DNO or was it an investment decision to make an area accessible by a charge point? Power has a lot to do with this.

Q225 **Stephen Kerr:** Matt, can you reply to that? I think I know the answer.

Matthew Eastwood: It is a very good question. Essentially, Transport Scotland and the Scottish Government have taken a strategic approach to infrastructure development in Scotland, rather than purely relying on the market to deliver. That means you are perhaps looking to support demand prior to it being present. It is very difficult to see somebody in one of the more remote rural communities, perhaps in the Highlands of Scotland, purchasing an EV without any infrastructure being in place to support that purchasing decision. There clearly needs to be some infrastructure in place to accommodate people purchasing electric vehicles and replacing petrol and diesel vehicles. In some parts of Scotland, it has been essential to use public funding to deliver that charging infrastructure, because there simply is not a business case for private investment in those locations.

Stephen Kerr: I understand. Does anyone want to add anything else about regional disparities?

Robert Evans: The presence of public charging is a reassurance when you are looking to buy an EV, and then it is a necessity at times when you are looking to own and operate one.

Stephen Kerr: Surely we should be concerned about this regional disparity.

Robert Evans: You need to keep an eye on it, definitely, but there are two different things you need to keep an eye on. One is that you are getting a regional coverage, and it will come with more EVs on the road. The second one to look at is whether you are getting replication in areas of concentration where you need charge points, for example at railway stations or city centre car parks, because you have a situation where someone could say, "I would own an EV, but the charge point is always occupied from 7.00 in the morning and there is only one". You need clustering where you have a concentration of potential users. Then you need a dispersed network, in our market towns and the like. Most people in rural areas will be able to charge at home, so it is a matter of getting home and workplace progressed.

Q226 **Stephen Kerr:** I am going to ask one more question, with the indulgence of the Chair. It is about your view of how easily the Government can achieve this target of phasing out new internal combustion engine sales by 2040. Should we be more ambitious? How easy is it? I know in Scotland it is 2032, for example. In other parts of Europe, they are even more ambitious than that.

Robert Evans: It needs clarifying. At the moment, we understand the target to be the electrification of vehicles, so not necessarily the phasing out of internal combustion engines. You could have plug-in hybrids and range-extended electric vehicles. As for the 2040 target, you are operating in a global motor industry with international suppliers. It is incredibly good that the UK should set an aggressive target. What matters alongside that, for the target to be realistic, is converting motorists to want to buy EVs. For us, it is about interim targets along the way and where we want to be by 2020, 2025 and 2030.

Stephen Kerr: We need a lot more detail.

Robert Evans: It is off in the distance as an ambitious target, unless it is monitored with sub-targets. That is what we are looking for from the Road to Zero strategy: those interim targets along the way.

Stephen Kerr: That is coming shortly. Rasita, what is your view on that? How easy is it? Should we be more ambitious?

Rasita Chudasama: It is not easy. It needs a concerted effort, from national and local government and from industry, to work towards that goal. That being said, 2040 is a long way off in the future. For Nottingham, we are committed to this agenda because we want to improve local air for local people. If we are being looked at as one of the cities that need to bring air quality into compliance in the shortest possible time, that does not tally with a 2040 target. The timescales just seem way off.

That being said, ULEVs are only 2% of all vehicles, so there is a long way to go. Other countries, as we know, have come out and set far more ambitious targets. If the UK is going to be a leader in ultra-low emission vehicle manufacture and ultra-low emission vehicle technologies, that timescale is too far off. We would have missed the boat.

Stephen Kerr: We could have a big discussion, but we have to move on.

David Martell: It is definitely achievable. There is an argument, as Rasita mentioned, for seeing whether it could be more ambitious. I would make one point, from being deeply involved, and living and breathing infrastructure: it will not be the infrastructure that holds it back. There will be plenty of public infrastructure. We will need to talk about workplace later on. The biggest thing the Government need to look at is milestones, as Robert said. We need to know what is happening in 2025 or even sooner, in 2022. Running a public sector business, I cannot have a business plan that is 20 years away. I need to know what is going to happen in the next five years.

Stephen Kerr: That is true for private sector and public sector.

David Martell: The biggest impact the Government can have is on managing the fiscal policy, transferring the cost from combustion engine cars and giving some benefit to EVs.

Stephen Kerr: We are going to come back to all that.

Matthew Eastwood: If you look at the announcements from OEMs regarding the manufacture of EVs, the 2040 target is broadly in line with OEM timescales for rollout of electric vehicles, so due consideration should be given to adopting a more challenging target, to send a signal that the UK Government wish to be more ambitious and help drive change at a faster pace. There are examples: in Norway it is 2025, in the Netherlands 2030, in India 2030, and in Scotland 2032. An earlier target would contribute to the UK Government's climate change targets and address local air quality issues, as we have already heard about, but also reduce dependency on oil imports.

Q227 **Vernon Coaker:** Good morning. Can I say at the outset that some of the evidence may particularly interest me, given Gedling is right next door to Nottingham city and in the D2N2 area? Nottingham city works with Nottinghamshire County Council, which includes my constituency. In case there is any perceived clash of interest there, I put that on the record.

The Government are soon to publish the Road to Zero strategy. David, I was interested in your point. Let us get really practical here. The Government have their overall objectives, but what are the one or two commitments that the Government should put in the Road to Zero strategy, to make sure they can get to what they want? David, shall we start with you, because you started to get to that in reply to Stephen Kerr's earlier question? Give one or two very concrete things; it does not have to be one, but two.

David Martell: I will pick on two, to be brief. I touched on these a couple of minutes ago. The Government need to have some milestones. I think everybody accepts that. 2040 is great. If we can do better than that, that is fine, but we need to see what is going to happen in the next five years and the five years after that. It is very difficult to get any forecasts from Government at the moment as to what they are expecting.

Vernon Coaker: Milestones is one.

David Martell: The second is a strategy for the fiscal benefits, which we might touch on later on. That is the biggest influence on the growth of EVs. Many of you will have looked at what has happened in Norway, where there are very attractive fiscal benefits from owning an EV, and it has been very successful. For a few years yet, EVs will be more expensive to buy, and if people can see a benefit—

Vernon Coaker: It is the taxation policy.

David Martell: Exactly. They have vehicle excise duty, where you can get a benefit from an EV. It can be neutral to the Government. Other things include benefit in kind. A lot of cars are owned by companies. There has not been a consistency in policy for benefit in kind. There are other taxes that can make a huge difference in the uptake.

Robert Evans: I have two things. I agree with David totally in terms of reaffirming the commitment to EVs and having interim targets aligned to 2040. One extra thing to add to that is a new collective agreement with the DNOs. At the moment, the DNOs do not invest ahead of market demand for infrastructure because those costs are transferred through the electricity price mechanism on to the general consumer, so they are reticent to invest. If we want to move towards meeting the 2040 targets, they have to invest, and that means three things.

They need to be allowed to push for investment in the low-voltage network, to reinforce it and add the charging that is needed. They need to increase staffing levels, so the long delays that our members experience when they are trying to install charge points can be halved, for example, from nine or 12 weeks down to a much shorter time. That would be a positive thing, because otherwise we are not going to get the infrastructure that we need quick enough.

The third thing is working with industry towards smart or managed charging. Smart or managed charging for demand load balancing will help, absolutely, but it is not in itself a solution. It is a short-term measure, and we need long-term grid reinforcement of the low-voltage network if we are going to transition from petrol and diesel to electric. We need a collective agreement between Government and the DNOs that allows them to make that investment.

Rasita Chudasama: I agree with everything the panel members have said so far, but would add two alternatives into the mix. Nottingham believes that a targeted diesel scrappage scheme is what is needed. It is cost prohibitive to get all the most polluting, dirtiest diesels off our roads, but if it was targeted at taxis, for instance, that would unlock so many benefits across towns and cities and across the UK.

The second aspect is a challenge back to Government to lead by example, through procurement and through their own vehicle choices, for instance in the NHS and the health sector, where there are massive problems across the country with parking. They should get into their fleets and convert their vehicles to cleaner vehicles, as should councils. It goes across the board.

Matthew Eastwood: I have nothing to add to that.

Rasita Chudasama: Can I use one of yours, then, Matthew? I had a third one.

Vernon Coaker: Of course.

Rasita Chudasama: Sometimes it gets lost because we are fixated on infrastructure, capital, the kit that is needed and more vehicle choice, but there is a hearts and minds aspect as well. It is a new technology. You are asking people to think about their cars differently and to use a different type of technology. They have to adapt their driving behaviour if that vehicle is to benefit their lifestyle.

Getting people on the journey to understanding those benefits cannot be lost in the mix. We can put charging infrastructure in everywhere, but that does not necessarily correlate to people going out and buying these vehicles tomorrow, so a reference to hearts and minds and behaviour change is needed. The Government are doing things. There is a national Go Ultra Low campaign with some of the vehicle manufacturers, but a continuation and expansion of that to reach more people would add value.

Q228 **Vernon Coaker:** Let me just pick up on that, because it goes on to the next question I was going to ask about attracting investment into the charging infrastructure in the UK, before I come back to co-ordination. I will ask you, Rasita, because it builds on the hearts and minds point. At the end of the day, if the Government are to achieve that, do they have to set out a much more coherent policy drive that sets up a vision of where they want to go? Otherwise, people are going to hear a bit about it, but there is no confidence in it, either from the public or from the private sector in terms of investment. Do you agree with that?

Rasita Chudasama: Absolutely. We would definitely welcome a coherent national electric vehicle charging strategy. If we knew what we were working to, it would just make life easier. In the absence of that, you have pockets of funding being made available to councils. They are resourced and skilled up to be able to access the funding, but everyone is doing it slightly differently, so there is no uniform approach, there is no consistency and there are gaps in the network. Having a national plan would definitely add value, and understanding the electrical challenges and setting them out clearly would benefit councils.

Q229 **Vernon Coaker:** There was the delay in the £400 million charging infrastructure investment fund. The fact there was a delay and some confusion around that does not help, does it?

David Martell: We were a little mystified as to the objective of this fund, because it is not a subsidised fund. It is a commercial fund, where you pay commercial rates of return. We operate in the private sector and there is no shortage of capital. If you have an adequate business case, as with any business, you can raise capital. Chargemaster is well funded, but we know at least four or five of our competitors are equally well funded.

As we see it, the main thing that will drive that availability of capital is clarity on the rate of growth of EVs. Along with the electric vehicles goes the charging infrastructure. We see a straight correlation, about 10 cars to one public charging point, so you can do the sum for how many you need. All we need is clarity about how many vehicles there are going to be in 2020, 2025 and 2030, and Government can control that by influencing the tax element. If that is the case, the capital will be there; rest assured. I do not see that the delay in the Treasury-sponsored fund has had any impact at all.

Q230 **Vernon Coaker:** It is interesting, because it is about stability of public policy, is it not? There are the various taxation things that have or have not been done, the plug-in grants and the preferential rates on vehicle excise duty. They should not be changed every year. The Government have to be certain. What is the time period for that? Do they need to be certain over five years or 10 years? Do you see what I mean? Governments tend to change from year to year in terms of policy. That is perhaps an exaggeration, but you understand the point I am making. What is the stability that is needed? Is there a limited timeframe of, say, five years?

Robert Evans: Alternative fuels in general have been in this space for a length of time, whether they be gas, LPG or electricity. There is a view that you need a five-year window.

Vernon Coaker: You need a minimum of five years.

Robert Evans: Yes, and that is always a challenge, because you know you really only have stability for the life of a Parliament. When there is a political consensus that something is the right direction of travel, you hope for that consensus to build into fiscal policy so it becomes normalised that this is the direction in which we want to travel.

We are in a challenging time at the moment in this space, because we have a general public out there who felt that diesel was favoured and now diesel is not favoured. If clean diesel comes along and we get the emission control on diesel to very low levels, diesel could come back in again. You have a situation where the motorist can be confused about the right decision to make. It is unfortunate that, at this current time, when diesel is deemed to be bad, we do not have the full range of electric vehicle alternatives that we want, because otherwise I am convinced we would have had a faster, greater substitution. People are holding on to their cars.

In the short term, you will get these blips, but it is important for the long term to set this as the direction of travel in which Governments are going, to have that joined up internationally, and to recognise that this gives the motor industry certainty, because it will not move off the back of one national market or one country market. It needs to make its investments. It is not going to increase the number of production plants that it has; it is going to switch production within those plants, so it needs a level of certainty that this is the direction of travel that Government want to pursue.

Q231 **Vernon Coaker:** Those were very interesting comments from everyone. What to do about diesel cars is an interesting question. It has affected people's confidence. In other words, "Do they know what they are doing or saying?" Secondly, alongside that, I have a diesel car. What happens to people who have diesel cars and whether they go to some sort of scrappage scheme should be in the strategy that goes forward.

This is the last question from me on this particular topic. If you look at the co-ordination of all this, who is the go-to person in Government? Who holds the ring? It seems to me everybody is responsible. Everybody is involved in this, so who is holding the ring? Who is the person who sorts it?

Robert Evans: For industry, it is the Office for Low Emission Vehicles, which we hope to work with.

Q232 **Vernon Coaker:** Do you hope or do you know? I am not being sarcastic.

Robert Evans: We know it is the place to go, but we would like it to have good leverage across the whole of Government.

Q233 **Vernon Coaker:** Do you feel that is happening at the moment?

Robert Evans: It has good leverage in some areas, absolutely, particularly through to Innovate UK for the research agenda. It is joined with BEIS, so the energy part is very well connected. I would love to see its voice heard more strongly, particularly in the Ministry of Housing, Communities and Local Government and Defra. I would like Defra to be more heavily engaged on electric vehicles and zero-emission tailpipes. That is how you tackle poor urban air quality. I would like to see it being more engaged. OLEV is absolutely the go-to for us.

Q234 **Vernon Coaker:** It is better, but there needs to be greater co-ordination generally, even though OLEV is good when you go to it.

Robert Evans: It is about the others getting on board.

Rasita Chudasama: Similarly, my go-to person will be the Office for Low Emission Vehicles, because it is our funding body. That being said, we have some funding from Defra as well through the Joint Air Quality Unit, and there is now some co-ordination occurring between JAQU and OLEV, which is of great benefit. There are discrepancies across the different Departments, though. Without wanting to open up a can of worms, we have a specific issue with the definition of what an ultra-low emission vehicle is, which we have been grappling with locally because there is not a single national definition. There are variations.

Q235 **Vernon Coaker:** Is that in Government?

Rasita Chudasama: Yes, there are variations for benefit in kind.

Vernon Coaker: Different Government Departments have different criteria.

Rasita Chudasama: Yes. Is it zero-emission capable? Is it based on carbon dioxide emissions?

Vernon Coaker: As you say, we will open a can of worms here. I am sure that is something we would want to have a look at.

Rasita Chudasama: Naturally, we have gone to OLEV and kicked it up the chain. There are issues with the DVLA database as well, in the way that it displays the vehicle records. From our perspective, we want to allow ultra-low emission vehicles into our bus lane as a local incentive.

Vernon Coaker: Yes, I know.

Rasita Chudasama: Yes, it goes out to Gedling.

Vernon Coaker: It goes through my constituency. That is why I declared that.

David Martell: I think, like my colleagues here, that OLEV does a pretty good job. We have literally day-to-day liaison with it. The biggest gap I see is with the other Government Departments they mentioned, but particularly the Treasury. There is not a lot of point in giving incentives to electric vehicles if you claw them back in other ways. At the moment, if you buy a pure electric vehicle at just over £40,000, you will pay more in vehicle excise duty than on a diesel. There is not an awful lot of sense in that. There needs to be a consistency of approach to taxation.

Matthew Eastwood: Transport is devolved in Scotland, so the key part of Government is Transport Scotland, and ultimately the Minister for Transport and the Islands.

Q236 **Chair:** Following on from the issue of the role of Government in all this, for putting in place the charging infrastructure, how important are government incentives and government support?

Robert Evans: They were very important in the early days, when we were investing ahead of the introduction of EVs, and we needed to have a situation where the availability of public infrastructure was not seen as a hindrance to car companies bringing the cars or to early adopters using the cars. It is very important, in set areas, to support local government in tackling taxis, city buses and big emitters in terms of air quality.

Rasita Chudasama: Commercial fleets.

Robert Evans: Yes, for commercial fleets and last-mile delivery it is very important. Moving forward, some of the schemes have been hugely helpful. The home chargers scheme has been incredibly helpful, because otherwise people may be charging with three-pin plugs. Charging with three-pin plugs is an occasional activity you can do when visiting a family member. It should not be your go-to for how you charge your vehicle every day. You need a much safer mode of charging, and the home charger scheme has played a hugely important role in that.

We would like to see the workplace charger scheme being a little more generous in its level of funding, but across the board our members report that, where there is charging at a workplace, other people buy EVs because they can see the convenience of charging at work and they can see others using EVs. They can talk to others and find out that EVs are very usable vehicles. It has a catalytic effect, over and above what you have when you are just installing, say, at the home. Going forward, it is about the right kind of policy framework. It is about putting in benefits that allow you to move away from subsidies.

Q237 **Chair:** You have mentioned the home support and that it has worked very well, but for workplace it could be more generous. Is there any other type of support for other charging infrastructure?

Robert Evans: There is an interest to deploy very high-powered charging and more rapid charging on the motorway network. If you reinforce the infrastructure, you reinforce the local low-voltage network and you have those connections right, that is where the majority of the cost is. If you did that reinforcement, companies like David's and others would install those charge points. They do not need funding for the charge point installation per se. They need funding for the infrastructure to allow that charge point to be deployed.

Q238 **Chair:** For the charge points that you already have on motorways and at motorway service stations, have the Government had to provide support to enable that to happen?

Robert Evans: The Government initially provided support to the first wave of those units. There was support from national Government and from the European Union for them. The UK has quite a high number of them. It is one of the leaders across Europe in terms of charging along the motorway network, and those units are very well used. There is now more of a private sector business case, because you can see the utilisation on those units, for adding additional ones.

The problem is that, in those locations, they are often very constrained in terms of the local power that can be provided. It was not the intention to provide those locations with the quantities of electricity that we are talking about and are going to need, so they need to have the infrastructure investment, more so than the charge points.

Q239 **Chair:** From you conversations with Government, do you think they understand that, Robert?

Robert Evans: Yes, they do.

Q240 **Chair:** Are there plans in place to ensure this can happen?

Robert Evans: I would like to see plans in place for that in the Road to Zero strategy. It is something that we have lobbied for as an industry group.

Q241 **Chair:** Rasita, I would be interested in your experience on what support the Government provide to local authorities, in terms of putting in place that charging infrastructure. What support have you had from Government?

Rasita Chudasama: It has mainly been around the Go Ultra Low city fund, but there are only eight councils that have secured the funding, out of 78. If you add the taxi cities, the Go Ultra Low cities and the on-street cities, there are only about 20 councils across the country that have funding for charge points.

There needs to be more funding for public charge points. We have £2 million, but if we did not have that funding our charge point proposition would be completely different, because there are no suppliers coming to our door saying, "We will put this in for free for you, council". The council still has a role in helping to shape and develop a network in the local area. There need to be further tranches of funding for taxis.

I am sure every council will say this. It is the nature of the funding, in that it is competitive, that makes it so challenging. If there was an alternative way of divvying up the funding, maybe through a formulaic approach or maybe by population density, everybody could have a share and put some level of provision in, based on the local circumstances. That is where it needs a co-ordinated, joined up approach centrally.

Chair: You would not have been able to do what you are doing without the government support.

Rasita Chudasama: Absolutely not. We have been able to take the £2 million and leverage private sector investment, and this is a credit to our project team, in terms of helping to steer us through the procurement. We have been able to enhance the network, through Chargemaster's investment, to top up the funding that we have. We have been able to do things like that, but if we did not have any funding to put on the table it would have been an entirely different negotiation.

Q242 **Chair:** David, from the perspective of Chargemaster, where are you most interested in putting in charge points, and how much is that influenced by the government subsidies?

David Martell: I very much echo the comments made previously and particularly some of the comments Robert made. The money that goes into charging at home is excellent value for money. It is about £10 million or £11 million a year. It provides £500 for everybody who wants to put a charging point in at home. It is hugely important for the reasons of safety, speed and the whole experience. One of the battles we have at the moment is that we only look about nine months ahead. We do not know what is going to happen, for instance, next March. Last Christmas, we did not know where that was going to be fed out. You mentioned timetables and consistency. There needs to be a plan to say, "This is going to stay for a number of years". It is very good value for money, we believe.

Workplace was the other key area. I again echo Robert's comments. Very few people take it up, because it is more of a chore to apply for it than the £300 you get. We might talk about development planning later on, but Government might want to look at a requirement for new offices nationally to have charging points, as there is in London, for instance. It should be a requirement for offices to have charging points, for the reason Robert gave: if you have charging points for employees and visitors, people will buy electric cars. It is as simple as that. It is a huge gap in the offer. Whether that is done through subsidy or some kind of regulation is to be debated.

Q243 **Chair:** In the parlance of a dual role for Government, one of them is by subsidising and the other is just by requiring.

David Martell: Yes, of course. The requirement does not cost Government anything. It may or may not be politically acceptable, but, a bit like putting sprinklers in your office or whatever, if you have to have charging points, people will put them in.

In terms of public charging, we very much enjoy working with the public sector, in Nottingham and other areas. It is patchy. We are very fortunate that Nottingham is very positive in this approach and Milton Keynes is very positive. Some other local authorities are, but it certainly is not national.

Q244 **Chair:** It sounds like they are positive because they have had the support in order to do it and they would not have been able to without the support.

David Martell: I agree with that. I do not want to mention any names, but there are other areas that have Go Ultra Low cities funding still sitting in the bank after three years.

Q245 **Chair:** That is interesting. David, when you are working with business to put in charging infrastructure, how receptive are businesses? Do they see a business case for doing it?

David Martell: We work with major companies, such as Holiday Inn, M&B, Harvester Restaurants, Hilton and other hotel chains. Our proposal is that we will put a rapid charger in free of charge. Sometimes the hotel will pay for the electricity, to encourage people to go there. Some of our charging points are used seven or eight times a day, so it brings custom into that location. They will go and have a meal.

Q246 **Chair:** Why do you provide that free of charge?

David Martell: We gain membership and we gain usage. Under our business model, we gain revenue from the usage. It is all down to critical mass. It is not only us, I have to say; there are three or four other providers that will provide charging points in the right location free of charge. That is there. We see the public side going pretty well. I agree with Rasita: we need to look at how private sector and public sector work better together. The home charging is working pretty well. It needs consistency of approach. There really needs to be some focus on how we stimulate charging points in work areas.

Q247 **Chair:** What about the charging on motorways or main roads?

David Martell: One of the difficulties is that, as Robert says, some public money went into charging points on motorways, and one particular operator managed to get a monopoly on some of the key motorway service areas. We are contractually prohibited from putting charging points in at motorway service areas. Some of that is likely to change in 2020. We are very keen to do that, but at the moment they will not take us.

Chair: That is interesting. After this session, we might try to understand a little better exactly how that works.

David Martell: I would be pleased to have that conversation.

Q248 **Chair:** Matthew, how is it different in Scotland?

Matthew Eastwood: It is different in Scotland in a number of ways. First and foremost, the Scottish Government provide and have provided for a number of years annual funding to local authorities to install charging infrastructure, using a formula based on population of local authorities. That is a distinct difference.

Another distinct difference is that we at the Energy Saving Trust provide grant funding of up to 100% for workplaces to install charging infrastructure, which I have already mentioned. How important is this? We have done some evaluation, and in response to that evaluation 63% of those workplaces said that they would not have installed charging infrastructure without the grant from the Energy Saving Trust. A further 21% said they would have done so, but less quickly. In our view, grant funding continues to be an effective mechanism, and is essential in some instances, for ensuring that the charging infrastructure is in fact put in place.

Q249 **Vernon Coaker:** This is very interesting. In January, it was reported that just five local authorities across the whole of the UK had applied for grants to install on-street parking, with very limited amounts of money being paid out. Claire Perry and Jesse Norman wrote to councils to encourage them to apply, with £4.5 million remaining to be allocated. I am just interested. We can guess at the reasons, but what would you say about why that was, on the face of it, so low?

Robert Evans: If you live in a city and do not have your own off-street parking, you are in an on-street situation and can very rarely get to park on street in front of your house. You could install this infrastructure, but it would not necessarily be used, because these are very crowded streets. I used to live in south London, and you can be in a situation where you are parking, and one time you are near your house and the next evening you are three streets away. It is known to not necessarily be the practical solution you think it is going to be. Councils have resisted attempts to give people dedicated bays so that those using an EV can park it in front of their house.

Vernon Coaker: It is the wrong policy.

Robert Evans: It is a challenging policy. I understand the intention is to provide charging near someone's house, but the trends have worked against people. For example, there is streetlight parking, but as we have transitioned to LED streetlights the streetlights have gone away from the road, as opposed to near the road. There are some trials going on. For example, Hammersmith is progressing this as a leader, but a lot of local authorities did not see this as a good use of funding, and they would prefer to have rapid chargers in convenient locations or charging in central city car parks.

Innovate UK has put some funding towards a competition for more innovative street furniture for charging vehicles, and a lot of local authorities have attended those briefing meetings. I am looking at a situation where innovation may help, because the current products are not fit for purpose and they are certainly not attractive enough that the local authorities are interested to invest.

Q250 **Vernon Coaker:** It is a really interesting point. I do not know what the others on the panel would say, but, for example, a lot of people would assume that the reason the uptake was poor was that it only covered 75% of the cost and the local authorities or somebody else would have to pay the other 25%. From what Robert was saying, it appears that that was not the biggest reason.

David Martell: The issue was unfortunately the grant structure. It is not a matter of local authorities saying, "I do not want the money". It is the fact that the grant structure was far too complicated and it was not enough money. It often required a contribution from the car owner, and he had no guarantee that he would be able to use the charging point. The whole structure of it was not right. It is not an easy solution. There is no one solution. Robert mentioned lamppost charging.

We believe that, fundamentally, in the slightly longer term, the problem will go away, because cars will have bigger and bigger batteries. Within the next 18 months, the typical electric car will have a 200 to 250-mile range. If you have sufficient rapid chargers in your local area and you do not have off-street parking, you go and charge perhaps once or twice a week. It is not stopping people buying an electric car, we believe.

Q251 **Vernon Coaker:** Given that there seems to be a unanimity of view on this, why did the Ministers write and ask local authorities? Do you see what I mean? It seems a bit odd to me, given what you are saying, that a couple of months ago they wrote saying, "Come on. This money is there on a plate for you. Why do you not take it?"

Robert Evans: I understand exactly why they wanted to push this, because, if only 60% or so of the population have access to off-street parking, you need to have some approach to on-street. If you go two miles from here into south London, you have estates and flats, and a situation where people do not have dedicated parking. I understand exactly: if we want to drive at the ambition of 2040, we have to have the type of infrastructure that means users who do not have off-street parking will be able to charge.

Q252 **Vernon Coaker:** Rasita, what do you think? Nottingham is an urban authority. Would it be more applicable to a rural authority?

Rasita Chudasama: The on-street residential?

Vernon Coaker: This grant to encourage charging points for on-street parking.

Rasita Chudasama: Not necessarily, because in rural communities you are more likely to have off-street parking, so if you wanted to get an electric car or multiple electric cars you would charge them at your house. In an urban setting, similar to what Robert is saying, there is a challenge for local authorities. Nottingham has not applied for the bid yet, because we are working on plans.

Vernon Coaker: You are going to apply.

Rasita Chudasama: Yes. We are looking at a residential off-street proposition. On-street is just too difficult for us to entertain at the moment. We have a street lighting contract with SSE, and as part of that we have been replacing all our streetlights and setting them back against the footway. In order to have that charge point enabled, you need a separate feeder pillar to the front of the footway, where you plug the cable in, which is additional street furniture.

We have very tight terrace streets, sometimes with really narrow pavements, and there are too many vehicles and not enough spaces. We are very nervous about inadvertently prioritising or dedicating a bay, particularly where you cannot even rightfully give someone a disabled bay in some streets. Enforcing and managing that is a tricky aspect as well. We cannot just leave it to local people to figure out themselves. To activate some sort of street lighting column, and ask the residents to talk among themselves and move their cars around, is not a suitable response from a local authority. If anything gets damaged, there is a maintenance and liability risk to that as well. Those are the reasons why we have not yet bid, because we are working through all those issues and barriers.

The option that we have come up with is a community charging hub solution, where we are looking at local facilities that the council owns, near to where local people have requested charge points. About 20 residents have written to us from across the whole city and we have done some exercises to understand what local provision there might be. There might be community centres, libraries or leisure centres where there is car parking space; it is in the council's control; it is 24-hour accessible and maybe we can put charge points there. It is more commercially viable for Chargemaster.

The 25% is a barrier for other councils, because at the moment the cap is that you can bid for up to £100,000, and in order to bid you need to supply fully costed quotations. In order to have the prices, you need to have gone to market, but at that point would you have gone to market to secure a provider, when you do not have the cash? That practical barrier is quite difficult for councils to navigate.

Q253 **Vernon Coaker:** Thank you. Just on that, Matthew, how big a priority should this be for local authorities, among all the competing priorities for cash, for time, for money and for staff? You have all of this. You are talking to the converted to an extent. We all agree. It is just how you do it. Whether it is housing, leisure or social workers, how big a priority should this be?

Matthew Eastwood: That is a good question. We need to focus on the extent to which ultra-low emission vehicles, electric vehicles and electric vehicle charging infrastructure can support local authorities in achieving particular policy aims and objectives. One I would highlight is the requirement for local authorities to reduce carbon emissions and particulate emissions. Local authorities need to focus on whole-life costs when looking at introducing electric vehicles. In a time of significant financial pressure for local authorities, ultra-low emission vehicles have the potential to significantly reduce operating costs, so long as they are managed effectively. Within that context, while there are a number of different competing priorities, there are clearly elements of the requirements placed upon local authorities that ultra-low emission vehicles can support. In that context, they are important.

Q254 **Vernon Coaker:** Government should probably look at it like that as well. David, do you have anything to add?

David Martell: On what sort of priority it should be?

Vernon Coaker: Yes. Obviously there are competing priorities. We all know that; that is the real world, but how big should this be?

David Martell: There is no one solution to charging at home if you do not have off-street parking. As for the idea of hubs, as Rasita is aware, you might be able to walk a short distance and charge your car. Milton Keynes has a similar situation called the "Milton Keynes Promise", on the same ultra-low scheme that Rasita received some money from. If you buy an electric car in Milton Keynes and you do not have off-street parking, Milton Keynes will commit to putting a charging point in very close to your house.

As battery capacities increase this will become less of an issue. You will be able to charge twice a week maybe, at the local hub or whatever; you will not need a charging point dedicated for yourself. On the workplace situation, I have a charging point at home and I use it infrequently because I can charge at work. If you can charge at work, you do not need to charge at home.

Vernon Coaker: Rasita, do you have anything to add?

Rasita Chudasama: Just thinking about the bigger picture, if you have a diesel car you do not expect a petrol station to be outside your house, because you know it does not matter where you go: anywhere in the country, you will be able to fuel up and do whichever journey you are doing. That is what you are competing with in terms of the mindset; people want that level of convenience. Using your analogy of mobile phones, I charged my mobile phone last night; I could top it up at work or at a friend's house; I could even put it on charge at the airport. That accessibility of charging is required.

Vernon Coaker: And knowing it is going to be available.

Rasita Chudasama: Yes, it is the confidence, visibility and reliability in a network where you can be charging up while you are in the supermarket. A lot of EV drivers want to be putting their cars on charge and be doing something else at the same time. They do not want to be sitting in a petrol station waiting for their car to charge for 20 minutes. They would rather put it on charge, go to a local shop and do something, then come back when it is ready and go off again on their journey.

Robert Evans: I work with a lot of cities and they have a whole set of different priorities to progress, most particularly social care and an ageing population. The ones I talk to have a great aspiration that their cities should be liveable cities. They are always looking to improve the economic basis of their towns and cities. They are looking to attract jobs, people and housing. They are looking to make their cities go smart. All those things improve the nature of the cities in which they are governing, and that is a continuously ongoing process. I feel that the officials own that. Sometimes I feel the locally elected people are slightly different; they can have a number of factors.

We have to allow a situation where the market ultimately delivers charge points and the infrastructure that we need. But, for cities, because electric vehicles deliver so many different benefits, most particularly zero emissions, there needs to be a compact or agreement between national Government and local government whereby we have e-mobility as a key part of zero-emissions cities and driving out air pollution. Whether you do that through cities being able to bid for funding, winning it competitively and then applying that, or whether you apply a levy or support for them locally, you could go either way.

For me, I like it where cities can apply for funding, because then they have to win a competitive case that they are going to add value and that is assessed by national Government. National Government can say, "This city's plans for e-mobility are better than that city's. They have won this funding in competition". That funding gives them support to provide and progress locally using local knowledge, working with the private sector to deploy charge points to support e-mobility in their cities. It needs a process.

If you just provide everyone a flat fee, you are not necessarily getting the commitment, the management, the resource or the expertise that you would ideally like. I am pleased that it works in Scotland. I like the process and I think the industry likes the process whereby the cities have a clear point of view, are highly progressive and work effectively with industry because they have won funding competitively through a good proposition for how they are going to improve the liveability of their city.

Q255 **Vernon Coaker:** Lastly from me on this area, we heard a bit earlier on about how taxation and fiscal policy can encourage more charging points and take-up, and direct support through grants for local authorities can help influence that as well. I was also interested in this idea that planning requirements and planning obligations would help. Do you believe that the provisions in the new draft National Planning Policy Framework go far enough to promote charging infrastructure in new developments and new parking areas, or should they go further?

Robert Evans: Members' feedback to me is that they are not powerful enough; they are not progressive enough.

Q256 **Vernon Coaker:** Very quickly, because we are pushed for time, do you have an example of what should be done and is not?

Robert Evans: Under the London planning guidance, one in 10 new parking spaces need to have charging. That is seen as an example of good practice so we are looking to see something similar rolled out in a national framework, but others will be able to advise.

David Martell: It is hugely important. It is one of the most progressive aspects that Government could have. It is quite strong in London, as Robert mentioned. We work with a lot of new developments in London where charging points are put in at that time. It is not national and there needs to be a national policy on this. It would make a significant difference, because it would help that charging at work situation, which alleviates some of the other issues.

Matthew Eastwood: Planning is devolved in Scotland and Scotland is also going through a process of renewing its planning, so I have not prepared a response specifically on that point, but if you are looking for one we can come back to you on it.

Vernon Coaker: That would be helpful, yes.

Q257 **Stephen Kerr:** Is that on the agenda in Scotland in terms of planning obligations?

Matthew Eastwood: That is probably a question for the Scottish Government.

Q258 **Vernon Coaker:** If there is anything you can add to that, it would be helpful if you could send something in. Rasita, is there anything you want to add on the National Planning Policy Framework?

Rasita Chudasama: I am not too familiar with the National Planning Policy Framework. There are examples of local authorities implementing their own measures and London is one example. We are looking at opportunities through our local plan, where we see fit, but there have been missed opportunities as well. There were planning applications for supermarkets, for example, that we did not condition, which probably would have made sense, in hindsight.

Part of the challenge is pitching it at the right level; it is knowing the minimum number of charge points per type of development. The Black Country has an air quality supplementary planning document, where it has put a lot of detail into different types of developments and the minimum standards that it requires, which is probably another example that other councils can learn from.

Q259 **Vernon Coaker:** It sounds as though this is very important and something that could be improved, extended and developed.

David Martell: I agree with Rasita that there needs to be a national policy, because when a supermarket wants to locate in Nottingham, Derby or wherever, if the local planning authority places a requirement on it, the supermarket does not want to spend more money than it has to and will say, "Okay, I will go to an adjacent borough". Therefore, a national policy is very important in this area.

Q260 **Stephen Kerr:** We talked earlier about the fact that no local authorities had submitted any evidence to the inquiry. We also have heard about the potential conflict of priorities: EVs versus access, broadening pavements, encouraging cycling and walking. All these are conflicting priorities. Talking about the issue of conflicts and alignment, how well do the priorities of motorists as well as local authorities, charging point operators and energy companies align when it comes to development of new charging infrastructure?

Matthew Eastwood: That is a very good question. EV owners want something that is easy and convenient to use. They want to be able to travel around the country and know that, wherever they go, they will be able to get charged, have access to a charge point and be able to use it. One of the benefits of the approach in Scotland is that we have over 900 public charge points on the ChargePlace Scotland network; 180 of those are 50 kilowatt rapid chargers. You only need one card in order to access those charge points, so there is less of the confusion that takes place elsewhere in the country.

Q261 **Stephen Kerr:** You need dozens in other parts of the UK.

Robert Evans: That is a myth. There are a few regional schemes, but often they are long distances away: there is a Scottish regional scheme, one in Devon and one in the Norwich area.

Q262 **Stephen Kerr:** Why can you not use a credit card?

Robert Evans: You can. The reality is that OLEV has pushed through policy a move towards instant access, and the industry has responded, so all new charge points being installed are going to have instant access mechanisms, be they through your mobile phone to an e-wallet or chip and PIN. That is definitely the trend. In our view, the idea that you have to have multiple cards is a myth.

Q263 **Stephen Kerr:** It might have been true at one point, but you are saying we are moving away from that.

Robert Evans: Yes, definitely. The move is much more towards instant access and payment mechanisms. That has been an education process for the hosts, because if you have a payment mechanism the charge point might cost more, but they are beginning to recognise that that is potentially a good way to go. The charge point providers themselves, even if you are operating a membership scheme, still want to gain people through instant access. It is a virtuous process and we see that as the direction of travel.

David Martell: I totally agree with Robert. It is a myth that needs to be put to bed. From last November, the Government made it a requirement for any new public charging point that went in to have ad hoc access.

Stephen Kerr: You will not have to belong to loads of schemes.

David Martell: No, you can use it with a credit card.

Stephen Kerr: Matthew, we would never have got on to that point if you had not flashed your one card, which is very useful.

Matthew Eastwood: The challenge there is ensuring that, where you have instant access, it is not prohibitively expensive and is comparable to the cost if you had a wallet full of cards for the different providers.

Q264 **Stephen Kerr:** That is a good point. Can we have alignment between all these different stakeholders, Rasita?

Rasita Chudasama: It is complicated.

Stephen Kerr: It is not easy.

Rasita Chudasama: We have what we call "Go Ultra Low ULEV champions". These are members of the public who have electric cards and, on the back of us winning the £6 million, they found us. They got in touch via social media and email, and said, "I own an electric car. What are you doing with this money? I would be interested to find out more". We have cultivated a little network, and they are a very challenging bunch. They are very interesting. They are massive advocates for the programme and we share what we are doing, our plans, and ask for their input. EV drivers want convenience, as Matthew said. They want accessibility, the best way of paying and, as is certainly true for our EV champions, the latest technology, no matter what the cost, so they are quite demanding.

Q265 **Stephen Kerr:** To that point on the owners, in Norway the club of EV owners has driven a lot of this, so your point is absolutely aligned to that.

Rasita Chudasama: Yes, it was an NGO, and then they took it national and made it all happen.

Q266 **Stephen Kerr:** Yes, that is right and it is a very powerful political bloc now.

Rasita Chudasama: Yes. It is fantastic having them. They feel that they are the special ones, they are doing something, they are going against the tide, it is a new technology, no one else has woken up to it just yet and it is their role to spread the word. They are fantastic.

Stephen Kerr: They are evangelical motorists.

Rasita Chudasama: Yes. As for suppliers, charge point manufacturers will look at what is commercially viable, the locations that will bring the best return on their investment. The DNO will look through another lens at what will minimise the strain on its network. Then there is the local authority, and we have an opinion too on what is strategically important for us. In Nottingham, we have a series of park and rides with something like 7,000 spaces. Cars sit there all day, and they could be charging while they are there, so charge points in park and rides are strategically important. Aligning all those different opinions does not necessarily correlate to the same location.

Q267 **Stephen Kerr:** It is difficult to get everyone to agree about location.

Rasita Chudasama: It is. It takes a lot of time.

Q268 **Stephen Kerr:** How do you get round that?

Robert Evans: Part of it, from a charge point provider's perspective, is about utilisation rates. If you put a charge point in a particular location and it has been used six, seven, eight times in a day or it has been used for a considerable number of hours, you know there is potentially a business case to add additional charge points in that location. If you see a charge point in a location that is hardly getting any use, there is a potential case to move that charge point to a better location. There is a continuous process of learning and informing about where these are.

The worry with this is that you have maybe one or two charge points in a railway station and other people drive past going, "If only there was one free", so having a way of capturing the voice of the customer is very useful. In the Netherlands, they have a process whereby you can feed information back to the network operators to say, "I could really do with a charge point here or there". Having said that, that is still a business decision, because they would say, "I will have one outside my house and at this location". Part of it is about taking that evidence to local supermarkets, local car parks and local leisure centres, to say, "There is a need here".

This will all happen as we move from 1.5% to 2%, 5%, 10% and 15% EVs on the road. It will be a naturally occurring process. The innovators that Rasita has mentioned will be looking for the next new technology, the next new thing. What matters, to us, is to move the mainstream market of the general public over, through early adopters and beyond. That is what we are about, so it normalises it and people do not think twice about the process; they are able to operate with maximum convenience.

Q269 **Stephen Kerr:** We have to hear from David because he, no doubt, bears the scars of trying to get these locations.

David Martell: Well, no, I totally agree with the other speakers. If you look forward, say, five to 10 years, we have a vision that every hotel, every railway station, every golf club, every David Lloyd Leisure place will have charging points and we are working with many of those. We have a programme with the AA where all AA-accredited hotels can have charging points free of charge. At the end of the day, this is going to be driven by the convenience to the motorist. It needs to be as convenient as driving a petrol or diesel car.

I totally agree with Rasita. When you are going somewhere, you tend to charge where you are doing something else: a destination charge. You might be shopping at the supermarket or you might be staying the night. Obviously, overnight charging is the best you can possibly have, so every hotel will have charging points.

Q270 **Stephen Kerr:** What are the most common hurdles you have to get over to put that charging point at that location? The motorist will want it.

David Martell: I agree with Rasita about power. We have a programme with Holiday Inn and Hilton Hotels where we are putting rapid chargers in. For probably a third of them there is not sufficient power, and to go to the DNO to get new power is a very lethargic experience, if that is the right expression. It can take a long time. Power is one thing.

Q271 **Stephen Kerr:** Is that the biggest thing?

David Martell: Probably.

Rasita Chudasama: Yes, for Nottingham, absolutely. We are on this journey; we are into implementation now. We have assessed about 50 sites and are probably only installed on two. We have put in multiple applications to our local DNO, and the support that we are getting—lethargic is one word—is underwhelming and inconsistent. There seems to be a massive disconnect. National Grid has come out and said that, if there is a mass take-up of electric vehicles, there is enough power available, but when you get to an individual DNO planner it is their decision.

We are learning that we have to compromise on what our strategy was. For instance, we wanted rapid charging hubs in our park and rides; where there is not sufficient power going into the site, the DNO is unwilling to sign off. The bulk of the investment in charging infrastructure is not in the charge point itself; it is in all the electrical works that need to be done.

Q272 **Stephen Kerr:** This is the crux of the issue, is it not?

Rasita Chudasama: Yes, so quite swiftly you are looking at it this way: "We cannot put in five; can we even put in one? We cannot put in one; maybe we can do a slower rate of charging". That is where you get the disconnect with what drivers want, so everything feels like it is a compromise.

Q273 **Stephen Kerr:** We have this Bill, which is in the House of Lords now, the Automated and Electric Vehicles Bill, which mandates, and these mandates may not be very helpful. You may mandate service stations to do something, but they might not be able to do it.

Robert Evans: That is the challenge. They talk about fuel service stations. For supermarkets, where most of us buy our fuel, that is absolutely legitimate and very relevant. For some of the petrol stations, it is more of a challenge. Interestingly, we have a lot of landlocked ex-sites in London and the like that could be opened up, because they are brownfield sites and not fit for much else purpose-wise, so they could be opened up. The Bill includes measures around managed charging and demand load balancing. That is helpful, but again it is postponing the issue that the network needs to be upgraded. We are pushing for the DNOs to be sanctioned to invest in this.

Q274 **Stephen Kerr:** Should there be more mandatory sites?

Robert Evans: No, they need to be sanctioned to invest. At the moment, if you are a resident and you want to install EVs down your street, the threat is that they will not allow you to have an EV at your house because the local substation will not be able to cope. Managed charging is their way and means of handling that, because they cannot pass the cost on to you, as the consumer. They can pass the cost on to businesses, local government and the like, so the cost is always a grid reinforcement, and you, the business, have to pay. This is a real barrier because, for example, many businesses will operate out of premises that are owned by somebody else. They are in a situation where they are a leaseholder for a period of time and they are being asked to invest in the local infrastructure, which is not their land, not their premises, not their property.

Stephen Kerr: It is tens of thousands of pounds.

Robert Evans: There can be very big sums of money involved in reinforcing a substation. At the moment, you can go on the web and see the capacity available on the high-voltage network, but the map is not yet available for the capacity on the low-voltage network. That would be a huge help, so businesses and the charge point providers knew where there was capacity. We know that the research has been done and we are looking forward to that map being made available. That is a priority. In terms of how electricity is charged for and the DNOs' prices, they have DUoS charges for the distribution and use of the system. We have to accept that there needs to be a mechanism that allows them to invest where they know there are low-voltage substations that need to be upgraded.

Q275 **Stephen Kerr:** It is a bit like pinning the tail on the donkey, you are saying, at the minute.

Robert Evans: We do not know; we have no visibility. They will know, but we do not know.

Rasita Chudasama: We had a ridiculous situation with a park and ride, if you imagine a rectangle. There is no strategic planning that happens with a DNO. As a city, we have £2 million; we want to establish a network. It is quite large-scale: it is 230 charge points across Nottingham, Derby and the surrounding county areas. We cannot seem to have a conversation with the DNO to identify, from its perspective, what would be suitable power locations. You have a park and ride; you cannot get a plan for the whole park and ride, so you have to assess an individual corner. The team has gone out. They have looked at the south-eastern corner, put an application together, submitted it; it comes back with, "There is not enough power". Then you have to go to the south-western corner, submit a whole other application, bearing in mind it might take up to three months for it to go through the process.

Q276 **Stephen Kerr:** And all the costs.

Rasita Chudasama: Yes, and all of this is at risk. This is the challenge for local authorities. You have a competitive funding regime where you have four years; it takes you 18 months to deliver; it takes you six months to get started; you have two years to deliver and spend this funding; and it takes you three months just to discuss one site. We are not just talking one site; we might be talking 100 sites, so this is challenging.

Stephen Kerr: That is fascinating. Thank you for sharing that.

Q277 **Vernon Coaker:** To turn it round slightly, it is a really important area that is not discussed or thought about more generally, apart from by the people who are involved in it. We have heard about the problem from people installing the charging infrastructure for the DNOs. We have seen a figure, however, that in some areas a very small amount of infrastructure is being installed. In many cases, the DNO is not told that that is happening. Do you see what I mean? I understand the point that is being made, but in some regions as few as 3% of new charge points are being notified to the DNO.

Robert Evans: So it is said, and this can be a situation for household and domestic. It may be a situation whereby there is a threat, because you have already bought your car; then you go to have your charge point as the next step down the chain and you suddenly think that you might be unable to operate that car. Some electricians either may not know that they need to inform the DNO or may say, "Well, I shall politely not notice the need to inform". When you are faced with a process that has not adapted quickly enough to our need and is not responsive enough, you are going to create a situation where people decide to find a way. Not large organisations, but a lot of small electricians will go, "I cannot be dealing with this. I will just not do any notification process. I just want to get it done", because their processes have not yet adapted to the world that we want to get to.

David Martell: We supply a lot of domestic charging units—about 700 or 800 a month. There is a very useful OLEV grant for that, and to get the grant you have to demonstrate that you have notified the DNO. That is not just us, but other operators as well, so I query the 3% figure. Close to 100% of all domestic home charging units have a DNO notification. We do not apply for permission; we inform them. In terms of other charging points, generally speaking, it is a requirement to notify the DNO. We certainly do with every charging point, so I question where the 3% came from.

Q278 **Vernon Coaker:** It was an analysis by the Energy Networks Association and the Office for Low Emission Vehicles.

David Martell: One thing the panel is probably agreed on is that the question of the DNO support for electrification needs to be brought up.

Vernon Coaker: That is an area that needs to be worked on.

David Martell: There is the status quo. They just see it as a cost: “Why should we do this?” It is an area that needs looking at.

Q279 **Chair:** Can I just ask Matt what the experience of Scotland is?

Matthew Eastwood: From a policy perspective, the Scottish energy strategy that was published at the end of the last calendar year identifies the need to accommodate electric vehicle charging infrastructure, working with Scotland’s two DNOs, ScottishPower and Scottish and Southern Energy. Supply upgrades are sometimes required and connection times can be an issue, but we are working with the DNOs to engage with them earlier in the process, to reduce that time. Active engagement, engaging with the DNOs as early as possible in the process to speed it up and possibly, at a higher level, talking about the overall strategy and aim, can certainly help in this context.

In terms of informing the DNOs, in the grant funding that we provide to domestic customers as a top-up grant on top of the OLEV’s grant, and the funding that we provide to workplaces for charging infrastructure, the grant conditions specify the need to inform the DNO, but they also give us the power to inform the DNO ourselves, to help ensure that the DNO gets that information. I am not sure what the figures are for Scotland. I do not have that to hand.

Chair: Thank you very much, all four of you, for coming in to give evidence to us this morning. It has been incredibly informative and has helped identify a number of issues to us, which I am sure we will raise with Ministers in due course. Thank you very much for your time. There are a few things we will follow up on, and the Clerks will do that. Thank you.