

# Transport Committee

Oral evidence: [Zero-emission vehicles and road pricing, HC 27](#)

Wednesday 23 June 2021

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Members present: Huw Merriman (Chair); Mr Ben Bradshaw; Ruth Cadbury; Simon Jupp; Robert Langan; Karl McCartney; Grahame Morris; Gavin Newlands; Greg Smith.

Questions 71 to 167

## Witnesses

[I](#): Rachel Maclean MP, Parliamentary Under-Secretary of State; and Richard Bruce, Director of Environment and Future Mobility, Department for Transport.

Written evidence from witnesses:

– [Department for Transport](#)



## Examination of witnesses

Witnesses: Rachel Maclean MP and Richard Bruce.

Q71 **Chair:** This is the Transport Select Committee's evidence session on zero-emission vehicles and road pricing. This is our third session on this inquiry. We have one panel with two witnesses. Could I ask them to introduce themselves, please?

**Rachel Maclean:** Good morning, Chair and Committee. I am Rachel Maclean, Parliamentary Under-Secretary of State and Minister for Transport Decarbonisation.

**Richard Bruce:** I am Richard Bruce, director of environment and future mobility in DFT.

Q72 **Chair:** Good morning, Minister Maclean and Mr Bruce. Thank you very much for being with us. We have had a couple of interesting evidence sessions so far. We have had evidence from witnesses commending the Government for bringing forward the phase-out dates to 2030 and 2035, and the certainty that they feel this will provide. Obviously, they have a number of asks and we are keen to put those to you. They are particularly keen to see a clear policy framework and a detailed road map for the steps that are needed for the sector.

Before I bring in colleagues on various sections, I will start on the progress and delivery. As an opener, Minister Maclean, perhaps I could ask what the Government priorities are in overseeing the transition from fossil fuel cars and vans to zero-emission vehicles.

**Rachel Maclean:** Thank you, Chair. It is a really important topic. Of course, we have set out our overall objective to reach net zero by 2050. As you said, that involves a number of steps that we are taking. First of all, we are phasing out the sale of new petrol and diesel cars and vans by 2030. That will put us on course to be the fastest G7 country to decarbonise cars and vans.

Of course, we need to be very clear about our objectives. Transport is one of the major sources of emissions. We need to set out our plans for reducing emissions from this sector, and we intend to do that in our transport decarbonisation plan.

Q73 **Chair:** When it came to bringing the date forward to 2030, was that date brought forward on the basis of measuring all the steps that were required and thinking that 2030 seemed about right when we can get there, or was it a question of, "Let's put the date of 2030 down and really put an explosion in the entire industry and make them deliver by 2030"? What was the driving point?

**Rachel Maclean:** It is interesting how you phrase that question, Chair. Clearly, there was a vast amount of analysis by Richard's team and others, presenting us as Ministers with the challenges. Those emission reductions need to be incredibly steep in transport to reach the goals that



we set out for ourselves as a Government, to reach those carbon budgets. We knew that if we didn't do anything—if we did not bring those dates forward—we would not be on track and would not meet the goals that we had set ourselves and legislated for. It was based on a vast amount of analysis and, of course, a huge amount of engagement with industry. The themes that you have just alluded to were some of the challenges that our industry partners put to us.

It has had a very positive effect on the industry because what we have seen as a result of setting out that clarity, which after all is what businesses always tell us they want, is that they have in many cases been able to accelerate their own plans. It has had an amplifying effect on the rate of progress in the automotive industry.

Q74 **Chair:** In terms of the barriers to getting to that big bang moment, what are the key barriers that you see being an impediment to delivering this?

**Rachel Maclean:** I quite like your characterisation of a big bang. It has to be a net-zero bang.

Q75 **Chair:** A zero-emission bang!

**Rachel Maclean:** Exactly. To be fair, I do not think it is going to be a big bang because we are already picking up the pace massively on the back of some of the Government policies that we have put in place. For example, there are already half a million EVs on the road, which is up from a very small number around 10 years ago. Something like one in seven vehicles sold now has a plug. We are seeing the electrification of fleets, with big businesses and major players getting on board with that agenda. They are talking about how they are going to play their part in actually reaching net zero.

Some of the witnesses no doubt talked about charging infrastructure and charging point reliability. That is something that we recognise we need to do more on. At the same time, it is a good opportunity for us to bust some of the myths that are in the public domain.

The charge point infrastructure we have in this country needs improving, but it is not as bad as some people like to make out. We have very detailed plans, which we will be bringing forward in a lot more detail, that set out exactly how we intend to have enough infrastructure, how the grid will be there to cope and how we will tackle all those barriers. There is a lot of work to do, but we are absolutely confident that we can do it.

Q76 **Chair:** You talk about the work and the policy agendas that are going to be set out. Obviously, the industry needs policy certainty. When are the Government likely to publish the following three documents? Let's go through them. First of all, the delivery plan for reaching the 2030 and 2035 phase-out dates: is there a date as to when that road map is going to be set?



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**Rachel Maclean:** Chair, let me address this head-on because I am sure you are going to ask me. We will be publishing a delivery plan, the infrastructure strategy and a Green Paper on CO<sub>2</sub> emissions.

Q77 **Chair:** Those were my three, so take them in turn.

**Rachel Maclean:** I read your mind. I suspected that you were going to ask me about all of those. They are vital. I will explain it to you and the Committee.

The delivery plan will set out the key Government commitments and all the funding that will go in to help us make the transition. The infrastructure strategy will set out the vision and the action plan for the charging infrastructure roll-out, which is addressing all those questions such as how many charge points we need, where we need them, how many need to be rapid and how we are going to solve the home charging problem. All of those are very relevant questions. The Green Paper is our post-EU regulatory regime on emissions from new road vehicles, which will actually ensure that the phase-out dates are able to meet our emissions target.

All of those three documents will be published after or very shortly after the transport decarbonisation plan. I am sure that someone is going to ask me when we are going to publish that.

Q78 **Chair:** You read our minds again.

**Rachel Maclean:** I read your mind. I am happy to pre-empt and give a straight answer to a straight question, which is that we have done a huge amount of work on the plan. Richard's team has been working flat out. We have a final draft, but the final draft that Ministers saw was not ambitious enough.

To put it in the context of the changes that we have all seen in the last year, I think the renewed ambition of this Government to reach net zero and be very clear about that ambition, and meet the objectives that the Climate Change Committee have set out for us, means that we need to raise our ambition. We need to go further than what was in the original draft, which we started doing before the pandemic. I think there is a renewed impetus on us as a Government to be incredibly serious about reaching the targets, which means that we need to work through the plan in a bit more detail.

We are still very keen to publish it very soon. That is as much detail as I can give you at the moment, Chair. We are absolutely focused on getting the document published and giving industry that certainty.

Q79 **Chair:** Let me get this right. The decarbonisation plan has to be the first plan to come out. Will the other three documents follow at certain steps or will they all come out in one go as a package?



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**Rachel Maclean:** The timing on that detail has yet to be determined, but we plan on publishing all of them in the coming months. We see them as part of the very important strategy and clarity that we need to give to the industry. Richard might have a bit more detail on some of those documents.

**Richard Bruce:** All the documents are ready in draft. It may be that the TDP comes first. It may be the Green Paper. Actually, there is a consultation on phase-out dates for HGVs as well. There is a whole lot of activity in this area. I suspect the last one will be the infrastructure strategy. The delivery plan and Green Paper could come before the TDP, but all three of those will almost certainly come before COP in November.

Q80 **Chair:** You would expect them to come before?

**Richard Bruce:** Yes.

Q81 **Chair:** We were going to ask about the decarbonisation plan. I think Gavin Newlands was going to ask about that. I cannot see him on the screen, but hopefully he is there. It might make sense to bring him in now.

I remember sitting with the Public Accounts Committee, and I think the Permanent Secretary, Bernadette Kelly, said that it may well now slip beyond the year, into 2021. I certainly remember you, Minister, at the Dispatch Box saying the spring. Now we hear that Ministers do not feel that it delivers, when before Ministers were saying that it would be ready in spring. Had you looked at it when you said it should be ready for spring?

**Rachel Maclean:** Yes.

Q82 **Chair:** Did you think it was okay then? Why have you changed your mind that it is not fit for publication?

**Rachel Maclean:** It is a perfectly fair question. Yes, I have been intimately involved with every page of this plan. I have read every single page of it. I have made copious notes. I have requested many different details and changes to it in a very fine level of granular detail. Yes, I am intimately acquainted with the plan. I have basically, personally, written various sentences of it. It is the outcome of a huge amount of work across the Department and listening to people.

We had many sessions on what we called our net zero transport board, where we took evidence and input from people in the sector, academics, the industry, people in think-tanks, people in NGOs and people with expertise in the transition to net zero for transport. It is not just us doing it in isolation in a room; we are listening to people who are able to guide us.

The pandemic put a different complexion on it. To be perfectly frank—I am sure you will know this from other Ministers—a lot of our actual resource in the Department had to be directed to the frontline pandemic



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response. I played a part in that as a Minister. A lot of my day-to-day time was taken up with dealing with supplies of critical freight, which I am sure I have answered questions on. It was the same for many civil servants.

When we were able to put resources back to the plan, it was clear that the world had moved on and the Government themselves had moved on. The Climate Change Committee had pointed to the fact that we needed to raise our ambition. We are keen in this COP year that we have the highest level of ambition.

It is fair to say that I have always intended to get the document published as soon as I possibly can, but at the same time I want it to be a good document. I would rather have a document that is slightly delayed and to have to come in front of you and be honest about it, and to have a good document that people do not find is falling short on some very key priorities.

**Richard Bruce:** One of the reasons why transport is so important in overall decarbonisation generally is that there is a proven technology that is deployable and is why there is an awful lot of pressure on moving to zero-emissions technology as fast as possible. Transport is one of the biggest emitting sectors.

Originally, the document started out as how you get to net zero for the transport sector, but it did not reflect the relative contribution of transport to interim carbon budgets, and those were not set at the time. As we have had more ambition for the economy as a whole in terms of the slope to 2050, the needs of transport to deliver more and more emissions have changed, essentially, and that is reflected in the document.

Q83 **Chair:** Was it the case that you were relatively comfortable with the document, but then other parts of Government that have to look at it as well decided that it needed to be updated for more progress in other areas?

**Rachel Maclean:** No, that is not the case.

Q84 **Chair:** You had not signed off on it at all.

**Rachel Maclean:** No. It has not been signed off. Obviously, there are internal processes that the Government as a whole have to go through. When a document like this comes out, the whole of the Government have to stand behind it. It has to start with the Department for Transport's own ambition, based on our own work and our own analysis. It was clearly not where it needed to be, given the way that the world had changed in the wake of coronavirus, the pandemic, and the impetus to build back better and greener.



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As Richard said, it has become clear that we need to raise our ambition. That is why I am not satisfied with it in its current state. We are working as fast as we possibly can to get it ready to publish.

**Chair:** I appreciate you being straight with us on that front. We will not spend too much time on this, although if that date drives the delivery of the other documents it is absolutely relevant. Gavin was going to touch on this at the end of the session, but perhaps I could bring you in now, Gavin.

**Q85 Gavin Newlands:** Thanks, Chair. Obviously, most of it has been covered. I have just a quick question. With all the rhetoric—the 10-point plan, and so on—how did we get to the point where the draft plan was produced but it was not ambitious enough? How did that happen?

**Rachel Maclean:** Gavin, I will challenge you a little bit on that. This is not rhetoric. This Government are already delivering on our priorities to decarbonise the system. Of course, the plan must set out how we must go much further in the decades ahead, but on a day-to-day basis we are delivering. We have delivered clarity to the industry with the phase-out date. We have over half a million electric cars and vans on the road. We have provided £1.3 billion in grant funding to underwrite the change. We have continued with plug-in car grants and support to people who want to purchase cars, which amounts to about £1.3 billion.

It is wrong to say that this is rhetoric and not delivering. There is change already happening on the ground. I think I have set out quite clearly why we had to raise our ambition and change our plans. You have rightly questioned me on it, and I have given you a straight answer to that question.

**Q86 Gavin Newlands:** In terms of the timing, that is a question I have asked a number of times and the Chair has already pushed on it. Given the stage it is at, and the fact that you still have to sign off and it still has to go through the No. 10 machine, realistically how far off are we from seeing it published?

**Rachel Maclean:** I fully intend to publish it very soon. That is what we are working to, with as much ambition as we possibly can. That is what the Transport Secretary wants to do. We want this thing to be published because we know that the industry needs clarity.

At the same time, the industry and stakeholders can see the seriousness of our commitment outside the plan. It is important to publish the plan, but we are already delivering against many of our goals and investing taxpayers' money in the transition to net zero. People can see how serious we are about the agenda.

**Gavin Newlands:** We will, hopefully, have you back to discuss it. Thanks, Chair.

**Chair:** We certainly know that it will have to be published by the end of



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autumn, because the other three documents have to be published by COP 26, and the decarbonisation plan has to go out first. We know it will be by then, so we look forward to it.

Let's move on. We have a number of sections to drill into in detail about what is needed to get us to hit our delivery dates when it comes to zero-emission vehicles. The first is on affordability. We will go to Ruth Cadbury.

**Q87 Ruth Cadbury:** Thank you very much, Minister. This is an important agenda and I know it is important for the Secretary of State.

You mentioned the work the Government are doing to encourage people to buy electric vehicles. We have done a poll of the public on electric vehicles, and affordability was seen as a serious problem. What guarantees can you give to people that zero-emission vehicles will be affordable both in the new and in the very important second-hand market in the next three to five years?

**Rachel Maclean:** Thank you, Ruth. It is a very important point. We want this transition to be for everybody, which is why we targeted our plug-in car grants to enable models that are lower priced to be eligible for the car grant. We wanted it to be available to more people.

As a result, what we have seen this year—we saw the same thing last year—is manufacturers lowering the prices of vehicles that qualify for the grant. The Government are sending out signals and then industry is responding. Of course, the prices of these vehicles are coming down all the time. The batteries are improving all the time, meaning that it is much more viable for an average family to buy a vehicle such as this for their day-to-day needs. Once you factor in the fuel costs and the other tax incentives such as benefit in kind, we expect the total cost of ownership to reach parity during the 2020s. We cannot exactly put our finger on it, but we expect it to be in the mid-2020s. Some studies would suggest it is around 2025.

It is worth reminding people that the costs of running an electric vehicle are much lower, dramatically lower. It costs about 1p a mile to run an electric vehicle compared to around 10p a mile for a diesel or petrol vehicle. All the time, new models are coming to the market. You can now buy a new EV for around £20,000, excluding the plug-in car grant. That does not even begin to factor in the lower running costs.

**Q88 Ruth Cadbury:** Thank you for that. Recently, the Government reduced the plug-in car grant, and the industry was not too happy about it. Similar to a question that the Chair asked you earlier, this is about criteria. What were the criteria you used in reducing the plug-in grant? What factors brought you to that decision? In due course, will you phase out the grant completely? If so, what criteria would you be using then?

**Rachel Maclean:** To pick up the remarks I made in my previous answer, it is right that when we are using taxpayers' money to stimulate a market, we should do it in the fairest way. We are using it to help people



who would not otherwise be able to afford an EV. Of course, we want society to transition to EVs to reach our environmental goals. It is right that we focus those grants on the most affordable models, which is where the mass market is, rather than on some of the expensive models, as you could argue that people who are going to buy those vehicles would be able to afford them without a subsidy from the taxpayer.

Obviously, the pot that we have is a finite amount. We had to make some decisions, given the massive increase in demand and the demand on the pot. It is not an infinite amount of money. We had to take that decision, in order to make sure that the money would go where it is most likely to make a difference.

**Q89 Ruth Cadbury:** Okay, but are we going to see your calculations, your assumptions, and the detail behind the answer to that question? It would be useful.

**Rachel Maclean:** Ruth, what detail exactly would you want?

**Q90 Ruth Cadbury:** I understand where you are coming from, but which part of the market? What levels of affordability? Who is it targeted at, given that many personal car buyers are buying second hand?

I am going to move to my next question because it is related. In the second-hand EV market, vehicles are coming in with higher advertised up-front costs than comparable fossil fuel models. You talked about the cost of owning an EV, but it is not about the pounds per mile. When you add it up, it includes the cost of purchase if you are buying second hand, and even if you are buying new, the amount you get on sale. The second-hand market really matters.

How are you going to convince people to purchase more expensive and younger second-hand electric vehicles instead of older, cheaper used internal combustion engine models?

**Rachel Maclean:** The second-hand market, as you rightly say, is a very important part of the market. The most effective way of stimulating the second-hand market is by having a lot of cars in circulation. Our strategy for stimulating that market is threefold.

First are the grants, which help reduce the up-front purchase cost, so that we get more electric vehicles into the market. Second is all the funding for the charge point infrastructure, so that people feel confident to buy an electric car. Don't forget that there is funding for local councils and for infrastructure on the street. There is charge point infrastructure across the highways network across the country, and there is funding for people to get charge points at home, so—

**Q91 Ruth Cadbury:** Sorry, Minister. We are going to move on to charge points later. How will you convince people to buy second-hand EVs rather than second-hand internal combustion engine vehicles?



**Rachel Maclean:** The charge point infrastructure is an important part of that purchase decision for people. They are not going to buy a second-hand EV if they think they cannot charge it, either at their home or when they are using it. That is very critical.

The third thing is the framework of supportive policies that we have, such as the 0% road tax and all the incentives that you get if you are driving into a low-congestion, zero-emission zone. It is a package that is already stimulating that market. I think I have some figures. Forgive me, I haven't actually got them. Maybe Richard has the figures for the second-hand EV market that I am looking for.

**Richard Bruce:** I was going to chip in. The health of the second-hand market is directly related to the affordability of new cars. Most people do not buy cars new, and most people who buy cars new do not buy them outright. They lease them or do a PCP deal. The cost of that is directly related to the residual value of the car. Because residual values are improving for EVs, it basically means that the up-front price and the monthly lease payments are coming down for them as they become more affordable.

It is a twin-edged thing. You do not want prices to be plummeting in the second-hand market because that would make new cars more expensive. We are already seeing a very healthy second-hand EV market, which is very good news both for the second-hand car buyer, with supplies going up, and for new car buyers.

**Ruth Cadbury:** Thank you. Back to you, Chair, or I think it is Gavin Newlands.

**Chair:** I will put it straight back to Gavin, and then I will come in very briefly afterwards.

Q92 **Gavin Newlands:** Thank you, Chair and Ruth. On that last point, I do not know if that is putting a more positive spin on the situation than the industry does. Certainly, KPMG thinks that it is still an immature market. It will mature and that position may well improve, but the residual values are still set quite conservatively, making monthly payments quite high.

You will be aware, because I have brought this up before in the debate the other week, of the loan situation in Scotland. I have to say that I have made use of it in the last three months. The Scottish Government have an interest-free loan for both new and used cars, which obviously reduces the monthly cost significantly. Is that something that the Government would be willing to consider and, if not, why not?

**Rachel Maclean:** Gavin, I have set out the policy on UK Government support, some of which goes to Scottish residents. They can apply to the UK Government for funding for the home charge points and the plug-in car grants. Those are all available to Scottish residents. The UK Government are fully behind the incentive schemes. As I said earlier, we



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have already spent £1.3 billion to underwrite the transition to electric vehicles.

It is fair to say that it is an immature market. It is a new market, but we are seeing it change very fast. As I said earlier, we now have half a million EVs on the road. I do not have the figure in front of me, but it was a tiny number—something like 1,000—10 years ago. You can see that exponential growth. It is right to say that it is a changing market, but that is like anything in Government policy. We need to keep stimulating that market. That is how we will see the change we want.

**Q93** **Gavin Newlands:** It is an immature market. That is certainly something we can all agree on. Surely, therefore, to drive change you need dynamic policies. Is an interest-free loan, or something like it, something that the Government would consider at any time, or are you ruling it out completely?

**Rachel Maclean:** Gavin, we have a number of stimulus policies, as I have already said. At this time, we are not looking at an interest-free loan because we have a number of other generous support packages that the UK taxpayer is standing behind to help this transition, and those policies are working. They are working, and the evidence is in the data and the fact that more people are buying EVs and making the transition. Once they buy an EV, the evidence is that they do not go back. They are very happy with the change. That is why we are going to see continued change in this market.

**Q94** **Gavin Newlands:** I am certainly happy with my change. This is my last question. When the decarbonisation plan comes out, there may well be carrot and stick disincentives in there for purchasers or users of combustion engine models. Can you guarantee that any disincentives will be balanced by incentives to make sure that the carrot and stick are of equal size?

**Rachel Maclean:** If I understand your question, you are asking about disincentives for ICE cars. Is that right?

**Q95** **Gavin Newlands:** We have been talking so far about incentives, whether it is a plug-in grant or interest-free loans. There is obviously a balance, which is to drive people from combustion engine cars to electric cars. My fear is that we will do that far too early, when the prices are not equitable. Can you guarantee that, if there are disincentives planned, they are matched or exceeded by incentives?

**Rachel Maclean:** It is not that I do not want to answer your question—it is just that there is a lot of detail in the plan around the policies that we are bringing forward. The words that you have used are a little bit of a subjective judgment.

We have a very strong set of policies that support the transition. The approach of our Government at the moment has been to use taxpayers' money to help people buy cleaner vehicles across the board, across all



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kinds of vehicles. That is the approach that we are going to continue to take.

As you rightly said yourself, we have to maintain an agile approach because we are not outcome neutral. We need to reach net zero. All policies will be under review to help us do that. I am certainly not going to give any guarantees about what will or will not be in the plan at the moment.

**Gavin Newlands:** I tried. Back to you, Chair.

Q96 **Chair:** Minister, should hard-pressed taxpayers expect a Conservative Government to be subsidising people to purchase electric vehicles in circumstances when they could not afford to do so?

**Rachel Maclean:** Chair, you are absolutely right to talk about the fiscal responsibility of all Conservatives and this Conservative Government. That is why, in my previous remarks, I made constant references to how we target taxpayers' money.

There is a strong argument, which our Government have stood behind, that we should use taxpayers' money to stimulate the purchase of individual cars when we are reaching a broader goal and when the market is immature, as some Members have said. I personally think that is the right thing to do. It is right to stimulate that early market.

At the same time, we have been clear that that support will not always be there. The overall quantum of support is of course a matter for the Chancellor and the Treasury, but it is right to stimulate those early markets and to drive the transition. Actually, the policies have evidently worked. The data is there. That is why we need to think about where the stimulus needs to go in the future in order to continue the pace of change.

Q97 **Chair:** It seems quite similar to the solar market that the Government subsidised, and then withdrew when they felt that the market was mature. You said we now have a very successful EV market—I think you said it was over 6% or one in seven cars—so do you think the Chancellor will now say that the market is mature and we should be putting the subsidy into public transport, which he is already doing with his £10 billion a year on keeping the rail service running?

**Rachel Maclean:** I clearly cannot say what is in the Chancellor's mind, but we all know that it is his first duty to balance the books. Of course, he is going to be looking across Government for where we use hard-pressed taxpayers' money, especially at this time when we are recovering from the pandemic.

You are right to say that throughout the pandemic we have continued support. We have used taxpayers' money to focus on the really important goals of tackling climate change through stimulus to the market and through public transport investment.



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**Chair:** We are going to move on to another section, which is the idea that, rather than the taxpayer subsidising, maybe the motor manufacturers do that between themselves. We will look at this angle with regard to vehicle supply and the role of regulation via Grahame Morris.

**Q98 Grahame Morris:** Good morning, Minister and Richard. The Chair is quite right: my questions relate to vehicle supply and the role of regulation. I want to ask, Minister, about the recommendations of the Committee on Climate Change.

Before I do that, I want to ask whether you believe that the necessary capacity and production facilities are in place to manufacture electric vehicles here in the UK. The reason I ask that is that you will be aware of the controversy around the proposal of Melrose, the parent company of GKN, to close their manufacturing plant in Birmingham and transfer production to Europe. What are your thoughts on that? Are you in discussions with BEIS Ministers about maintaining capacity and infrastructure within the UK to supply the electric vehicles we need?

**Rachel Maclean:** Grahame, thank you for that question. I think this is an area that falls more predominantly in the portfolio of my colleagues in BEIS in terms of the industry itself. Clearly, it is a very important part of transport policy that we consider how we support vehicle manufacturers to make the transition.

We are doing that in a number of ways. The BEIS Secretary of State has set aside investment for a gigafactory. Clearly, the supply of batteries is critical for that. I understand that talks are continuing all the time and are at an advanced stage. There is support for the automotive industry through BEIS funding, to help it make the transition to production of electric vehicles.

Again, I would point to what is already happening in the industry. The Chair himself said that we need the industry to play its part. We absolutely do, and the way we achieve that is by setting very clear targets such as 2030 and 2035. We hear all the time from industry that once we set them a target, they will do what they do best. They will innovate and use our world-class brains and the automotive industry that we are all incredibly proud of and that we see flourishing. They regard this as a massive opportunity for the UK to manufacture vehicles, create jobs and to export this technology around the world.

Yes, I am incredibly confident. We are already seeing industry rising to the challenge. Many vehicle manufacturers are bringing forward their own dates for electrification. I am confident that that will continue.

**Q99 Grahame Morris:** There is a bit of ground I need to cover. You have outlined the steps that the Government are taking to get to 100% zero-emission vehicles from 2035. Can I return to the Committee on Climate Change recommendations and their proposal for phased targets on the zero-emission vehicle mandate to require manufacturers to sell an



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increasing proportion of zero-emission vehicles up to 2030? Do you agree with that? How might the introduction of such a phased set of targets affect the supply of zero-emission vehicles in the UK?

**Rachel Maclean:** I am aware of that. I am aware of other stakeholders calling for it. It is something that we are looking at closely. It is something that we will be discussing in one of the three documents that I discussed earlier. We need to look at the evidence in the round because we need to consider the impact on the industry. I will ask Richard to say a bit more about this area.

**Richard Bruce:** It is worth beginning by saying that the transition to zero-emission vehicles is only really happening globally because of regulation. Left to its own devices, it would be happening at a far slower pace.

What the Committee on Climate Change was highlighting is the difference between an explicit mandate and an implicit one. CO<sub>2</sub> from cars has been regulated for a number of years. The reason there has been a big increase in supply in the last couple of years is that the regulation of CO<sub>2</sub> that applies in the UK and in other European markets has stepped down. The only way that manufacturers can meet it is by delivering a large number of zero-emission vehicles.

The choice is less between a formal mandate and an informal one. If you just do CO<sub>2</sub>, they cannot meet those targets as they get below 100 grams per kilometre without doing zero-emission vehicles. You could do a CO<sub>2</sub>-based target or explicitly carve out the zero-emission element and regulate the internal combustion engine rump in a different fashion, but you will still be able to drive zero-emission adoption through either route.

Q100 **Grahame Morris:** Thank you, Richard and Minister, for clarifying that. I want to ask about tailpipe emissions, but can I pick up on the point about regulation driving the transition to all electric vehicles?

Some years ago, I was very much involved with the campaign to develop biodiesel as an alternative green fuel. Again, that was driven by regulation and a reduction in tax rates that made it financially viable. In order for the UK economy as a whole to benefit from the development of a new industry—for me particularly, it was Teesside—it was necessary to do other things to ensure that the subsidy from the British taxpayer was not being exported abroad through the refinement of palm oil, in that case, rather than an industrial crop for biodiesel.

Regulation is important, but I do not want to lose sight of the fact that we must not set up the regulations in such a way that highly skilled British jobs like those at GKN in the west midlands are lost. There is a benefit to the economy in ensuring that the way the regulations are framed protects British jobs and allows us to benefit from the growth.

My question is about consulting on the definition of significant zero-emission capability for hybrid vehicles. Maybe Richard can help here.



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When will manufacturers and customers have clarity on the levels of tailpipe carbon emissions from new hybrid vehicles up to 2035? The Minister talked about the importance of clarity in her opening remarks, so I wonder if you might give us a bit of clarity there. I do not know whether that is best for Richard or the Minister.

**Rachel Maclean:** I can start, Grahame, if that's okay. Can I respond to your earlier point? I think you are completely right, and of course Teesside is an area where the Government have made significant investment in all forms of industry in order to create new British high-skilled jobs. It is a key part of the levelling-up agenda. Now that we have left the European Union, we are in a much stronger and freer position to do that across our economy. Of course, I, as a Transport Minister, am absolutely determined to see that taking place in transport, and it already is. The evidence is in front of our eyes.

Q101 **Grahame Morris:** But let's not export those skilled jobs from GKN in the west midlands because once they are gone, they are gone.

**Rachel Maclean:** I do not know the particular case that you are talking about. Many jobs have been created on the back of direct Government investment in areas like Teesside and the west midlands already. Part of the Prime Minister's 10-point plan is to invest in the green technologies of the future, and it is already starting to stimulate private investment to see new industries and new technologies creating high-skilled British jobs. Of course, all the work in the Government is going on helping people move into those.

Q102 **Grahame Morris:** Minister, I do not want to have a row about this, but please have a look at EDM 235. Would you answer the question about tailpipe emissions and give us a bit of clarity, if you can?

**Rachel Maclean:** Of course I will, Grahame, but I could not let that go unchallenged. It is a very important point.

Q103 **Grahame Morris:** It is a very important point, especially for the people who work there and in the supply chain.

**Rachel Maclean:** Of course it is. I grew up in Birmingham; I am well aware of GKN. I just don't know that individual case, but I am more than happy to ask my BEIS colleagues to look at it for you.

Q104 **Grahame Morris:** I will send you some details. Thanks.

**Rachel Maclean:** I wanted to respond to that because, of course, it is a serious issue when anyone loses their job.

When you talk about clarity, we need to do that. What we are intending to do is to publish the three documents that I referred to earlier. We need to talk about exactly what will be permitted to be sold after 2030 and 2035. We need to do that for the industry. We will be setting that out in our delivery plan, which will talk about the precise definitions that will



give industry that clarity. I don't know whether Richard wants to add a bit more detail on that point.

**Richard Bruce:** It will be in the Green Paper, Minister. There is a whole section in the Green Paper about regulation. There is a spectrum of options. Some hybrid manufacturers can make the case that you can deliver a significant amount of zero-emission mileage with existing full hybrid technology because they do a lot of their journeys only using a battery pack. The other extreme is that you can say it is only a plug-in hybrid with a zero-emission range that goes up to 20, 30, 40 or 50 miles potentially.

The issue with plug-in hybrids, of course, is that they only deliver in zero-emission range if they are plugged in. There is a spectrum of options, but it is only a five-year period. Obviously, in that period, because the market knows that, from 2035, 100% of vehicles will have to be 100% zero, it may be that some choose not to pause in the hybridisation space. The idea of having that period was to allow phase-in for certain manufacturers, especially those who have a lot invested in hybrid technology. It is definitely a lot cleaner than some other technologies that are out there.

On your point about the industry and the supply chain, it is worth clocking that the creation of a very positive and supportive environment in the UK was one of the reasons that certain manufacturers came here in the first place. The reason why the Nissan Leaf was built in Sunderland and there is a battery plant there is that there was a package of continuous support with the plug-in car grant, and infrastructure grants as well. The reason Toyota chose to make their hybrids in the UK—the first place outside Japan—was that we had a very strong set of policies and tax incentives around ever-cleaner vehicles and they could see a certain market here.

The move to clarity and the ambition on zero emissions only makes the UK more attractive, I think, for those sorts of inward investment. There will be changes along the way because this is a quite terrifying global transition for the automotive sector, as it moves from something it has been using for 100 years to a wholly new technology.

**Grahame Morris:** I am afraid there are some other factors that have come into play since Toyota made that decision. I will write to the Minister with details because a recovery plan has been put together for GKN. I am conscious of time, so I will hand over to Gavin Newlands, who will ask some questions relating to the charging infrastructure. Thank you very much for your responses.

**Chair:** I think it is Simon Jupp who will start on infrastructure.

**Grahame Morris:** I apologise.

Q105 **Chair:** I want to ask something on this section as well. I want to come back to the concept of the ZEV mandate and push you a little on this,



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Minister. Obviously, we have the presidency of COP 26, so surely there is a duty on us to come up with innovative ideas that other countries can copy.

Policy Exchange, who gave us some very good evidence, argued that a ZEV mandate is a more cost-effective approach to ensuring electric vehicle uptake than current purchase subsidies such as the plug-in car grant. With that in mind, rather than hard-pressed taxpayers paying to kickstart the market, you could have motor manufacturers who do not sell enough zero-emission vehicles in the UK having to buy credits from manufacturers who do, and then they can reduce the price. What's not to like about that idea?

**Rachel Maclean:** Of course, there is a lot to like about the part that industry can play, and is already playing. It is worth saying that in my discussions with industry there is always a changing mindset, as Richard has just said. This is a huge transition for them, and it is right that we work with them. Grahame has highlighted individual cases where it is very difficult for some individuals or businesses to make that transition. We need to take the industry with us. We need to work with industry. It is right that the Government do that when we are talking about such seismic changes.

Look, I do not want to rule out a ZEV mandate. It is one of a number of options that we are looking at. I do not think it is a binary choice. I do not think it is a question of Government or industry. It will always be some combination of both. We are working through some of the detail, which Richard alluded to earlier, about the actual impact of a ZEV mandate and whether that is the most effective way of doing it, or whether you do it through the regulatory approach.

In a sense, we don't really mind what mechanism we use. We just need to get to where we need to go. We need to reach the emissions targets. The work at the moment is very much getting into the detail of how we do that.

Q106 **Chair:** You are not ruling it out, but when are you going to make a decision as to whether you would rule it in as a design concept that could be introduced?

**Rachel Maclean:** Work is happening at the moment. Those discussions are happening inside our Department, and they will be exposed as we move to publishing the documents, which as I said earlier will be before COP.

**Richard Bruce:** We need a new regime for regulating CO<sub>2</sub> from vehicles now that we have left the EU. Basically, we have moved the existing regime over into UK law, but there is the opportunity to do something completely new or to use the same framework and have more ambitious targets.



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The actual detail for the industry is less about whether there is a mandate or a CO<sub>2</sub> tailpipe regulation, and more about the shape of the curve. If you go too aggressively, you may increase the price of the vehicles, which might mean people end up hanging on to their cars longer, which will produce more CO<sub>2</sub>. There is an optimum shape of adoption that gets you to 100% as fast as possible but does not mean that you have lots of 15-year-old cars driving around, and companies can still make money. The detail is going to be the thing rather than the principal mechanism.

The Green Paper will be the launch of a consultation engagement on the principle of the framework. There will be more consultation about the shape of any regulations going forward.

**Q107 Chair:** I have seen a curve from one of the manufacturers. They just do not believe that you can get to 2030 without an injection of radical policy ideas such as the credits idea. Have you seen those curves as well? They suggest you cannot deliver it unless you massively subsidise it through the taxpayer, which sounds like it is being phased out. Therefore, something else is going to be needed.

**Rachel Maclean:** Of course, something else is needed. That is why we need to look at the regulatory regime. It is fair to say that we are quite often challenged by people, when we are making new policy in a new area of high ambition, that this or that cannot be done. Often what happens is that when we make the policy, they do it. That is because we have an incredibly agile and dynamic industry in this country. There may well be voices saying that this cannot be done, but actually it is our job to show them how it can be done and provide support where it is needed.

**Richard Bruce:** It is a very difficult industry to ride two horses in for too long. The idea that a manufacturer can do both internal combustion engines and mass market battery vehicles or other zero-emission technologies side by side for decades is not the way for them to make money. It is in their interests that globally everyone is regulating to bring zero in as fast as possible. The market is shifting globally. They will have to shift to that manufacturing. The question is the pace at which it happens, and whether the UK can be the vanguard of that change.

No one has talked about consumers. Ultimately, this will be a completely subsidy-free market because the product is, in many respects, far better than the one it is superseding. It is silent, fast, very cheap to run and has very low maintenance costs. There will be lots of consumer demand for the product. There is a price gap at the moment, which is worth acknowledging, which is why there is support in place. Ultimately, that will not be required.

**Chair:** The same big manufacturers that perhaps are not delivering the goods right now would have been the same manufacturers that would have lobbied against you bringing the date down to 2030, but you ignored them then. Maybe you will ignore them again when it comes to



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the ZEV mandate. We will see.

Back to where Grahame said we were going, which is the charging infrastructure: national, regional and local delivery. I think I am right in saying, unless I have missed our WhatsApp exchange, that Simon Jupp is going to lead us. Is that correct, Simon?

**Simon Jupp:** No, it is not. I will be going north of the border to my colleague, Gavin.

**Chair:** Grahame was spot on, as ever. Gavin, over to you.

Q108 **Gavin Newlands:** Grahame is rarely wrong, Chair.

Minister, the Government have said, and you reiterated this morning, that they “will ensure charge point infrastructure is rolled out efficiently across all regions to deliver on the Government’s levelling-up agenda.”

How are you using evidence from the various regional and local transport authorities to inform your strategy, looking at these three areas, if you can: patterns of charging behaviour in different areas; potential charging locations; and the types of chargers required for different locations, such as slow, fast, or rapid?

**Rachel Maclean:** I think the point you are making is, how do we make sure that we have charge point infrastructure for every type of use case and every journey, whether that is in the middle of London or in a remote rural area? Is that essentially what you are asking?

Q109 **Gavin Newlands:** Yes, and how you are working with the local transport authorities to make that happen.

**Rachel Maclean:** It is absolutely right that the local authorities are at the frontline of this. We already work with local authorities in delivering what we call ORCS, the off-road charging scheme. That scheme has been doubled over the last year, and has enabled the installation of a number of charge points in local authorities around the country.

We need to work with local authorities. They know their local areas best. They understand the needs of their residents and the travel patterns in the area. We intend to continue that, but we will be setting out in our infrastructure document a lot more detail on how we ensure that we have adequate charge points in every part of the country. That will address the questions that you are asking.

Q110 **Gavin Newlands:** As you will be aware, and I have said many times, the charging infrastructure in London is fantastic. It is excellent in Scotland as well; for instance, Scotland has just under double the amount of rapid chargers per head that England has.

In terms of local authorities, I have drawn attention to Project Pace, which I have mentioned before in this Committee, and in Westminster Hall the other week. That has had great success in Lanarkshire, reducing costs and increasing capacity massively. I urge you to look at that.



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You will also recall that I raised with you that the current provision of chargers varies wildly across England. At the moment, you have 80 per 100,000 in London versus 20 in Yorkshire, 21 in the north-east and 22 in the east of England. In the plans for 2021, the provision shows that at the moment the east of England is getting one charger per 38,000 and London is getting 2,740. Those are the current plans for this year. We have gone from having four times per head of population up to 2021 in London versus the east of England, to this year's plan of 14 times that amount for London versus the east of England. My question is, where is the levelling-up agenda?

**Rachel Maclean:** The levelling-up agenda is central to our ambitions. What we know is that most EV drivers charge at home. That is why the Government have invested in the home charge schemes that are available in Scotland, the east of England and every part of the country. People prefer to charge overnight while they are asleep. They get up in the morning and the car is ready to go. For people who are travelling long distances, we have already supported 24,000 publicly available charging devices, with over 4,450 rapid devices. That is one of the largest networks in Europe.

It is right that we focus on increasing the charging infrastructure, but it is also right that we tackle some of the myths that the charging infrastructure is not adequate. We are seeing an enormous pace of change in this market. Over 500 charge points are being installed every month by industry, and over 100 of those are rapid charge points. We have set targets for industry to reach, supported by Government. By 2023, we aim to have at least six high-powered open access charge points at all motorway service stations. By 2030, we are planning for there to be around 2,500 high-powered charge points across England's motorways and A roads. I am confident that we will have the charging infrastructure that we need.

Q111 **Gavin Newlands:** Thanks, Minister. Can I come back to you on one point? The figures for the strategic road network are certainly improving. That is not really what I am talking about. I think we can agree that we are not going to drive the change that we need until drivers are confident that, if they are going out for their weekly shopping or running errands in the town, there are charge points available for them. In places like the east of England that simply does not exist, and there are no current plans for that to exist at the moment.

**Rachel Maclean:** There are plans for that to exist.

Q112 **Gavin Newlands:** At a 14th of the rate for London.

**Rachel Maclean:** If I understand you correctly, we have already agreed that there are three ways that people will charge. Most people will charge overnight at home. Obviously, there are people who do not have a drive, so we need to address that with the on-street charging infrastructure fund that is available to the east of England and the whole of the country.



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For people doing longer journeys, there is the rapid network, which, as you said, is in a very good state. It is one of the best networks in Europe and is improving all the time with industry involvement.

There is a third use case, which I think you are referring to, which is perhaps the weekly trips and people going to the supermarket or their local town centre. Obviously, most people who have an electric car know that you do not always need to charge up at that particular location. It is great if you can, but that is not the primary need for charging.

We are also changing our support for charging infrastructure. We have introduced a new fund called the local electric vehicle infrastructure fund, which will enable local areas to come forward with bids for their own local hub, whether it is a train station or a shopping centre. They will be able to install charging infrastructure there.

As the Minister, it is my job to work closely with local authorities across the whole of the country, as I do all the time, and where we see evidence that they are not perhaps taking advantage of that funding, we encourage them to come forward and we help them to take advantage of the funding so that the people who live in those areas can make the transition.

**Richard Bruce:** I have two points. One is that it is worth clocking the vibrancy of private sector investment in this area; there are literally billions of pounds going into it. There are 190 rapid chargers going in every 30 days. The vast majority of those have no public support whatsoever. That is private sector investment. They are looking at locations where there is not currently competition and where they can grab some market share.

The Government's role in this will be to look at where the gaps are and to remove the blockages. In areas such as what we call destination charging, at supermarkets, hotels and that sort of stuff, there is no Government support whatsoever. That is happening commercially now. The role of Government is looking at the challenging strategic areas around rapid charging at motorway service stations, where there are electricity supply constraints, and on-street charging for people who do not have off-street charging and there is a challenging business case to be made. They are the two key roles for Government going forward.

On London, it is worth clocking that because London regulated to ensure that every taxi had to be zero-emission, they had to invest quite a lot in charging infrastructure to enable taxi drivers to charge their cars. That might reflect why there is a greater number of chargers in London per head.

Q113 **Gavin Newlands:** I have a quick last question. On the back of that, do the Government track figures with the industry on the take-up of battery electric sales per region in the UK to see if there is a correlation between the relative lack of investment in charging infrastructure in, say, the east



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of England versus London or anywhere else? Is that tracked? Obviously, it would be a very useful statistic to have.

**Rachel Maclean:** We have data of that nature. We look at data from all sorts of different sources. Richard highlighted a really key point about consumers and the industry. Once consumers start demanding this change, industry and the private sector will respond.

There is actually Treasury funding available that finds its way into that market, specifically for charge point investments to draw down on. It has stimulated a lot of activity in the market and is still there to enable businesses to come in and start to install the infrastructure.

**Gavin Newlands:** Thank you.

**Chair:** Following Grahame's logic, we will hand over to Simon Jupp next.

Q114 **Simon Jupp:** Thank you, Chair. Good morning, Minister and Mr Bruce. Local authorities come in all shapes and sizes, with different levels of expertise and everything else. Minister, are you confident that local authorities across the country have the knowledge and skills to support the roll-out of charge points?

**Rachel Maclean:** That is a really important point, Simon. It is a good challenge. I represent a wonderful place, Redditch. I have seen for myself how local authorities have an awful lot to do. Sometimes, some local authorities need more help in some of the newer areas of planning and policy than others. It is important that we, as a Government, have that support available.

A lot of the work we are doing is working closely with local authorities to make sure that they have the support they need, so that they can navigate the various funding pots that we are making available. We want them to be able to access that funding and put the infrastructure where it is needed. They have a crucial role to play, so it is important that we continue to work with local authorities and support them.

I referred earlier to the £90 million pot, which is the local electric vehicle infrastructure fund. Part of that funding is specifically set aside to provide capacity for local authorities. Very often, they say, "We don't have the capacity to work through these bids." That is why the funding is there. It is to help them do that and draw down on that funding so that they can get the infrastructure in place.

**Richard Bruce:** Many local authorities have been on a bit of a journey on this. Initially, they viewed requests for on-street chargers in the same space as they viewed a parking issue. Taking a bay out of general use and dedicating it to an EV was a problem for them, as parking permits are often a very hot topic. Increasingly, they see it as a potential revenue stream for the future.

All the cars parked on the street at the moment could be signing up to local schemes, in partnership with the private sector, generating an



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ongoing stream of revenue from people who are charging every night, because they control the real estate where the end users get into their cars. It is a massive opportunity for local authorities. I think some of them are now waking up to the potential.

**Q115 Simon Jupp:** Thank you. Is it widely acknowledged in the Department that it will take quite a while for that opportunity to realise its potential? In that time, more money will have to be funnelled to local councils to help them put in the infrastructure, which will eventually create a return. Are we going to be waiting quite some time yet, Minister, and effectively subsidising the roll-out through local councils?

**Rachel Maclean:** Like all Government subsidies, we keep them under constant review. Of course, we have discussions with the Treasury. We have committed to funding, and the funding envelopes exist at the present time. They are there to meet current needs where there are gaps in the market. We have the £20 million for the off-street charging infrastructure fund. That is an ongoing fund. We have no plans to end that fund at the moment. We also have the £90 million fund, which is the local hub funding. The money is there and it is not even open yet.

Clearly, we want the money to be there to help local authorities. Yes, it will take some time, but there is an ambition and a pace behind all of this. Everyone needs to make sure that they have the infrastructure in place. Local councils also have a duty to meet climate goals. Many of them have signed up to do that. It is in their interests to make sure that they have the infrastructure in place.

**Q116 Simon Jupp:** But these pots will have to continue for years to come if we are to meet the deadlines that have now been set by Government. For a lottery winner, £20 million and £90 million would be lovely, but it is not very much in comparison to what is actually needed to roll out this level of infrastructure across the nation, is it?

**Rachel Maclean:** I do not accept that. Richard made the very fair point that an awful lot of the infrastructure that is being installed at the moment is commercially viable. It is being installed by the private sector. We are seeing massive changes in this market. For example, we have already seen GRIDSERVE come in and buy Ecotricity without any Government subsidy at all. The result of that is a huge improvement in the capacity of the rapid chargers that they operate and in the consumer experience.

It is not necessarily the case that Government funding will need to continue indefinitely, but, as I say, we must continually monitor the market. It is a very fast-changing picture. I do not think any of us could have foreseen how quickly things would change, even in the time that I have been a Minister.

**Richard Bruce:** The on-street residential charging scheme—the ORC scheme—is very traditional and grant based: “Here’s a pot of money to



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mitigate the cost of rolling out charge points on the street.” The £90 million fund is thinking about more innovative ways of doing that, where you get more bang for your public sector buck and thinking about things like whether we should have local rapid charging hubs, some sort of joint venture system or franchise deals locally. There are all sorts of possible things you could do to get the roll-out of local authority on-street charging to happen faster and make sure that you get a good outcome for the public as well.

There is an awful lot of interest in this commercially at the same time. It is much like rolling out cable TV or broadband. You are digging up the road and putting in some cable. The technology is not particularly groundbreaking, but the revenue stream is potentially very sizeable. Now that we have certainty on roll-out as well, it becomes much more investable.

**Q117 Simon Jupp:** Thank you; that is very interesting. One of the things that could hamper progress and confidence in changing from a petrol or diesel car to an electric car is the way the plan looks locally—the way it is rolled out by local authorities and transport authorities. Will the Government require local authorities to have a specific plan in place to roll out charging infrastructure before they receive funding, Minister?

**Rachel Maclean:** The funding pots that we have of course require local authorities to submit bids to them. They are subject to various criteria, as any Government funding pot is. I am not sure what exactly you mean beyond that, Simon.

**Q118 Simon Jupp:** A plan, so that it is not a scattergun approach. The worst thing that could happen is that councils just have a scattergun approach to rolling out this infrastructure. It needs to be done strategically to make the best of what we are trying to do, which is, in my view, a positive thing.

**Rachel Maclean:** Yes, it is very positive. In the Department for Transport, clearly we make funding available to reach an overall goal, which is to enable the transition to electric clean vehicles. It is very much for local authorities, who are elected to represent their local communities and know their local communities best, to decide where they should locate their charging points.

Having said that, we have a central role in Government in mandating things that make an awful lot of sense, such as ensuring that all new houses, when they are being built, either have a charge point or the ability to have one. That is a very sensible way for central Government to insist that local authorities take on certain responsibilities.

**Richard Bruce:** It is also important that anything on this is positioned within the wider context of a wider transport plan for any authority. It is not just about changing how we power our cars. It is about how people move around our towns and cities and our local authority areas. It is



positioning the opportunities for zero-emission vehicles within the context of improved public transport and more cycling and walking—all that sort of stuff. It should not be viewed in isolation.

**Q119 Simon Jupp:** I understand that you have to put in a bid, and in that bid there will be a plan and everything else. Do you urge local authorities to consult communities about their plans for rolling out these charging points? For example, my local authority have largely focused on replacing car-parking spaces in public car parks with charging points because that is the area they control and can use. Is there a need to consult communities first, more so than perhaps has been done in the past?

**Rachel Maclean:** I am thinking of the best way to answer your question. In the whole decarbonisation agenda, there is a strong and central role for local authorities to play across the piece, as Richard said. It is not just where the charge point infrastructure goes, but what is the overall need for that community? Maybe it is not charging infrastructure. Maybe what they want to do is get people out of cars altogether, in which case they want to build a new railway line or bring in a new bus service.

There is no central planning down to that micro level that—

**Q120 Simon Jupp:** I appreciate that there is no central planning; I get that, but surely there needs to be some consultation with local communities about what is going to change their landscape; what will eventually change the street in which they live with more charging points; and what will eventually change how public car parks look. Surely, local communities should be consulted before councils plough on, apply for funding and carry on regardless.

**Rachel Maclean:** Yes. With anything that a local council does, there are duties on them to consult the public in terms of their statutory duty. That is what they have to do. I do not have the exact criteria. We could write to you with what would be in the bid criteria for the charging points themselves. Any council, in any intervention that it is rolling out, whether it is planning or transport, has a duty to consult with its local communities. Councils are elected to do that. That is the democratic role that local authorities play.

**Simon Jupp:** I look forward to that information. It will be really interesting to see, Minister. Thank you both. That is very interesting evidence.

**Q121 Chair:** Minister, before I move to Greg, can I continue Simon's line of questioning? I remember some years back the then buses Minister also used the same language of its being for local authorities to determine with regard to bus services.

That attitude changed somewhat when the current Prime Minister came into post and decided he wanted to see his Government's policies delivered on the ground. We now have the bus strategy and local transport authorities being given £100,000 each, with the aim for them to



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invest in a bus champion to deliver the goods. The Government are therefore realising that you need agents on the ground in local transport authorities to deliver it.

This feels quite similar. The private sector is telling us that local authorities are key. The National Audit Office has reported that 32% of the funds that have been made available are not being used by local authorities. Don't you think it would be a good idea to put money in directly so that local authorities, certainly on the planning side, have a champion for the roll-out of electric charge infrastructure?

**Rachel Maclean:** Chair, in a sense, my role as a Minister is to work with local authorities and ensure that they understand what they need to do if they want to access this funding. There is an overall role for local authorities to produce transport plans. This feeds into that, as you rightly said about the bus strategy. That is how it is implemented on the ground.

In any question of whether it is for the local authority or the Government to do, there is always a finely balanced decision. We cannot know what is best for Battle and Bexhill, just as we cannot know what is right for Paisley and Renfrewshire, sitting in Whitehall. We must leave local authorities to have a role and represent their residents and communities, but of course when they apply for Government funding there are criteria that they must meet.

Q122 **Chair:** Indeed, but the challenge is that, if they are not applying for the funding, it suggests that they are too busy on other things and need a bit more direction from the centre.

**Rachel Maclean:** Many of them are applying for the funding. The funding is going out of the door. Again, when we see that there is an issue with some who are not as ambitious as to apply for the funding, that is when I, as a Minister, will step in, and have stepped in, to put that support in place. I think it is a question of making sure that with any Government funding there is capacity funding as well, which is what I have said already about the £90 million funding that we talked about earlier for these new and innovative forms of charging infrastructure. We recognise that local authorities need some help with that, and we have made funding available for that purpose.

Q123 **Chair:** The issue is not the funding. I am not being critical of the funding here. What I find extraordinary is that if local authorities really are to be engaged, as they need to be to deliver the goods, otherwise we cannot get to the 2030 figure, only £8.5 million has been allocated to local authorities and 32% has not been tapped. That suggests that they are just not in the game on this.

**Rachel Maclean:** Yes. When I said funding, I meant funding for capacity, whether that is people to help them write the bids or people to help them come up with the local plan. You are right; it is not just about the funding. It is about funding going to local authorities for that capacity role, to enable them to draw down on it. Richard wants to say something.



Q124 **Chair:** Mr Bruce, why is it that the Department for Transport, where you both are, has decided, in a similar concept where you cannot get take-up from LTAs, to fund £100,000 per LTA to have someone in place to deliver it, and here you are not, despite the evidence showing that local authorities are not taking it up?

**Richard Bruce:** Can I make three points? The first is that historically we funded something called Go Ultra Low cities, with the idea that they would be in the vanguard of the adoption of EV roll-out and then spread that learning across other towns and cities.

At the moment, we fund the Energy Savings Trust to act as an adviser to any local authority that wants to install charging. They are funded every year to do that, so they are there basically as a centre of knowledge to make sure that they are not hoodwinked by commercial operators.

The third point is about the £90 million fund. We are not ruling anything out as to how that gets used. It may well be that there is a way of using that funding to ensure that local authorities can make this happen faster and in a better way. We need to make sure that it is not just about direct grants for capital infrastructure; it could be about capacity funding as well.

Q125 **Chair:** Are you both feeding into the Planning Bill process? Obviously, big changes from MHCLG are on the way in terms of how the planning rules work. This would seem to fit into future space requirements. Are you both working with the Housing Minister on that?

**Rachel Maclean:** We work closely with MHCLG. Specifically, there is a need to look at new housing development and make sure that it is future-proofed in terms of the ability to install charging infrastructure in new housing. Of course, it feeds into the wider conversation about where you build houses, and whether you are actually building in public transport capacity and the overall net zero goals when you build new houses.

**Chair:** Thank you. I will leave it there, with apologies to Greg for delaying him.

Q126 **Greg Smith:** Thank you, Chair. Good morning, Minister and Mr Bruce. I want to ask a devil's advocate question. We have just spent the last 25 or 30 minutes talking about what a big challenge installing the infrastructure for electric vehicles is, whether that comes from digging up the roads, installing physical infrastructure, with lots of posts and things in the streetscape and car parks, or the issues that Simon Jupp was raising around local community consent.

Are we rushing forward? I get the priority. I get the urgency to get to zero-emission vehicles, but to quote a popular science fiction film, "There is another" in the form of the hydrogen fuel cell vehicle that requires none of this. It requires the refitting of existing fuel stations, where you stick a nozzle in a hole like you would with petrol or diesel.

Are we at risk of spending all this money and going through all this pain,



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only in 10 years' time to look back and say, "Actually, hydrogen is doing everything we wanted, and we needn't have dug up Britain to deliver this"?

**Rachel Maclean:** I think hydrogen is part of the solution. You will know that our colleagues in BEIS are working on a hydrogen strategy. You will fully understand, as we have discussed many times, that at the moment green hydrogen is not commercially viable at scale. There is clearly a role for hydrogen in heavier vehicles, and we will discuss that in a huge amount of detail in the transport decarbonisation plan. I am more than happy to come back and talk to you about hydrogen.

In the commercial market, if it was so cheap and easy to produce hydrogen for cars, manufacturers would already be doing it. That is not to say that the Government do not invest in fuel cell vehicles; they do. We actually have a very good hydrogen fuel cell network in this country. We are continuing to put investment into that to enable some fleets to make that transition.

The commercial signals are incredibly strong that battery technology for lighter vehicles is the way we are going to reach the carbon budgets and the steps along the way. I am confident that the price of green hydrogen will come down. Of course, it will need Government investment to do that. It is not there now, so we cannot afford to wait for that to happen. We need to crack on with the electrification agenda for cars and vans, which is clearly here and now, and is working.

Q127 **Greg Smith:** To push back on that slightly—I am coming at this from a devil's advocate position, as I said—the battery electric market 10 years ago was probably in that place. Ten years ago, it was only really the hyper-rich who had a battery electric vehicle. There were very few of them. It was not really economically viable, but, as you said earlier, there are now half a million of the things on the road, and it is only going on an upward curve.

How far off, in terms of the market, do you think hydrogen fuel cell vehicles are? A company has contacted me and asked if I want to trial a hydrogen fuel cell car for the weekend, and in a few weekends' time I am looking forward to doing it. How far off do you think the market is, Minister or Mr Bruce?

**Rachel Maclean:** I will bring Mr Bruce in, but what I would say about the Department for Transport is that we are focused on hydrogen as an energy source. That is why we have invested in the Teesside transport hydrogen hub to look at the commercial deliverability of hydrogen at scale. It is not there yet. Richard will answer the other part of your question.

**Richard Bruce:** It is a really interesting topic, and one that people often come back to. There are a couple of issues. One is that it is important not to conflate the reduction of the capital cost of something with its running costs and the scope for those costs to reduce. Generally, to have green



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hydrogen you need to do one of two things. Either you electrolyse water, using green electricity, or you use hydrogen that has been made emitting CO<sub>2</sub> and do carbon capture and storage. Those are the two main routes.

Either way, there will always be an efficiency disbenefit compared to battery operated vehicles. If you are taking green electricity, you either put it straight into the battery of a vehicle or you use it to make hydrogen, transport it round the country, put it back into a car and turn it into electricity again. That is just a law of physics. It will never be able to compete on running costs with battery electric vehicles unless something very radical changes, and I cannot really see that happening.

Although the capital cost might come down, the operating cost will never get near the 1p per mile that you currently get with Economy 7 electricity. The manufacturers have clocked the efficiency argument and they will struggle to ride two horses in terms of the internal combustion engine and battery. The idea that they are going to ride three and deliver three power technologies is not going to happen. That is why Volkswagen came out and basically nipped it in the bud.

The credentials of hydrogen in decarbonisation rest on its entirely being green. We were running hydrogen buses around London with hydrogen that was shipped in, emitting carbon when it was manufactured from Holland. It has to be very pure hydrogen. Also, it will be scarce. If green hydrogen is scarce, we need to look at places where there is not a viable alternative. It could be used for heating. It could be used for industrial processes. It could be used for aviation. It could be used for heavy goods vehicles. The idea is that we have an alternative in cars and vans. It is definitely more efficient, but we would use up some of the scarce green hydrogen to do that. It does not make an awful lot of sense.

**Q128 Greg Smith:** I appreciate all the points that you have made. The last point I would make in this section is that I was looking through the lens of infrastructure. I get the running costs argument. The point is, are we actually going to be at the point where we have basically dug up the country again, having done it for broadband and various other things, to install all of this EV infrastructure, to find that actually there was a solution that would have just involved the repurposing of existing fuel stations?

**Richard Bruce:** It is very easy to overstate the infrastructure demands in the move to EVs. There is an impact on the energy system. Don't forget that 60% of homes have off-street parking. All of those people do not need the road digging up. They basically need a socket on the outside of their house, and that is it. There is a need for charging for long-distance journeys at motorway service stations, which we are mitigating through the rapid charging fund. There is a problem with people who do not have off-street parking, but that is the minority.

On the argument that we would have to dig up the whole country, it depends on battery sizes, technology, wireless charging and all that sort



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of stuff. Even then, the net carbon impact across the economy as a whole is definitely less with the majority of vehicles being run on battery than it would with the majority being hydrogen. Ultimately, it is about the system impact. That is not ruling out hydrogen cars in certain use cases. If you are going a very long way and you need very fast refuelling, they could be absolutely the right thing.

**Chair:** Ben has just pointed me to the time. It would be hypocritical of me to do it because I have taken a lot of it. I will keep myself zipped. We might need to be more succinct with our questions and answers to get through. It is all my fault. Before we go to Project Rapid, Karl wants to come in.

Q129 **Karl McCartney:** Thank you, Chair, for putting your hand up on that one. Good morning, Minister, and your departmental colleague. I want to go back to what would be called range anxiety and talk about driver anxiety.

A quick question to both of you. Are either of you aware how long a fully charged electric vehicle will last, just running a heater or its air-conditioning?

**Rachel Maclean:** Do you mean not driving?

**Karl McCartney:** Yes.

**Rachel Maclean:** No, I don't. I have an electric vehicle, but I have never done that.

**Richard Bruce:** It depends on the car.

Q130 **Karl McCartney:** I am going to put a scenario to you both. It is not London driving; it is real-world driving in reality in the rest of the country for many people on the motorway network. There is congestion. There are accidents. There are whatever delays. Sometimes, it can be hours. You and I both know that electric vehicles on those motorways, should they be half the vehicles on the motorway, will be sitting in traffic for a long time. Human nature being what it is, people will have their heating on in the winter or air-conditioning on in the summer.

How are you going to deal with that, or what planning have you put in place? You have told us lots about your planning, but we have not seen any as yet. What emergency planning is in place for people who have electric vehicles and are stuck on a motorway? There was an example back in 1996 in south London, when people were stuck for eight or 10 hours on the M25 when the snow came down unexpectedly. How are you going to rescue them?

**Rachel Maclean:** Look, it is really important that we discuss real-world impacts. That situation is going to have an impact on people driving petrol and diesel cars as well because, of course, they are going to run down their fuel.

Q131 **Karl McCartney:** Not as quickly as somebody in an electric vehicle.



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**Rachel Maclean:** No, I accept that. There are two points. As we have already said, the capacity of battery technology in this country, underpinned by £384 million of investment in the Faraday Institution, is increasing battery capacity all the time. The vehicles that are coming to market have a longer-life battery—

Q132 **Karl McCartney:** You are giving us that, but you and I both know that in reality electric vehicles are going to run out of charge, and they are not going to be able to move on a motorway. How are you going to move them? They cannot be towed, and they cannot be pushed. Are you as a Government going to invest in hard shoulders? Are they going to have charging points? What about our lovely misnomered “smart” motorways? You are not going to be able to get a portable charger down there. You will have to have one every one and a half miles in a siding where people can charge their cars.

**Rachel Maclean:** There are a few things to say. I think the battery range is a relevant point. That is part of our planning. Secondly, the Project Rapid work we are doing is also very important. If there is a rapid charging point at every motorway service station in the country, those people will not have very far to go in order to get off the motorway.

Q133 **Karl McCartney:** But if they are stuck on a motorway, it does not matter how many charging points you have at a petrol station—

**Rachel Maclean:** I understand. I have been stuck—

Q134 **Karl McCartney:** —or at service areas. Your civil servant is basically saying that you are putting all your eggs in an electric vehicle basket, and I am saying to you that in the real-world experience what emergency planning are you putting in place to ensure that we are not going to see mothers with their children stuck on motorways for six or eight hours—

**Rachel Maclean:** I understand the problem. I am trying to deal with the root causes. I will come to your actual practical challenge in a moment, if I may.

The first thing is investment in battery technology so that it lasts longer. The second is having charge point infrastructure regularly. The third is a very key point. Most people, when they are doing a long journey, look at Google Maps. They see where the traffic is and plan their journey, just as you do with a petrol car. You have to plan your journey and make sure you fill up. You need to do the same with an EV.

Some of the work we are doing in the consumer experience work will force charge point operators to open up their data, so that people have a much clearer idea of where the charge points are and where they can go to get that charge. If they see there is traffic on their journey, they will be able to turn off and charge—

Q135 **Karl McCartney:** Minister, your modelling is obviously very clean but—

**Rachel Maclean:** If I can—



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**Karl McCartney:** —in the ideal world we would not have congestion when people broke down or there was an accident on the motorway because everybody would be looking at Google Maps and leaving the motorway. That does not happen. People sit on motorways for four, six, eight hours. In an electric vehicle, they are not going to go anywhere.

**Rachel Maclean:** If I can answer your point directly, in terms of the actual rescue, and the breakdown of electric vehicles, the industry is working through that. There are, of course, ways that you can tow away an electric vehicle in the event that it becomes broken down. Of course, no one wants any vehicle—whether it is a petrol or an electric vehicle—to break down or run out of charge or petrol, but the industry will be able to respond to that.

There are standards that we are working through with manufacturers and the breakdown industry so that it is clear how they can come to the aid of an electric vehicle in the unfortunate event that it is stranded on a motorway.

Q136 **Karl McCartney:** Finally and very quickly, have you actually done any emergency planning for the higher incidence of electric vehicles not being able to move, having encountered congestion or breakdowns on a motorway?

**Rachel Maclean:** Not in those terms because I do not actually accept the assumptions that you are putting to me. Richard wants to come in.

**Richard Bruce:** The rescue services have deployable kit to rapidly charge broken-down vehicles. You can buy a battery pod and you can charge up an EV by the side of the road if they have broken down. This is becoming an increasing concern for them. The technology exists.

I think you might be overstating the risk here, in a sense. I am trying to do some maths, but—

**Chair:** It might be worth an exchange of correspondence on this.

**Rachel Maclean:** I think so.

Q137 **Karl McCartney:** If I am overstating it, let's see what happens when there are 50% electric vehicles in a six-mile tailback on a motorway for eight hours. Let's see how many vehicles actually move after that congestion is dissipated.

**Rachel Maclean:** We can provide you with some more detail. I think that would be the way to tackle this.

**Chair:** That would be good. Then we can, via Karl, respond to it if we wish to dig in further. Thank you, Karl. Project Rapid is quite apt. Over to Robert Lorgan.

Q138 **Robert Lorgan:** Good morning, Minister and Mr Bruce. National Grid has told us that on average it takes two and a half years to build each electricity network connection for installing charge points. With that in



mind, when will you start distributing the rapid charging fund so that work can begin on those grid connections at sites on the strategic road network in good time?

**Rachel Maclean:** The work to specify the delivery mechanism for the rapid charging fund is under way, and we speak regularly to National Grid and the electricity suppliers to take on board their feedback. It is important that we work with them. It is important that we understand how the charging infrastructure can be underpinned through the rapid charging fund. As I said before, we will be bringing forward our plans for that as soon as we possibly can.

This is a major Government investment—£1.3 billion-worth of funding—so we need to make sure that we are targeting the funding in the right way, and that we are not stifling the market by putting in Government funding where the industry can provide the solution themselves.

Q139 **Robert Largan:** On the point of making certain that the funding is targeted, we heard from National Grid that regional tenders for the money may lead to inconsistent coverage across England, which ultimately would be bad for the consumer. For sites to receive money from the rapid charging fund, would you be able to advise what the application process might be and what criteria they would have to meet?

**Rachel Maclean:** No, not yet, Robert, because we are still working through that. I meet regularly with National Grid and others to listen to those concerns directly. I understand the concerns, and that is why we are taking them into consideration in the design of the fund and the application process, to avoid exactly the point you have made.

**Richard Bruce:** Could I add to that?

**Rachel Maclean:** Of course.

**Richard Bruce:** The two and a half year timeline is about upgrading the electricity connection. You can increase the number of charge points if there is headroom in the current electricity supply. The purchase of Ecotricity by GRIDSERVE will result in greater numbers of rapid charging devices at MSAs this year. That is going to happen quite quickly.

There are three workstreams. One is around making sure we can get to the six rapids at every MSA as a minimum by 2023. That can involve Ofgem funding, which has already been announced, working with Highways England, and private sector investment.

The rapid charging fund itself was about longer-term future-proofing to enable enough electricity at strategic locations for 100% EVs come 2040 and 2050. It is happening in a number of different phases. There will be instant work happening in the next year or two to get the offer up and improved quite radically. The longer-term future-proofing work is about the 100% EVs.



Q140 **Robert Largan:** Thank you. That is very interesting. Some witnesses to the inquiry have suggested that the Government should help with the prohibitive grid connection costs in locations outside the strategic road network, such as across rural areas and in logistics hubs. It would be interesting, Minister, to know what your thoughts are on that suggestion.

**Rachel Maclean:** You are right to highlight the issue of grid costs. This is part of the work that we are doing in the rapid charging fund. We have mechanisms in place already to enable electricity networks around the country to be prepared for the increased demand reflected from the rapid uptake of electric vehicles.

Q141 **Robert Largan:** Further to that, have the Government made any assessment of the number of potential gaps or not-spots that will end up being under-served by the charging infrastructure?

**Rachel Maclean:** Yes. This is part of the infrastructure strategy. We need to make sure that we take into account all the factors and patterns in how people actually charge and how they do their journeys. We will be setting out a lot more detail on the capacity and the location of charge points to ensure that we have UK-wide coverage to underpin the transition.

**Robert Largan:** Thanks, Minister. In the interests of time I hand back to the Chair.

**Chair:** Thank you, Robert. That was rapid indeed. Let's move to managing energy demand, which will be a crucial component for delivery. Over to Greg Smith again.

Q142 **Greg Smith:** BEIS has assessed that electric cars are going to increase demand on electricity across the UK by around 20% by 2050, which, if suddenly every car is an electric vehicle, possibly seems like a conservative estimate. How concerned is the DFT about having enough power in the UK to charge vehicles?

**Rachel Maclean:** That is a question we are often asked, and rightly so. We obviously work closely with BEIS and we have access to those figures. The electricity market is already set up to bring forward more renewable energy through the contracts for difference markets. We are also looking at the smart charging angle. We are bringing forward regulation to accelerate the transition to smart charging. In the future, of course, there is the possibility of vehicle-to-grid charging as well.

We are confident that the market will cope, and that it will be able to cope with other demands on it, such as for heat pumps and so on. Of course, that work needs to be kept under review at all times.

Q143 **Greg Smith:** I am glad you brought up smart charging because there is now the new mandate that new chargers have to have smart functionality, but there are a lot of chargers already installed; we talked earlier about half a million users. Probably most of the home chargers that were installed pre last year, maybe pre-2019, do not have smart



functionality.

How critical is it that smart charging is included, especially as we move to the future and some of the benefits of smart start to be outweighed by the fact that everyone has something plugged in overnight, and charging overnight is no longer a low point on grid consumption? Potentially, you could have 20 million electric vehicles plugged in overnight, which would completely negate the overnight point. Is smart charging the answer long term?

**Rachel Maclean:** In a sense, what we are seeing is the markets responding to demand and the Government's ambition for net zero. There are mechanisms in place to ensure that the networks are prepared for the new demands from all forms of transport and other needs. That is done by Ofgem, the independent regulator, using the price control framework to ensure that network companies provide the required infrastructure.

We have taken powers in the Automated and Electric Vehicles Act to ensure that all chargers installed are smart. We are confident, on current projections, that the market will respond, and that we will have adequate capacity.

Q144 **Greg Smith:** On the point about the volume of chargers, will there come a crunch point when the Government have to say, "Yes, we're going to have to support those that don't have the smart charging technology"? Possibly they have already had them installed with taxpayer subsidy, and you are going to have to have them subsidised all over again to get them into the smart arena, or are the numbers not high enough?

**Richard Bruce:** You are plotting a particular risk, which is mass market EV uptake and everyone charging at night. There are 30 million vehicles on the UK's roads. They possibly charge once a week. It is a pretty deep trough at night at the moment in terms of doing that.

As the transition happens, the existence of off-peak tariffs, which will incentivise people to charge at night anyway, to some extent will mitigate the lack of smartness in some of those chargers initially. The smartness is about the dynamic on and off sort of stuff. Ultimately, the destination will probably be dynamic vehicle to grid as the default, so that owners of EVs can basically put some energy back into the grid and get paid for doing it. That again is about price incentives.

It is a very small risk. At the time you still have the dumb chargers in place, the off-peak tariff will incentivise people to be in the peak. In the longer term, we will have far more sophisticated ways of moving energy between vehicles and the grid. The risk is less about power generation, because 20% has happened in the past quite recently in terms of increases in demand. It is more about local distribution networks, particularly remote areas, as we discussed previously.

Q145 **Greg Smith:** What about public chargers? That is a more difficult arena to install smart technology in. Largely, it is someone turning up at the



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motorway services or the high street car park and just wanting to plug in and get as much power as quickly as possible to get on with the rest of their day.

**Richard Bruce:** With rapid chargers, the ability of them to smartify is limited, because they are very high power. For the lower power chargers, there is a massive commercial incentive for all those operators to aggregate the energy and sell it as a service back to the grid. That happens now. Someone like Pod Point will have a deal with energy suppliers and say, "I will turn off my chargers for two minutes and you will pay me a value for that." There is already an incentive to make that happen. It is a very sophisticated market. Part of the attraction for on-street charging for people is that they have all these vehicles plugged in as a potential energy store, in a demand-side response system, to sell a service back to the grid.

Q146 **Greg Smith:** Let's focus on the point about the vehicle back to grid proposition. Are we going to get into a bit of a circle of doom, where the batteries are taking power in and discharging power for purposes other than to move the wheels, putting the power back into the grid? Is there a risk that we will see degradation of the battery life? We all know from other battery devices that we have—our phones, and so on, although clearly with a lot lower power than an EV—that they do not last that long the more you charge them up. If you are letting the power out to something other than moving the wheels, isn't that going to lower the lifespan?

**Richard Bruce:** There are a couple of things. There is what we call demand-side response. If you literally just turn off the charger, that has a value now; much as a shop might turn off its air-conditioning for two or three minutes, that has a value to the grid. That doesn't do anything to the battery at all. It is a valuable thing for aggregators of electricity services now.

Vehicle to grid will require the manufacturer to allow it to happen, and the technology to work. The concerns around battery degradation have largely proved to be unfounded. There is famously a Nissan Leaf running around Cornwall that has done 100,000 miles and still has its battery. There were some issues early on in very high-temperature countries, but if you look at the data coming out from the manufacturers, they are really confident on battery longevity. You might lose 5% over X years, but they are putting very long warranties on these things as well, so it is not really happening.

**Rachel Maclean:** Another point that is important to add to what Richard said is that the Government are investing, and there is a huge amount of research going on with the Faraday Institution looking at exactly these issues of battery longevity and the potential for recycling batteries. Often when the EV reaches the end of its life, there is still a lot left in the battery. How do we extract those minerals and use them again? We are



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pretty confident that the market will advance and the technology will develop to meet the needs that you are talking about.

Q147 **Greg Smith:** My last point on this, going back to the whole power consumption point, is that of course it is not just electric vehicles. There are lots of other things that were previously fossil fuel powered or otherwise powered that are going electric. Is that part of the modelling that gives you confidence, and we are not saying that it is only vehicles that are going electric when there is so much more?

**Rachel Maclean:** Definitely not. We know there is pressure on people to install electric heat pumps and so on. All the work that is going on across Government—mainly centred in BEIS, to be fair—is looking at overall capacity. They will be bringing forward a lot more detail of their thinking on this very soon.

The take-away is that in all the conversations I have had with the DNOs, the electricity grid, National Grid and so on, they are all incredibly confident that the market mechanisms that we already have in place will be able to cope amply with the future demands on the grid in order to meet our net zero ambitions.

**Greg Smith:** Thank you very much.

Q148 **Chair:** The issue around wayleaves is causing great expense. I was just looking at the internet and it is all, “We can get loads of money for you.” This is going to cause a real issue in driving the roll-out. Are the Government looking to amend legislation around wayleaves, otherwise it is almost like a ransom payment? It is stopping some of the charging infrastructure from being delivered.

**Rachel Maclean:** It is a problem in some areas. I hear first-hand about that in some cases. We are actively looking at that. You are right; it cuts across a number of different Government Departments in terms of access and planning. We need to make sure that, as a Government, we have an aim to facilitate much more timely and affordable connections and tackle these barriers. Yes, we are working closely on that. It is an item on our agenda.

Q149 **Karl McCartney:** I want to come back on rural areas and the provision of the network there. Many of us are quite sceptical about Government Departments, their modelling and the algorithms they use. We have seen what happened with broadband. Basically, rural areas got stiffed, despite the money that was thrown at BT to provide broadband services.

With electric charging, would it not be worth looking at alternative power energy solutions for rural areas, such as those Porsche and Siemens are investigating with their new plant in Chile, providing a natural resource alternative to petrol, utilising wind to power that plant? Is that something that the Government or your Department are actively looking at? I know it is only a very recent announcement, but are you aware of it?



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**Rachel Maclean:** Sorry, what was the announcement that you referenced there, Karl? I did not quite hear what you said.

Q150 **Karl McCartney:** Porsche and Siemens are working together on a naturally resourced alternative to petrol.

**Rachel Maclean:** Okay.

Q151 **Karl McCartney:** Those of us who think that internal combustion engines are good would be very welcoming of that. I believe that the first plant will be in Chile because there is lots of available wind power. Obviously, it needs a high energy electrical charge to extract the natural resources. That is just an alternative. I know it is not the death knell of internal combustion engines, and therefore many of us in rural areas do not think we are going to get the infrastructure that London and Scotland have, which my colleague Gavin was talking about, and which certainly the east of England, which includes Lincolnshire, does not have.

**Rachel Maclean:** I totally accept the point you make about the importance of having charging infrastructure in rural areas. I represent a rural area as well. Part of my constituency is very rural, so I fully understand and appreciate the need for it from my own first-hand experience and the conversations that I have with my constituents.

I want to assure you that, as a Minister, that is at the forefront of my mind. As a Government we recognise it, and that is why we work very closely with local areas across the country and have plans in place to work with electricity generation companies, the DNOs. We insist that they have plans to make sure that they have capacity in place. That work is ongoing. As I have said throughout this session, this is a new market. Things are changing very fast. The market often has a solution. You have highlighted one that Porsche is bringing forward. I am sure there will be more of them.

People are free to do what they want. If people want to carry on driving a combustion engine car, they can do that beyond 2030. It is our Government's responsibility to reach the net zero goals that we have legislated for, so it is of course our duty to make sure that we have the electricity infrastructure and the grid capacity in every area of the country.

Q152 **Karl McCartney:** But you understand our apprehension, as Back Benchers representing rural areas, having seen what happened with broadband, that the same might happen with the infrastructure.

**Rachel Maclean:** I fully understand it. I am working as hard as I possibly can to avoid that fate, and putting the full force of the Department for Transport and colleagues in BEIS behind this.

I cannot comment on broadband—it is not my area—but perhaps I can provide some reassurance. This is a very fast-changing market where there is a commercial use case. We all know that when the market exists



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and people know that they can come into it and make a profit, because the Government have provided certainty, that is going to be the case in rural areas as much as it is in London or Scotland. We are already seeing the market coming in. We are going to see much more of that. I am absolutely sure that I can come back here in a year's time, God willing, and we will see much better provision in rural areas. Hopefully, you might start to get a bit more confidence.

**Karl McCartney:** It is good to hear your confidence.

**Richard Bruce:** It is not really like broadband, in the sense that rural areas have electricity now. If they have an electricity cable, they can charge an EV now. You do not need massive investment in high-powered, new connections to the energy network. If you have a low-power connection and you have a battery pack, you can put rapid charging in place in those areas, so it is not quite the same.

**Chair:** That is an important consideration. Thank you.

The last two sections are on the customer experience. We were then going to ask you about the decarbonisation transport plan in the last section and the interaction between zero-emission vehicles and public and active transport. We are still going to cover that part and Ben has the whole lot, so I will hand over the rest of the session to Ben.

**Mr Bradshaw:** Thank you, Chair. Hello, Minister.

**Rachel Maclean:** Hello Ben.

Q153 **Mr Bradshaw:** Obviously, interoperability is a major problem at the moment as far as the customer/consumer is concerned. A number of other countries have already mandated interoperability so that you can use every recharging system and you are not restricted depending on what smart card you have. What is the Government's view on that, and what are you doing to make sure that we have full interoperability in this country?

**Rachel Maclean:** We agree that we need that. We have consulted on what we call the consumer experience of charge points, which covers four key areas. They are opening public charge point data, because at the moment Zap-Map is not always up to date and in real time. We need better data for people, to address the problems that Karl was challenging me on earlier.

There is reliability. We need to be much more reliable. We need to streamline payment methods so that people do not have to download multiple apps and they can pay by contactless. As you say, we need interoperability and simplicity of roaming. We have finished the consultation and we plan to lay regulations later this year.

Q154 **Mr Bradshaw:** So you will regulate on this, will you?

**Rachel Maclean:** Yes, we plan to regulate. Absolutely.



Q155 **Mr Bradshaw:** Excellent. That will be very welcome news to the slightly bewildered consumers at the moment.

Can I ask you about cost variability? We heard from the NAO that the cost difference between charging privately and charging publicly can be absolutely massive—between 59% and 78%. Although there is some price difference in fuel currently, that would lead to a massive two-tier system and discrimination between people who have access to a drive, for example, or other private means of charging, and those who rely on a public charging system. How are you going to address that cost differential?

**Rachel Maclean:** I will focus first on the cost differential in public infrastructure. That will be captured in our regulations. We are going to insist on better mechanisms of pricing transparency so that people can easily check, just as they do with petrol.

Your other point is about the cost of electricity at home versus the public infrastructure. It is a very fair challenge. We want to ensure that everybody has equal access to an electric vehicle. That is where we see the market playing a huge part, driven very much by the regulation that we are putting in place, and the stringent standards, to expect people to provide clear and transparent data.

Q156 **Mr Bradshaw:** So there might be something in the regulations on pricing as well, or caps on pricing.

**Rachel Maclean:** We are not looking at caps on pricing, but we are certainly looking at data on transparency on pricing metrics, so that it can be compared easily.

Q157 **Mr Bradshaw:** But you would not want to see a system where there is a big price differential between people who happen to have access to private recharging and those who do not.

**Rachel Maclean:** No, we don't want to see that; definitely not.

Q158 **Mr Bradshaw:** Great. During the lockdown, there was an issue because some of the public charging points were in premises that were closed and were not accessible to people. Was that a policy decision? Was that something where you had any input? It clearly created problems for people.

**Rachel Maclean:** Honestly, no. Lockdown was an emergency situation in response to public health. It is unfortunate if that was the impact. If I can mitigate that a little bit, even throughout the lockdown the activity of installing charge points at people's homes continued. The grants continued to roll out. We still saw activity in the market, such as I discussed earlier, with charge points going in all over the country. It may have been, unfortunately, that perhaps some were unavailable, but at the same time the Government were busy supporting the roll-out of infrastructure in other places.



Q159 **Mr Bradshaw:** I wonder whether you think that experience and the importance that this infrastructure will have for our national economy, and the functioning of the system, would warrant the charging system being defined as critical infrastructure, so that it is always accessible, open and maintained in good order.

**Rachel Maclean:** It is a fair challenge. We should look at the impact of a pandemic on our infrastructure. I am very happy to take that away and discuss it with Richard and the team.

The rapid charging fund that we are focusing on is designated critical national infrastructure. I am looking at Richard, but I think that is the right technology. It is what we call a Government critical project in recognition of the importance of having that infrastructure, so that people can make journeys easily and without hindrance.

Q160 **Mr Bradshaw:** I think we will settle for the word “critical”. That is reassuring.

Moving on to the impact of expanding electric vehicle use on one of your other priorities, which is to get more people using active travel—walking and cycling—Chris Boardman made the very interesting point that there is almost a danger, if we give people the impression that with electric cars you can just carry on driving willy-nilly all over the place, that we are not going to tackle one of the other big problems we have, which is congestion and the impact that has on the economy. There are also other benefits of active travel like trying to improve people’s fitness and the local environment. How are you going to balance those two objectives?

**Rachel Maclean:** We have been very clear with the transport decarbonisation plan, when we launched the conversation before the pandemic, that we wanted the majority of journeys to be active travel, to be cycled or walked, or to be made on public transport. We have already seen a number of investments backing that up. You referred to Gear change—the cycling and walking plan—which is the biggest ever single investment in cycling and walking of any Government. There is the Bus Back Better strategy, and of course support to keep the public transport system going throughout the pandemic, even though it has been virtually empty.

That is evidence of the Government’s commitment to shifting people out of cars and driving modal shift for all the benefits that you spoke about. Congestion is a concern for people. We must look at that in the round, particularly in terms of freight and things being delivered. We need to think about how we actually manage rising congestion and have a strategy to tackle that. That is part of the work in the transport decarbonisation plan, and in another piece of work that I am leading on the freight strategy.

Q161 **Mr Bradshaw:** It is going to be absolutely vital to get that balance right, isn’t it? Otherwise we will just face more congestion and misery in our city centres, with no real improvement to the quality of life for many



people.

**Rachel Maclean:** I think that is right. Again, local authorities have a big role to play. They need to engage with the Department for Transport, using the tools that we have made available to them, in planning their own transport priorities, and working with local employers and businesses to think innovatively about how they can tackle commuting. Lots of local authorities are already doing this. There are many solutions, some of which are supported by the Government. Yes, that has to continue.

Q162 **Mr Bradshaw:** Can I ask you about a model that has, I suggest, the potential to address all of your policy objectives? That is to encourage more shared travel and shared car use. I have not owned a car for more than 25 years, but I have been a member of a very good car co-operative, a car-sharing club in Exeter. It has a fleet of electric cars. This also makes it affordable for people who otherwise would not be able to drive or get access to an electric vehicle. It does nothing to increase the number of cars on the road; it actually reduces the number of cars on the road and the need for parking spaces and recharging points. I understand that you are the champion for these sorts of schemes in the Department. Is that right?

**Rachel Maclean:** Yes. I am the Minister for the future of transport, so of course we are looking at all of those.

Q163 **Mr Bradshaw:** Fantastic. Are you engaging with those organisations? Are you doing anything to encourage their spread and to publicise their benefits to the public? They seem to answer so many of the policy challenges that you face.

**Rachel Maclean:** Yes, you are right. We see shared mobility as playing a role in the future. There are some challenges with the adoption of some of those things, whether it is ride sharing or shared mobility, but, yes, the Government are supporting them. It is fair to say that the way we would support car clubs is through the support packages that are available for electric vehicle purchase. That means people can start a car club using Government support to buy an electric vehicle. They know that the charging infrastructure is there, as we discussed earlier.

We are also looking at other ways of promoting more innovative forms of transport through our Future of Transport work. We have a number of Future of Transport zones across the country, where we have enabled local authorities to use Government funding to trial and innovate some of these things. We are learning a lot from that.

Of course, there are private sector players in the market as well. My kids just recently used a business, whose name I have forgotten, which is exactly that. It is like an Airbnb for cars. Things are coming in all the time. A lot of it is because we have been so ambitious as a Government and have been clear about our trajectory, so these types of players think it is viable to enter our market.



Q164 **Mr Bradshaw:** A lot of the big private car rental schemes have gone into this. Hertz or one of the big ones took over the London Zipcar, as was, street car system.

Are you aware of the concerns in the car-sharing community of what they claim is the discrimination they face in the tax system? They pay more than commercial companies or ordinary individuals would for certain operations. If you were not aware of that, I wonder if you could ask to be made aware of it and perhaps make representations to the Treasury about it. I think that could do an awful lot to help the expansion of these schemes, which, as I say, contribute so much to the whole of the agenda that you are trying to achieve.

**Rachel Maclean:** I think I may be aware of that, but could you write to me please with more details, Mr Bradshaw, and I will be happy to come back to you?

**Mr Bradshaw:** Yes, I am happy to do that. Thank you.

Q165 **Chair:** Drilling down into the evidence that Ben got—I may have missed this, so my apologies—you talked about the regulations for consumers at public charge points. The consultation has finished, and you said you would be looking to legislate.

**Rachel Maclean:** Yes.

Q166 **Chair:** Did you put a date on that when you answered Ben's query, as to when we would expect that legislation to be brought forward?

**Rachel Maclean:** Later this year.

Q167 **Chair:** Policy Exchange, in their evidence, warned against heavy-handed regulation. Are you confident that you have the balance right between not shutting the market down and really making it easier for consumers, along the lines of how we operate with our cashpoints and tap into the tube for our journeys?

**Rachel Maclean:** These are live questions, Chair, which is why being a Minister in this Department is so difficult. These questions come up with every decision. We are literally discussing that at the moment. We need to get that balance right. It is driving our thinking, but we have to take in a vast amount of evidence from everybody in the sector and we will have to weigh that up in the round when we come to legislate. I think there is an overriding need for us to legislate, and we hear that all the time. Yes, we need to get the balance right.

**Chair:** I don't have any involvement with Policy Exchange, but they wanted some form of regulation in the sense of the mandate. They have some appetite, but obviously not a huge amount.

I think we have covered absolutely everything. There is obviously a huge amount going on this year. There is the decarbonisation plan and the other three plans to be produced, and then the legislation for the consumer experience as well.



## HOUSE OF COMMONS

We wish you well, Minister and Mr Bruce. Thank you for your evidence. It is an exciting space. You will be making history, so we look forward to helping you with our recommendations once our report comes out.

**Rachel Maclean:** Thank you very much for your interest and for your report.

**Chair:** Thank you.