



## Environmental Audit Committee

Oral evidence: [Diesel emissions and air quality](#), HC 506

Thursday 15 October 2015

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Members present: Huw Irranca-Davies (Chair); Peter Aldous; Margaret Greenwood; Luke Hall; Caroline Lucas; Holly Lynch; John McNally; Rebecca Pow.

Questions 1-98

Witnesses: **Paul Willis**, Managing Director, Volkswagen Group UK, and **Mike Hawes**, Chief Executive Officer, Society of Motor Manufacturers and Traders, gave evidence.

**Q1 Chair:** Welcome to this morning's session of the Environmental Audit Committee's inquiry into diesel emissions and air quality. This is the first public hearing of this Committee's inquiry into this matter. We are very pleased to have with us today Paul Willis, Managing Director of Volkswagen UK, and Mike Hawes, the Chief Executive Officer of the Society of Motor Manufacturers and Traders, the SMMT. You are both very welcome indeed. Mr Willis, I understand you want to make a short—and I know you mean short—opening statement.

**Paul Willis:** Chair, with your permission I would like to make a brief opening statement. My name is Paul Willis. I am the Managing Director of Volkswagen Group United Kingdom. On Monday I expressed my heartfelt apologies on behalf of the group that we have let down our customers and the wider public over the findings of irregularities in some diesel vehicles we produce. Today I want to reiterate that apology. I can speak for the whole group when I say Volkswagen is deeply sorry. The board of management in Germany continues to take these findings extremely seriously, recognising that we have fallen short of standards that are expected of us. We are continuing to work carefully and diligently to remedy the affected engines. Since last weekend we have started to send personal letters to each and every affected customer. Constant communication will be ongoing throughout the remedy process. It is paramount our customers know we do care and we really want to put these things right. I can affirm today Volkswagen Group's goal is to be the world's most sustainable vehicle manufacturer by 2018. I promise with my dedicated team we will fully resolve this issue, do the right thing and regain trust in our brand. Thank you.

**Q2 Chair:** Thank you, Mr Willis, for that opening statement. Would it be right to say that you and Mr Hawes are among the most senior voices of the automobile industry in the UK, an industry of which we are all very proud and whose jobs and impact on the economy we value? You are among the most senior representatives?

**Paul Willis:** That is indeed true.

**Chair:** And Mr Hawes?

**Mike Hawes:** The SMMT represents the automotive sector in its wider sense, which includes motor manufacturers, importers, supply chain, so we do represent the broad scope of the industry.

**Q3 Chair:** Thank you for that. By the very nature of your senior roles, both of you will have engagement with senior CEOs and senior management at an EU level, at a global level, at a US level with your counterparts? You discuss strategy, you discuss operations?

**Paul Willis:** Yes, sometimes too often.

**Mike Hawes:** We have meetings with sister organisations in other countries from time to time, correct.

**Q4 Chair:** That is great. I just wanted to establish that at the outset of this, because it is important for the Committee and for people watching this to realise that in your coming here, and with your apology today as well, that you should be able to answer the questions that we put to you today. We very much hope you will be because we need to get to the bottom of this.

**Paul Willis:** Of course we will do our best.

**Q5 Chair:** I want to make a couple of remarks in terms of why we are here. You were in front of the Transport Select Committee on Monday. This is the Environmental Audit Committee and, as you know, our remit spans all of Government and all Departments in all matters. It covers climate change, sustainability, the natural environment and—let's be clear—within that sustainability focus, the health and wellbeing of this and future generations. The VW brand is at the eye of the storm for obvious reasons. It has been found out trying to cheat on the natural environment, cheat on sustainability and cheat on the health and wellbeing of this and future generations, but the whole of the motor industry is in danger of being sucked into this storm because of the fear that this could go wider. Despite the assurances and the patent chasm between real life and lab results on emissions, regardless of any cheating software, the public feel they were being cheated already. So, why are we here? Because on Monday, despite that session in front of the Transport Select Committee, there were some questions you were unable to answer in the detail required and we would like to give you that opportunity again and go further. It is also because since Monday there have been even more revelations that suggest that the problem goes deeper.

Let me begin by asking you, Mr Willis: since you appeared on Monday in front of the Transport Select Committee, we learn that new software, different from the original ingenious defeat device, designed to make a pollution control catalyst heat up faster and thereby improving performance of a vehicle, has been fitted on to the new 2016 VWs waiting quayside in the US. This would suggest to me that this problem goes deeper than

the odd rogue operator that it appears to be, and it has been suggested by commentators on the industry that it looks like a multi-year corporate approach. What would be your response?

**Paul Willis:** First of all, I think we need to separate what has happened in the United States to here. The situation in the United States is that we are in discussion with the authorities to homologate the 2016 vehicles and so the discussion includes the emission systems. The emission system in the States includes a heat-up device in the catalyst that gets the catalyst to a certain temperature and that temperature measures NOx at a certain level. So, despite what you are reading in the media, my clear understanding is that this is part of the process that my company is going through in order to be open and transparent with the authorities in the United States. This is completely not applicable to the United Kingdom. It is not applicable to Europe, and we are in transparent discussions with the German federal transport organisation about the situation in Europe and with the Ministers here. I have to say that obviously I read the same articles as you do but it is not the case that it goes wider, as you are suggesting.

**Q6 Chair:** You are very categoric in that. Can I ask you, in your discussions within VW, are we going to hear of any more devices, software tweaks or anything else fitted to any other vehicles? Is there more to come out?

**Paul Willis:** I don't think there is more to come out. That is my personal opinion, but I think I said on Monday—and the company has stated very clearly on more than one occasion—that we have engaged a completely separate organisation, Jones Day, to investigate all these points. You asked me at the beginning of this hearing did I know, did I liaise with various personalities. I know these gentlemen. I know them really quite well and, as I said on Monday, I find it implausible that this would be some sort of deliberate attempt to mislead people. That really is my opinion.

**Q7 Chair:** So the argument is still maintained that this is somewhere within a department, within a small group of people, somebody who has decided unilaterally and independently to do this cheating software?

**Paul Willis:** Yes. As I said on Monday, I find it inconceivable, absolutely inconceivable, and I think indulging in conjecture or whatever you want to call it is not helpful. What I can say is that the company is absolutely determined to overturn every stone to find out. Our future depends on the transparency and depends on openness with the authorities in Europe, Britain and the United States. I am really clear on that and I know that my colleagues and the supervisory board are absolutely clear on that.

**Q8 Chair:** I want to turn to you, Mr Hawes. In my opening remarks I referred to the importance of this industry for the jobs and the economy. This thing had better be shut down darn fast. The categoric assurances that you are giving on face value are great, they really are, but we have seen previous scandals, not just in the automobile industry, where this has spread and it has spread with a contagion across other sectors. So, can I turn to you, Mr Hawes, and ask you: setting aside the cheating software and deliberate attempts, this fundamental principle of the difference between real world results in emissions—and performance as well by the way, not just emissions that we are focusing on now—and what is being done in the

lab, doesn't that actually completely undermine confidence both in the public but also in Government looking at emission standards and what we are trying to achieve in European regulations?

**Mike Hawes:** It certainly does not help. We are on record saying that the current testing regime, which revealed these anomalies, for some good scientific reasons, does not do the industry any favours. If you are a consumer and you are looking to purchase a vehicle and you look at the figures that are published by law for comparison purposes and then you compare that to what you get in the real world, that discrepancy does not help the industry and we would like to see it resolved.

**Q9 Chair:** Are you confident enough to give the same assurance that we have just heard from Mr Willis that this goes no further in the UK industry?

**Mike Hawes:** We have had assurances from all our members and I have certainly no evidence to suggest this is anything other than an isolated incident.

**Paul Willis:** May I say something?

**Chair:** Yes.

**Paul Willis:** It is very important to support Mr Hawes. I think it is very important that any ambiguity is cleared up for the consumers. That is why we would endorse making it absolutely clear, bringing these regulations in, real world tests, and then the printing of what the limits are brought to the consumers' notice. We would fully support that as well because, as you said earlier, there is an ambiguity and vacuum in the middle that is not helpful at all for anyone, least of all consumers.

**Chair:** I would just simply say it is not an ambiguity anymore; it is a chasm between the testing.

**Q10 Caroline Lucas:** I have two very quick follow-up questions for Mr Willis. You said that you thought it was inconceivable that this would have been known about at the highest level. Do you recognise that for the vast number of the British public it is inconceivable that this could possibly have been done by—what are we talking about—a number of engineers lower down in the company? If that were the case, my first question is: what would be in it for them to falsify the results? One can see what might be in it for the management but I am not sure what you think would be in it for engineers lower down the chain. Secondly, when you were in the Transport Committee you said that the UK testing regime was old-fashioned and not fit for purpose. Could I press you on what the most robust testing regime you operate under is and, therefore, in what way should the UK testing regime be increased?

**Paul Willis:** The first point about my comments around “inconceivable” and “implausible”, I have worked for the Volkswagen Group for over 15 years. I understand the structures, the reporting lines, the different pressures that we have in our company, that any company has, and I understand our corporate goals. It is my opinion that the senior management of the company are very precise people. My experience is that they are very honest people, they are very direct people.

**Q11 Caroline Lucas:** So where are the dishonest people?

**Paul Willis:** I don't think I can say, "I think that person is dishonest" or "That person is dishonest". I really can't say that. Then what we do is we get dragged into speculation. On Monday I was asked the question: how many people work in technical development? I wasn't sure of the answer. I checked on it after the meeting—45,000 people work in our company in technical development all over the world. I don't know maybe more than a handful of people that work in technical development. My answer to your question is we are speculating. I can't answer your question. Logically, the point about: what is in it for the workers? It is completely logical with what you say and I cannot—

**Chair:** I think we can see that you can't answer at the moment.

**Paul Willis:** Yes, I am sorry.

**Chair:** Caroline's line of questioning here goes to the heart of this question of: who benefits from doing this? It is not the engineer on the production line but, anyway, let's leave that for the moment.

**Paul Willis:** Nobody benefits from doing this.

**Chair:** Somebody clearly has. It doesn't come out of nowhere. It seems that what is coming out of Caroline's question is who benefits here is, if you can cheat the system in the US and you can deliver performance cars the same as delivering low emission cars, you have a market opportunity. It is not the engineer that gets that.

**Q12 Rebecca Pow:** I have to go but I am going to go on this note. You mentioned that you realise that there is this big difference between the real world testing and emissions and pollution, and what you have been testing, and that you are going to press for all this—as I know in fact our own Government are—but why didn't you do it before? You know that we have the Clean Air Act, we have all these constraints on pollution, and you know that we are going to hear all this in a minute about the health impacts. You must have been reading about that for at least five years, because we all have. Why haven't you been saying before that we need to change our regulations, and why haven't you been doing it instead of actually lying about the lower regulations you have to reach? I am sorry but I have to go and ask a question in the Chamber. I will look forward to reading what your answer is and I will return.

**Mike Hawes:** If I may, first of all, I would reject the accusation that we have been lying as an industry. We publish the emission performance that is required by law. We have no choice, no latitude in the figures that we are allowed to publish. There is clearly what you described as a chasm and certainly a greater gap that is evolving over time for some very good reasons, which I am sure we will come to later. The publication of those figures, as I said, is set in law. We are in a fortunate position over the last only couple of years to have the technology that allows you to undertake these tests in the real world. We are now looking at trace elements on a number of different pollutants. To be able to measure those from a tailpipe as you drive around, separate from the ambient levels and in a robust and repeatable way in any different circumstances, is new. When the regulation was set, in Euro 5, that did not exist. We have that position now and that is why it is coming into the regulation.

**Paul Willis:** Can I add one thing? From a Volkswagen point of view, it is not the case at all that we have been doing nothing. We were the first automotive manufacturer to sign up for the 95 grams per kilometre in 2020. One of our products is the only product in the world that you can buy with petrol, diesel, electric and PHEV, so we are investing more R&D than any other company in the world in this area to progress and to meet the legislation of the various economies.

**Chair:** Absolutely, which is why I think so many people are so shocked. Lots of manufacturers are investing in good advances, but for it to be VW—but let's return to that.

**Q13 Margaret Greenwood:** I would like to ask questions in relation to the impact on public health. You will probably be aware that nitrogen dioxide is related to some very serious health conditions, things like problems with lung behaviour, asthma and cancer. DEFRA has estimated that 23,500 deaths a year in the UK alone are associated with these and DEFRA has also estimated that exposure to particulate matter contributes to 29,000 deaths, so we are talking about over 50,000 deaths a year. My question to you, Mr Willis, is: do you believe that car companies have an ethical responsibility to ensure that vehicles meet air pollution standards?

**Paul Willis:** Yes.

**Margaret Greenwood:** You do. Mr Hawes, can I ask you the same question?

**Mike Hawes:** Absolutely.

**Q14 Margaret Greenwood:** So, Mr Willis, I would like to ask you whether you would be concerned about potential lawsuits relating to public health.

**Paul Willis:** First of all, what we are talking about here is mishandling a laboratory test. We are not talking about mishandling of real world emissions, so those are two completely different things. There is no suggestion that there is any change in the NOx in the real world.

**Margaret Greenwood:** Right. So you are not concerned about any—

**Paul Willis:** I am deeply concerned about public health. Just to put it into perspective: I am asthmatic, my son is asthmatic. I lived in China for three years. I learnt a lot of things living in China but what I learnt more in China than anything else is that actually, in the 21st century, none of us can take for granted the air that we breathe and that is very clear to me. I have a background of seeing what air pollution can do. All car companies—and it is more than car companies—all transport companies, power generation, we all have a responsibility to support legislation and to make the air, as Mr Davies said at the beginning, for future generations. I absolutely support that.

**Q15 Margaret Greenwood:** Thank you. In particular in relation to nitrogen oxide, do you anticipate that there will be stronger regulation in this area and would you support that?

**Paul Willis:** Yes, indeed.

**Margaret Greenwood:** Mr Hawes, could I ask you the same question?



**Mike Hawes:** I think the regulation that we have in place at the moment will deliver significant improvements in air quality, specifically on NOx, and I think it is worth bearing in mind that the regulation that governs the automotive industry has got ever tighter over various years. We are basically in the sixth iteration of the air quality regulation affecting the automotive industry, with Euro 6. That has evolved over time. Going back to the early 1990s, Euro 1, the focus at the time—and again this has to reflect the science of the time—was on sulphur, carbon monoxide, volatile organic compounds and so forth. Over the years, with the different iterations of this regulation reflecting emerging science, that problem was largely solved. NOx has always been in there but was not foreseen as significant an issue as it is now. Responding to science, the focus shifted more towards particulates. Now the focus is on NOx and with Euro 6 and with the technologies that will be effectively mandated to meet Euro 6, the issue of NOx emanating from road transport will not be eliminated but will be significantly reduced, contributing to improved air quality.

**Q16 Margaret Greenwood:** Would you support stronger regulation?

**Mike Hawes:** I think the regulation that we have in place at the moment—Euro 6 only came into force at the beginning of last month for passenger cars; it has been around for 20 months on heavy goods vehicles—now with the way that you test and the additional requirement that the performance of NOx emissions and particulate emissions will be measured in the real world, and with stringent regulations, basically means that is going to be a tougher test than ever set before.

**Q17 Chair:** I think your answer is that this is going to be an uplift again, lots of iterations, and you will do what the uplift requires. The SMMT and others have been lobbying out in Europe to make sure that that works with the industry. You will do what is required but you are not arguing to go further?

**Mike Hawes:** At the moment, this is going to push the limits of current technology. Euro 6, combined with a real world driving emission technology, is coming into a monitoring phase from next year and then potentially comes in in two stages, 2017 and a couple of years later, so we are on a path of four to five years of ever tougher regulation. We need to make sure that we have the technologies that meet that regulation and we get those vehicles on the road.

**Q18 Chair:** I will ask both of you this. Following on from Margaret's question, as you say we now know more about the complex detail of emissions and which have the most particular detrimental effect on health and wellbeing as well as the natural environment. On that basis, do you have an ethical view, a corporate social responsibility view, on whether we should be going further?

**Mike Hawes:** The industry will do everything it can, and it invests billions every year to improve emissions and as those emissions get ever tighter they would support them. Any car company, any automotive company will say that they will do everything they can to address any detriment to the environment or society.

**Q19 Chair:** Okay, but that is not quite the same. Mr Willis, you referred to your family history with asthma and so on. That is the same as me, myself and my family as well. Do you think we should be going further?

**Paul Willis:** It is very, very important that government and automotive manufacturers and the power stations and the integration of this process is continuous; it really is. I don't want to get into other industries and contributions. We all know the story about coal-fired. It is very important that it is step by step. We have an ethical responsibility, but I just want to come back to Mrs Greenwood's point. The Government's role in this is extremely important. If you look at what has happened with diesel since 2000, it is really quite extraordinary. The mix of the diesel market in the United Kingdom was 14% and now it is 53%.

There are many different reasons for that, improvements in technology and so forth. If you look at the tax regime, we were all, with Government, working towards improving the CO<sub>2</sub> footprint and the tax regime encourages that. When you look at the detail of who buys petrol and who buys diesel cars, the retail customers generally buy petrol cars, the fleet customers, who do more mileage, generally buy diesel cars. The tax regime was built in order to get that result. I think it is time that we look at the swing of the pendulum and say, "Have we let that go too far?" I am more than happy to sit with Government, as Mike is, to discuss how all of us can be integrated in that role but—one last thing—it has to include other industries as well.

**Q20 Peter Aldous:** Mr Willis, the UK is facing an infraction action from the EU for breaching its air quality limits and could face fines for that. Would you accept that VW has some responsibility for the UK breaching those limits?

**Paul Willis:** What we are talking about here and the reason I am here is because in laboratory tests it seems that there was some mishandling of the exhaust gases in the engine chamber to take the NO<sub>x</sub> down. We are not talking about real world, what goes on in the real world driving and the emissions of gases in the real world. Volkswagen has a responsibility, like every other car company, every taxi company, every power generator, heating company and everyone in the United Kingdom. We all have a responsibility together, as do the Government.

**Q21 Peter Aldous:** So you do accept that you have that responsibility?

**Paul Willis:** I accept responsibility as part of the jigsaw, yes.

**Q22 Peter Aldous:** What are you proposing to do to address that?

**Paul Willis:** What we have been doing is what Mike talked about. We have been investing billions in technology. If you take Euro 3 to Euro 4, NO<sub>x</sub> has decreased by 50%. If you take Euro 4 to Euro 5, it has decreased by circa 26%. If you take Euro 5 to Euro 6, it has decreased by another 50%. Also, I am sure you have seen the introduction of our PHEV. We have been leading the world in plug-in hybrid cars. We have launched those in the United Kingdom and we have another one coming. So we are doing everything from a technical point of view. In my own little company that I am responsible for with a 9 billion turnover in the UK, which fits into the total global scale, as part of my annual objectives I have sustainability targets. I have to reduce my carbon footprint, waste, the use of water;



we have recently fitted solar panels to our warehouse. All of these things come together because we have a role to play, as every other car company does and all other emitters of NO<sub>x</sub>.

**Q23 Peter Aldous:** One ramification of this is that the industry as a whole will face tougher standards in the future. You are quite happy to face those tougher standards?

**Paul Willis:** I am happy to face tougher standards. Mike made the point that the science of NO<sub>x</sub> effect is emerging and it seems to be quite clear that it has health effects. Now that we know that information we have to support and we all have a responsibility—including Volkswagen and the other members of the SMMT—to contribute to that, particularly in the areas of cities where there is a greater concentration. We all have responsibility.

**Mike Hawes:** On behalf of the other manufacturers, I would add that the SMMT produces a sustainability report and we were one of the first sectors to produce one across the sector. All the figures across the industry for those issues that Mr Willis raised, about energy use by vehicle, water use, CO<sub>2</sub> emissions and VOC emissions are down year on year. So it is not isolated, a single company, this is an industry delivering to those objectives.

**Q24 Chair:** One of the key things from this is, as you say, they are all down year on year. The lab work that has been done to try to improve the emissions was paying dividends but there is this gap between real world and reported. As a Committee one of the interesting things for us is—and I don't know whether you have a view on this—if the Government are basing their projections on what they have learnt from you, what you are doing and your published results, which is what I think they are doing, then we are in fantasy.

**Mike Hawes:** My understanding is that on a number of the proposals they have been looking at real world reductions. If you look at NO<sub>x</sub>, again using DEFRA's own figures, they are down some 62% in the real world, 15% in the last four years alone. The progress we are making in the UK is not fast enough. Albeit on NO<sub>x</sub> it is the second fastest in the European Union but it is still too high. We don't decry that. But the road transport sector is making its contribution in the real world to reduce particulates, to reduce NO<sub>x</sub>, especially with these new vehicles. From the modelling that is done by various government agencies—which I am not privy to and I probably would not understand the intricacies of all the modelling—there is evidence from both real world reductions as well as the demonstrable improvements of these new technologies on the road, which is happening.

**Q25 Chair:** So theirs are more accurate than yours? When they are factoring in their analysis of some sort of hybrid algorithm of, "Here is the lab results, here is the real world", not just in the automotive sector but in different sectors, what you are saying to me is that they are working on a truer result?

**Mike Hawes:** No. I am saying they will surely be basing it on delivery of real world, which we are seeing coming down, and how the new vehicles that are coming on to the market will deliver in the real world going forward. One of the critical issues about that, of course, is we sell around 2.5 million vehicles per year in the UK. There are approximately 35 million vehicles on the road. The replacement cycle for passenger cars is around 14 years, so it takes a while for the impact of those new technologies to feed through into the fleet and feed through into road transport emissions.

**Q26 Chair:** Can we just unbundle this a little bit? The Government's projections—particularly for the automotive industry and their emissions reductions as part of this overall map of reducing emissions and improving air quality—are the same figures that you are using or are they—

**Mike Hawes:** I would assume they are the same. I can't obviously speak for the Government.

**Q27 Chair:** If they are the same figures that you are using, based on lab results rather than real world, then they are not accurate.

**Mike Hawes:** I would assume that they are doing it on the basis—and certainly I know Transport for London, for instance, works on this basis—of actual in combination with expected.

**Q28 Chair:** When we have Government Ministers here we will put those questions to them as well. But if they are working on different ones, some clever algorithms and clever people in the civil service are trying to get a more accurate picture, why is the information that you put in front of consumers so misleading?

**Mike Hawes:** The information we are putting to consumers reflects the European regulations around testing. As I said from the outset—and I said on Monday—this does us no favours.

**Paul Willis:** It is a really important point. I have read three different reports. I have read the Transport for London report on emissions, real world driving. I have seen a base from Emissions Analytics on a base of 410 vehicles, and I have read DEFRA. Each has different results. For me, the most important point here is we need one type of measurement. We need consistency in the measurement so we know where we are going. Each one of those results gives a different number.

**Mike Hawes:** That is exactly what is happening with the real world driving emission legislation that is going to come into force across Europe. They have identified the best technology to measure emissions in the real world, separating tailpipe from ambient, and that will give you the clear figures.

**Q29 Chair:** You have been out there doing what a good industry body does. You have been out there lobbying among your European counterparts to make sure that the new Euro 6 testing regime is not too onerous. It has to be right for where the industry currently is, so you end up with the most best fit, let's say most optimistic way of looking at it, rather than people who are concerned with health who would say, "We need to be a bit more serious on this".

**Mike Hawes:** We are equally concerned about air quality and its impact on health. What we are asking for from this legislation is to focus it on the issues. The issue around emissions specifically is NOx emissions from diesel vehicles, so focus it on that, get that into practice urgently. The initial proposal that came forward was setting some very extreme conditions, the more extreme the conditions, the more engineering investment and time required to deliver it. Focus it on the problem ahead, which is NOx emissions from diesel cars and diesel vehicles in the urban area.

**Q30 Holly Lynch:** I want to pick up on a little bit more of that. In your submission to us, Mr Hawes, you said the SMMT supports removing as much of the discrepancy between laboratory testing and real world driving as possible to help reassure customers. Was that your position prior to September of this year?

**Mike Hawes:** Yes.

**Q31 Holly Lynch:** How were you going about engaging Government and Europe in order to deliver a coming together of those discrepancies?

**Mike Hawes:** There are two proposals. We are a global industry. The UK operates within a European regulatory regime, so a lot but not all of the regulation that affects our sector comes from Europe, and that has various advantages in terms of a single market and a single regulatory regime. The proposals to address that gap are twofold. On CO<sub>2</sub> there is a change in the test cycle, moving from something called the NEDC—New European Driving Cycle—even though that dates to the 1980s, to something called WLTP, which is a worldwide one. The current NEDC test cycle is quite benign and does not reflect the type of driving most of us would do because it is set in the 1980s. The new cycle will be much more aggressive, much more reflective of the type of driving we do because it has been modelled on real world driving. That will bring closer together the discrepancy on fuel economy and CO<sub>2</sub> that you see when you pick up an ad for a car or whatever in a magazine, which as I said is set by law. On the emissions side, the air quality side, this is where real world driving emissions comes in. As I said before, the technology now—and only now—is available that will allow you to test and measure particulate mass, particulate number, NO<sub>x</sub> and the other emissions from the tailpipe in a variety of conditions repeatedly in the real world. That is new technology.

Put the two together and those discrepancies that we talked about will gradually reduce. It will never be perfect, however. I need to stress this because everyone in this room will drive in a slightly different fashion; the way you maintain your vehicle has an impact; gradient, weather and the level of technology that you have turned on within your vehicle. There are infinite variations, so it will never be perfect but will bring it much more closely together. We need that to help reassure consumers that they get the type of performance that they expect from what they have seen in the advertising.

**Q32 Holly Lynch:** Your organisation was involved in some of the lobbying to get to that point. Can you explain a little bit more about your relations with Government and with Europe to bring us to that position?

**Mike Hawes:** Sure. We are a trade association. As I said from the outset, we represent a variety of different members with different interests and sometimes those interests are conflicting within the organisation. The SMMT is there to promote the UK automotive sector. That includes issues like investment, job creation and so forth, to ensure that we are as competitive and as productive as possible, and a relationship with Government can certainly help that because the impact of economic fiscal policy has had a direct effect. In terms of the regulation, like any regulators they want to be sure that they are producing regulation that is going to be realistic, robust and deliverable. Over time technology changes and the pace of that technological change is accelerating. We see that in mobile phones and, indeed, you will see it in the automotive sector. I don't think any policymaker

would say that they are the master of all the knowledge that exists, so they invite representations from industry, and we do this on a UN level, an EU level and a UK level. They invite contributions from other stakeholders with specific interests. On this issue it would be clearly environmental groups, health experts, air quality experts, and we have a role to play in that.

**Q33 Holly Lynch:** I think what I am trying to get to is that perhaps these tests are quite weak and don't reflect real world driving on the back of years of quite intense lobbying from the automotive industry. Would you say that that is fair?

**Mike Hawes:** They are certainly not weak. If you look at the amount of investment year on year made by the entire industry to meet these targets—and they have been proven to deliver in the real world—I would not describe them as weak at all. In fact, the EU has arguably the toughest CO<sub>2</sub> targets for the industry with a fleet average of 95 grams by 2020. That is steeper and will come sooner than any other global standard. Even though the entire global automotive regulation is on a similar trajectory, it is steepest in the EU. Now we have the case where we are moving towards real world driving emissions; nowhere else in the world has that. So the European regulation on air quality will again be the toughest in the world.

**Q34 Chair:** Can I just flip this around? I am asking for your response to whether what we have seen in the US is a reflection of the onerous demands on emissions, very stringent, that were set down, combined with the need to have a high performance turbo-diesel engine out there. Both couldn't be met, or am I wrong?

**Paul Willis:** I don't know. The situation in the United States is very different to Europe. The engine configuration is completely different; how the gases work in the combustion chamber and the NO<sub>x</sub> is completely different. The regulations are completely different and the testing is completely different.

**Q35 Chair:** Let me put it a different way. A fundamental question: in the UK and the EU market, is it possible to have a high performance, good selling turbo-diesel vehicle that also doesn't actually poison the atmosphere and impact on the health and wellbeing of people?

**Paul Willis:** I think it is possible to have a high performance turbo-diesel within the legal limits and the regulations that we are in discussion on with the EU and the Government right now.

**Q36 Chair:** One interpretation of what happened in the US was that that circle could not be squared, so a cheat was found in order to make it work.

**Paul Willis:** Unfortunately—and I have to say it and I said on Monday—I am not an engineer, I am not an expert, so I can't comment exactly about the flow of gases.

**Chair:** Maybe at some point we might have to bring an engineer here.

**Q37 John McNally:** On that point about chipping, Volkswagen is reputed as a blue chip company and most people look upon it as such but you said you are not a technical expert. Earlier on, Mr Willis, did you say you had 45,000 technical experts?

**Paul Willis:** No, what I said is that there were 45,000 people in the technical development department.

**Q38 John McNally:** Would it not have been wise to bring one of them with you today?

**Paul Willis:** What I would say to that is in Germany the German Federal Motor Transport Authority are in discussion with our company and they are currently working on a binding timeline in order to fix this problem. What we have said is that we will fix this problem. I think you know that there is a different problem for different engines and we are still working on that problem. For example, on the 2 litre diesel problem, which is 700,000 of the circa 1.2 million cars, we think we can do that with a software fix.

**Q39 John McNally:** That is fine; you think you can do that with a software fix. Going back to my point, I think it would have been beneficial for everyone here to hear from a person who was technically qualified to answer these questions. Anyway, going to my real question, which I haven't actually started yet: could you tell me what is the difference between the level of NOx emissions recorded from a VW vehicle with a defeat device fitted and one without?

**Paul Willis:** I don't know. That is under investigation.

**Q40 John McNally:** So you can't answer the second part of my question, which is: how does this compare to the known differences in emissions between a Volkswagen vehicle being tested in a laboratory and those on the road?

**Paul Willis:** First of all, if I could take a step back. If I can quote the DEFRA report, emissions of nitrogen oxides have fallen by 62% since 1990. I have also commented that the development of our technology, if you go from Euro 3 to Euro 4, 50% reduction of nitrogen oxides, Euro 4 to Euro 5 26% and another 50% to Euro 6. So the industry has been working extremely hard, with the SMMT, with Government, in order to comply with the regulations. You can see it in the media; it is not a secret. That is the point I made earlier about testing regimes in the real world. You can see that certain vehicles have a difference, a conformity factor of between two and four. That is what I have read; I am sure you have read the same documentation, in real world driving.

**Q41 Rebecca Pow:** You quote the DEFRA report, but in the UK we have exceeded our annual mean limit value for nitrogen dioxides, so none of the statistics seem to balance out, do they? What are you quoting us? Clearly we have contravened our air pollution rules and regulations and the car industry has got to be playing a very large role in that.

**Chair:** We were hoping that you would be able to tell us what we might find, both with the discrepancy and anything else, has contributed to this.

**Paul Willis:** Sorry, let me quote again the DEFRA report. Emissions of nitrogen oxide have fallen 62% since 1990. That is Government documentation, which is being consulted on at the moment. When we discussed it earlier, you were also right to say that we are

breaching European law on nitrogen oxide in I think it is 30 of the regions in the UK. But then we have to start a much wider discussion. I am sorry but we must start a wider discussion. I have a DEFRA document in front of me here and, sorry, this does not trivialise anything we have done. I must say that from the beginning. I fully understand the ethics behind this discussion, but I think for everyone's help I am saying in the DEFRA document the contribution from cars generally in the UK—I know it varies in London—is 14%, from heating it is 25%, from electricity generation it is 30%, and so on. My appeal is: if we are going to reduce the NOx, there is more than one thing we have to do. Mr Hawes has demonstrated that we are working to comply with EU6. We are working to develop further technology to comply further with the real world driving regime, but we are not going to get the NOx levels down to the levels that we need to within the law unless there is a much more integrated process. For example, there is an SMMT and Government Go Low driving scheme where we contribute £500,000. The Volkswagen Group contributes more than any other company in the UK to encourage low—

**Q42 Chair:** Sorry to butt in, but can I clarify one thing? I understand you are trying to put it in the context of a wider world picture of: all the other sectors have to play their part but are we not right in saying—are you contradicting what are Government figures—that on average around 80% of NOx emissions in areas where the UK is exceeding NOx limits are due to transport?

**Paul Willis:** No, I am not. I have that report as well. It depends where you measure it because if you take the country as a whole—

**Chair:** It matters a lot to the people where you are measuring it.

**Paul Willis:** Yes, but sorry, in the Government document—

**Chair:** Sorry. Rebecca.

**Q43 Rebecca Pow:** Where the people live would be what we are interested in on this particular Committee because we are particularly interested in health. So it is those 35 zones where 80% is absolutely the right figure, and that is what we are really worried about. I completely understand; we all understand that it is a joint problem. It is not only the car industry, of course, who is responsible for the entire thing, but in these dense urban populations it is a big issue, isn't it?

**Paul Willis:** I fully agree.

**Q44 John McNally:** I want to highlight the fact that a statement has been made or something been said from "Which?" magazine, which is extremely interesting. I don't know if you have had the chance to see it yet.

**Paul Willis:** I have, yes.

**John McNally:** Good. That means you will be able to answer then, so thanks for that.

**Paul Willis:** I hope so.

**John McNally:** "Which?" asked Volkswagen owners what the important factors were when they purchased a car, 96% of the people cited fuel efficiency and 90%



environmental impact, both areas undermined by the scandal involving ‘defeat devices’ that were fitted to these diesel vehicles.” So they do feel that they have been lied to.

**Paul Willis:** I have read the article and I understand fully those statistics.

**Q45 John McNally:** Can I move on? That is fine that you understand the statistics. You mentioned earlier on that you had been writing out to all the Volkswagen owners and they are starting to receive letters.

**Paul Willis:** That is true, yes.

**John McNally:** What I have in front of me here says, “Volkswagen has now started to write to affected customers, the letters are woefully short on detail and do not mention redress, only referring to a service action”—you might be able to tell us what that is—“that will be required to correct the problem. With eight in 10 drivers waiting for more information before they decide what action to take, and three-quarters, 74%, saying that the response from Volkswagen has been poor, detailed proposals are now needed to reassure customers.” Do you agree with that statement?

**Paul Willis:** I agree that the level of information to customers needs to be faster and needs to improve, but if I can just explain something.

**Q46 John McNally:** Do you have a copy of the letter with you that you have sent out? Is it quite long?

**Paul Willis:** No, it is not. It is very short. Can I just explain the perspective? As I said at the Select Committee on Monday, once I knew which vehicles were affected I immediately started the process of how we would communicate. We had advertising across the whole of the United Kingdom over the weekend. We had it in England, Scotland, Wales and Northern Ireland and that steered people to our websites. The first thing we needed to establish, people were saying, “Is my car affected or not?” So that was the first step. We said to them that in due course, once we know exactly what the fix is—which is the second step—and once we know how long it will take to do the fix, we will communicate. That is why I said in my opening statement, the most important thing for my customers now is that I over-communicate, if you will. So we are in the process of that communication and it is my job and my responsibility to make it very clear to everyone what the timeline is and what we will do. I don’t know fully what the technical fix is. That is what we are working with the engineers on.

**Q47 John McNally:** I went to the garages and people that had gone for the test and found out, but that is another question. There is a statement from the Which? executive director, Richard Lloyd, who said that, “Many VW owners tell us they decided to buy their car based on its efficiency and low environmental impact”. This is his quote. You may want to answer him directly. “So it is outrageous that VW aren’t being clear with their customers about how and when they will be compensated. Volkswagen UK must set out an urgent timeline for redress to the owners of the affected vehicles. We also need assurances from the Government that it is putting in place changes to prevent anything like this ever happening again.” I agree with what you said earlier. It is like there are false statements being made here

that, “We are planning things for the future”. How can you plan something? We discussed this yesterday. I thought, “They are in a cul-de-sac here”.

**Paul Willis:** Sorry, I refute “false statements”. I have to say that to you. I have been very transparent and very honest in my communication with customers and we will continue to do so. The whole objective of fixing these vehicles is to make sure that the efficiency is in line with where we said it was, and we will do that.

**Q48 Chair:** I think John’s point is coming to the crux of if it knocks value off people, you will have people who bought this off the forecourts in the last two or three years. You will have big fleets where this could really affect the value of them when they come to—I don’t know how they do it—reissuing their fleets and so on. This could knock real value. Are you having discussions within VW at a European level about how you might have to step in and compensate them?

**Paul Willis:** First of all, again, I read in the press that it is going to have an effect on values, but when I speak to other associations who are not in the press they say that that may not be the case. So let’s look at what happened in the United States. I think I said this on Monday on safety-related issues, safety-related issues that kill people—I will not mention the name of the two car companies—and the residual values. Once the fix was made, there wasn’t an impact on residual value. So I respect the statement, and I respect “Which?” magazine by the way and we have a very close relationship with them.

**Q49 Chair:** You hope that this will not have an effect on values.

**Paul Willis:** I hope it will not have an effect.

**Chair:** Are you factoring in the worst situation, that it might have an effect on values? If so, are you ruling out doing anything to mitigate the loss in value for fleet owners, for individual owners and so?

**Paul Willis:** I think it is premature to have that discussion.

**Q50 Chair:** It is premature, but you are not ruling it out? As the head of VW in the UK, are you in a position to say that if it gets to a situation where fleet owners, corporations, bodies and individuals have lost out, VW will make it good for them?

**Paul Willis:** We will sit down and have discussions with those fleet owners, with the leasing companies, if they require discussions with us, yes, of course.

**Q51 Chair:** You will have the discussions?

**Paul Willis:** We will have the discussions.

**Q52 Caroline Lucas:** I want to come back to John’s original question, which was around how much more NOx has been emitted by your cars than would have been the case had the claims not been dishonest? I don’t want you to go into a big answer but can I establish right now that you are saying that you cannot answer that question?

**Paul Willis:** None.

**Q53 Caroline Lucas:** How can that be the case? How can it be none?

**Paul Willis:** No. Sorry, what we are talking about here, what we have been discussing today is a laboratory test. There has been no suggestion that there has been any influence on real world driving. So, as a result of what we are discussing today, there is no indication that there has been any more NOx put into the atmosphere, no suggestion.

**Q54 Caroline Lucas:** But there must have been. If your tests were underplaying the amount of NOx that has actually been emitted, there must be a discrepancy between what those laboratory figures said and what the actual figures are.

**Paul Willis:** There are two separate issues. The type approval regime has a limit and the limit under EU6 is 80 milligrams per kilometre. So the car goes in the lab, and all cars go in the lab and they have to be below a certain level. That is what we are talking about today. We are talking about the testing regime. We are not talking about real world driving. Everybody knows—it is in the public domain—that there is a delta between the test regime and real world driving. Therefore, it is entirely logical that there is no difference in the NOx in real world driving because the test and real world driving are completely separate.

**Caroline Lucas:** That doesn't follow at all.

**Q55 Chair:** If we accept that, if when these go in for MOTs and so on that that result is different, have you analysed what the difference is in terms of CO<sub>2</sub> emissions on the road? Are these cars, are these vehicles, are these vans going back out and performing differently on the road from what they are doing in tests?

**Paul Willis:** First of all, there is no NOx test in the MOT. That is a fact. I come back to my point. You can talk to the media, you can talk to different test authorities, it is in the public domain and it is no secret, it is clear for everyone to see that there is a delta between the laboratory and real world testing. That is why we have had the extensive discussion in order to work with the SMMT and Government to ensure there is a regulation on the limit of real world driving.

**Q56 Holly Lynch:** I want to come to this issue about the fix. Your CEO last week said that all cars affected by the rigging would be repaired by the end of 2016. I know you expressed some concerns about being able to deliver against that when you appeared before the Transport Select Committee earlier this week. Can you explain again for us why you have concerns about that?

**Paul Willis:** What I said is I used the word “risk”. I think that in the United Kingdom we might have some risk to deliver that in 2016, for two reasons. One is: I would like to see more clarity around the fix of the 1.6 engines, which is a more complicated fix because it requires a software and a hardware fix. There is a timetable for this, of course, but I am being very transparent, so that is one uncertainty. The second uncertainty, which of course I can manage and control much more, is the capacity to do it in the retailer network. I did some rough calculations and, basically, if we started the fix from January and took 25% of our network capacity we would do it by the end of the year. I don't know yet how realistic that is. My absolute goal is to make sure we fix this for our customers and we fix it by the

end of 2016. I just think that we have to be honest and transparent and say, “There is some risk to that” but of course that is my goal.

**Q57 Holly Lynch:** As you have already mentioned, because that capacity is within your remit, you can do something about that. Do you have any plans to increase your capacity so you can do that?

**Paul Willis:** The capacity is kind of fixed because it is ramps and buildings, but what my team are working on, we are in discussions with the AA and we are looking at other solutions in order to add additional capacity over our retailers. So the answer is we are in discussion about that and we are trying to do it because it would be good if we could fix this by the end of 2016. I was just being honest about the risk involved.

**Q58 Rebecca Pow:** Maybe it is me, but I am still confused about the question Caroline was asking. I wonder, Chairman, whether we might ask for an explanation in writing to the Committee about this difference between the fact that you say there is no extra NO<sub>x</sub> at all in the atmosphere than there would be. Yet I understand, with your defeater system or the system that is on the car, they passed the tests at lower than the level that they needed. So if we could have a simple response; perhaps you could write it in a couple of paragraphs.

**Chair:** I think maybe what you are referring to is you don’t think there is a problem in the UK, but there is darn well a problem in the US. The extrapolation of that for us is with all the reassurances—and it is good to hear the reassurances—if we were to find out that similar devices were used in the UK, the same thing applies. In the US it is the case that there is a material difference and that these vehicles were being fixed on the NO<sub>x</sub> test. I know what you are saying that there isn’t a NO<sub>x</sub> element to the MOT in this country. But if there has been fixing here to do with NO<sub>x</sub> or CO<sub>2</sub> or whatever then—

**Paul Willis:** Let me just come back, the multiple factors in the United States of the laboratory and real world test, I don’t recognise those numbers.

**Q59 Caroline Lucas:** But is there a discrepancy? Is the Chair right to say there is a discrepancy in the US?

**Paul Willis:** There is a discrepancy in the US, but there is a discrepancy in Europe and if you read the Department for Environment, Food & Rural Affairs’ draft plans to improve the air quality—your documentation—it shows that. Also I have another document, which is the ICCT report; I am sure you have read it. The ICCT report plots all of this, but of course I will come back to you for clarification in writing.

**Chair:** Brilliant.

**Q60 Caroline Lucas:** As I said earlier, this is a question that has not been answered yet. In the Transport Committee you said the UK testing regime was old-fashioned and not fit for purpose. Can you explain what the most robust testing regime you operate under is, what would need to be done to close the gap between what you are saying is a pretty rubbish UK testing regime, and would it then include the UK testing regime having a NO<sub>x</sub> test?

**Mike Hawes:** We are not saying the testing regime, the way we go about testing, is not fit for purpose.

**Q61 Caroline Lucas:** What is not fit for purpose then?

**Mike Hawes:** The test cycle that is producing these discrepancies between laboratory tests that are published, and the real world tests, the actual test cycle, because it dates back 20 or 30 years. As we said before, we now have the advent of real world driving emissions technology, which allows you to test it and will also help to address that.

**Q62 Caroline Lucas:** What needs to change to the UK testing cycle to make it more robust?

**Mike Hawes:** As I said before, the introduction of something called WLTP, which is a much more aggressive test cycle.

**Q63 Caroline Lucas:** When do we get that, did you say?

**Mike Hawes:** Probably 2017, and the introduction of real world driving emissions; again, a similar timescale.

**Q64 Chair:** I am going to pick up on Rebecca's suggestion and, rather than you write to us off the back of this—I think there is a genuine issue here, not a misunderstanding but of real detail—we will write to you and it would be good to have a response to a particular that we write to you on.

**Paul Willis:** Of course.

**Chair:** If you are happy with that and if you are happy we will put this as part of the public inquiry that we are going on to. Thank you very much.

**Q65 Luke Hall:** I want to come back and pick up on this point about the potential gap in CO<sub>2</sub> emissions on testing. You seem to accept that there is a potential there. To what sort of extent is that known about, to what extent are policymakers aware of that gap, because clearly that has an impact on Government policy and how it is formulated? Could you tell us a little bit about the extent of the discussions you have with the Government, the extent to which you communicate with customers to make sure they are aware of that gap?

**Mike Hawes:** The discrepancy between published CO<sub>2</sub> figures that come from this test cycle and what customers may get in their real world has been known about for some time, and that gap is getting bigger for some logical reasons. As I said before, the test cycle itself is quite benign. That will be changed to make it more aggressive and bring that closer. Also that test dates back to the 1980s and is intended for the purposes of comparison, so a consumer can look at a number of different brands and products, they have published numbers and they will know that those numbers are directly comparable. That is not the case for air quality emissions. For CO<sub>2</sub> it is directly comparable and the test cycle, given its age and that the focus has to be to make it comparable means you have to have similar technologies in all vehicles. So all the technologies that many of us would take for granted now—air conditioning, heated seats, blowers, satnav, increasingly connected technologies—all have to be switched off, yet all those technologies draw

energy. The first thing you do on a cold morning is turn all that stuff on but it has to be turned off for the test, which is why when it comes to publishing the test figures in any advert, you have to have the disclaimer that there will be a variation between the test facilities and what would be experienced in the real world.

**Q66 Luke Hall:** Can I follow up with Paul, given the fact that VW senior management, yourself, claim to have had such little knowledge of what happened with the NOx devices, the defeat devices, why should consumers going out and purchasing these products have any confidence in those assurances on CO<sub>2</sub>? What is giving them that confidence when you claim to have known so little about the NOx devices?

**Paul Willis:** I keep coming back to the point that the NOx issue is a laboratory test issue. In the CO<sub>2</sub> discussion we publish figures on I think it is urban cycle, and then there is a middle cycle and then there is a combined. That is a completely different measurement. I have had very few complaints from customers so far on miles per gallon. People seem to be satisfied with our high quality products.

**Q67 Luke Hall:** I want to come back to something that Caroline was talking about earlier near the beginning of the discussion about: who has something to gain overall from this? You said you had been with VW for 15 years and you understood the structure of the business well. You must have in your mind some idea about at what point in that structure people were able to take these decisions to allow this to happen. Can you tell us a bit more about at what level this could potentially have come about?

**Paul Willis:** I think I can speculate all day long but I am not sure that has any value. We have an internal investigation and the internal investigation wants to find out who, why, when, for what reason, and when we get the precise results of that investigation we will discuss it in the public domain, I am sure.

**Q68 Luke Hall:** Presumably you can eliminate pretty early some layers or some tiers, so it can only be a certain degree of tiers that were able to physically take this decision or make this happen?

**Paul Willis:** This is total conjecture. I don't know. Let's wait for the investigation and then we will know.

**Q69 Luke Hall:** How long will that take?

**Paul Willis:** I don't know. It is currently in play right now and the supervisory board have said that when they get information they will share that information.

**Q70 Chair:** No idea of the broad timescale? As a corporate entity, you must have some idea when you will know.

**Paul Willis:** It depends how long it takes and there will have to be many interviews, of course. But I have read somewhere that we should be hearing something before the end of the year—I would hope—and I think it is important for the company and for transparency.



**Q71 Holly Lynch:** Can I just come back to this issue about the fix and picking up on these issues about where the problem actually lies? You have said that the fix for the 1.6 engine, if I am not mistaken, requires both a software and a hardware fix, and that will be delivered by the end of 2016.

**Paul Willis:** Yes.

**Holly Lynch:** If the problem lies exclusively with software at the testing stage, what exactly is it that you are fixing on these vehicles that requires a hardware fix?

**Paul Willis:** No, there are two issues. The 2 litre engine is a software fix and the 1.6 litre is a software and a hardware. In order to pass the test, my understanding is that the software is recalibrated but the injectors on the 1.6 engine, my understanding is that the 1.6 engine is not as sophisticated as the 2 litre. That is why it is a different remedy.

**Q72 Rebecca Pow:** The test for the carbon dioxide emissions are the ones that are deemed as old-fashioned because they are old tests. Is that right?

**Mike Hawes:** The test cycle, NEDC, is a bit old, yes.

**Q73 Rebecca Pow:** The test cycle is old-fashioned. Is it not right, Mr Chairman, that the Government were waiving people's licences, the tax, if they had a car with low emissions? That is right, is it not? So, with our green hats on, we all rushed if we could to buy or hire those cars. It was a massive incentive because people felt they were doing good for the environment. I truly was one of those people. Then you discover that the actual test that was proving that you could get one of these cars was not all fit for purpose, and you knew that. All the car manufacturers knew that. Why didn't anybody say anything? Also, one does pose the question as to why the Government did not check the test that was being used for the waiving of that little tax incentive as well. Why were we relying on an old test?

**Mike Hawes:** Are you referring to zero emission vehicles, low emission vehicles?

**Rebecca Pow:** Yes. I might be completely confused, but could you just correct me?

**Mike Hawes:** Yes. Zero emission vehicles have tended to have zero vehicle excise duty.

**Q74 Rebecca Pow:** Yes. It was a big incentive for people to buy those cars and the idea was for the manufacturers to make cars with lower emissions, as I understand it.

**Mike Hawes:** Which they do. A battery electric vehicle will still have a zero emission tailpipe under any test.

**Rebecca Pow:** Yes, of course.

**Mike Hawes:** Whether it was a flawed off-fashioned one or brand new, it will still be zero emission and it is still a growing market and all the vehicle manufacturers are producing ever more of these zero emission vehicles and ultra low emission vehicles to address these issues.

**Q75 Rebecca Pow:** I think we are going to get on to electric cars. Before that happens, what about this question about the fact that everyone knew that the test was not really good enough?

**Mike Hawes:** The test, irrespective of its accuracy, is still useful for comparative purposes for a consumer. Everyone testing a vehicle in any part of Europe tests to that same standard—produces the result—so car A and car B may have a difference of 10 miles per gallon or 15 grams per kilometre and you can make your decision accordingly.

**Q76 Rebecca Pow:** It is not about miles per gallon. I am not talking about miles per gallon. I am talking about emissions.

**Mike Hawes:** There is a link between fuel economy and CO<sub>2</sub>.

**Paul Willis:** You are absolutely right. Over a period of time there have been tax breaks in place to incentivise diesel engines. The reason for that was that diesel car engines use less fuel and have less CO<sub>2</sub> than petrol engines. There is definitely a policy across Europe—including the British Government—that has steered people to diesel. For example, the number I quoted, 2000, 14% next to 50%. What we have said is it seems as a result of this emerging data, more science on NO<sub>x</sub>, the pendulum has simply swung too far and the view is it needs to come back a little bit because it is more than about CO<sub>2</sub>. It is about CO<sub>2</sub> and NO<sub>x</sub> and particles. So there is a government regulation issue and tax break issue.

**Mike Hawes:** What we would say is that, given the level of interest in air quality over the last 12 to 18 months, we still cannot lose sight of CO<sub>2</sub> and climate change. In all the debate around this issue, it seems to be forgotten. We can't forget about it. We have among the toughest standards in the world we need to meet on CO<sub>2</sub> as well as air quality, and that seems to be missing from this debate.

**Q77 Rebecca Pow:** Mr Chairman, I don't think it is forgotten at all. That is the sort of driving force of all the people on this Committee. I would say if it is so important and you knew it was so important, you were still using a test that allowed you to get away with emitting more carbon dioxide than you should have been because the test was so old-fashioned.

**Mike Hawes:** No, but we are still driving down CO<sub>2</sub> emissions some 30% in the last 10 years.

**Q78 Chair:** You clearly think that we, as a Committee, should be arguing to Transport Ministers and to the Chancellor that they need to be a bit cleverer, based on the data that is available now on the wider impacts, about fiscal and regulatory incentives. Would you agree?

**Mike Hawes:** We would suggest that in society as a whole—and obviously climate change is a national thing where air quality tends to be a local thing—there still should be incentives to encourage the development, introduction and take-up of low emission vehicles, which includes battery electrics, hybrids, plug-in hybrids and now fuel cell vehicles.

**Q79 Chair:** Yes, indeed, but you seem to be arguing as well that, for you as an industry, whatever mechanisms are in place to give you the signal of where you should invest, based on the ethical discussions we have had as well in light of this Committee's remit, should be a bit more subtle, a bit cleverer. They should be doing CO<sub>2</sub> but they should also be doing NO<sub>x</sub>. They should be doing human health and wellbeing as well as the ozone layer and everything else. They should be brought up to speed in order to do that.

**Mike Hawes:** Yes. They should be technology neutral, so you set the standards, let the industry figure out what technology is going to get you there. As you have seen, there has been a focus on CO<sub>2</sub> and fiscally regulation-wise there has been CO<sub>2</sub> regulation and there has been air quality regulation. That air quality regulation has changed its focus over time to obviously reflect scientific opinion on effective air quality and human health. Now the focus is on NO<sub>x</sub>. NO<sub>x</sub> is coming down, not as quickly as it needs to and not to the level that it needs to achieve, and that is what the industry has to address.

**Q80 Caroline Lucas:** A question for Mr Hawes. It has been alleged that the UK Government have been lobbying the EU to carry over features of previous testing regimes that would mean that real world CO<sub>2</sub> emissions would be 14% above those that were actually claimed. Has SMMT lobbied the Government to do that?

**Mike Hawes:** On CO<sub>2</sub> regulation?

**Caroline Lucas:** Yes.

**Mike Hawes:** I am not sure exactly what the allegation is in terms of—

**Caroline Lucas:** I am surprised you are not, because it was a major piece in the national press that made it very clear that there were leaked documents seen by *The Guardian* that show that the UK, France and Germany, “lobbied the European Commission to keep loopholes in car tests that would increase real world carbon dioxide emissions by 14% above those claimed”. If *The Guardian* has documents saying that the UK has been lobbying, then it would seem not unreasonable to wonder whether SMMT has been taking part in the lobbying.

**Mike Hawes:** As we always say, we want regulation that is robust, that is repeatable, that reflects technology.

**Q81 Caroline Lucas:** Can you tell me categorically has SMMT been involved in the lobbying that has been demonstrated in these leaked documents that have been arguing essentially for CO<sub>2</sub> emissions to be larger than they would have otherwise been?

**Mike Hawes:** No, we want a robust test.

**Q82 Caroline Lucas:** I am sure you want that but can you just tell me in your words so we can have it on the record?

**Mike Hawes:** I have had no meetings with any Ministers to say we want any loopholes.

**Q83 Caroline Lucas:** Lovely. That is on CO<sub>2</sub> and on any other emissions?

**Mike Hawes:** Correct.

**Q84 Caroline Lucas:** I have been a Member of the European Parliament. I know how hard the car industry lobbies when it comes to EU standards and they are not normally in the forefront of trying to get things to be stronger than they are now. I want to ask you about conflicts of interest. According to a Greenpeace investigation published in *The Telegraph* earlier this week, the Vehicle Certification Agency made over £80 million from the auto industry for type approval in the last decade and it has become increasingly commercialised. Do you think there is any danger of a conflict of interest when the Certification Agency is itself so dependent for its finances on the car industry?

**Mike Hawes:** No, because the Vehicle Certification Agency is an independent body. It is part of government. It is not unusual for a public body that is responsible for approvals of anything to have its business dependent on customers, which in this case is the industry.

**Q85 Caroline Lucas:** You think there is no risk that the needs of the car companies would be prioritised over the wider public?

**Mike Hawes:** No. In a similar way, if you sit your driving test it is an independent authority that determines whether you pass or fail, yet they will get their income from that driving test fee. It is a similar approach.

**Q86 Caroline Lucas:** I am not sure it is, but anyway. Could you tell me how much money the SMMT receive from VW in membership fees?

**Mike Hawes:** I wouldn't have that figure to hand.

**Q87 Caroline Lucas:** Could you let us know?

**Mike Hawes:** If you wish. Incidentally, I would ask that to be kept commercial in confidence.

**Q88 Caroline Lucas:** Thank you. Can I just push you on you have said that the SMMT has not lobbied the Government to try to make a case for reducing CO<sub>2</sub>. Nevertheless, it has happened and would you agree that basically designing under measurement into the testing regimes is pretty much the same as designing software to deceive the test; it comes to the same thing?

**Mike Hawes:** No. I go back to the answer I gave earlier. I think what we want is a robust, repeatable test that reflects—

**Q89 Caroline Lucas:** I don't want you to repeat what you have told us before, because that is already on the record. I want you to answer whether you think, given that this has happened—you have said the SMMT has not been involved in it, that is marvellous—and given that the UK, among other countries, has been lobbying to have greater CO<sub>2</sub> emissions, do you think—

**Mike Hawes:** They have not been lobbying to have greater CO<sub>2</sub> emissions.

**Caroline Lucas:** They have been lobbying the EU to carry over features of previous testing regimes “that would mean real world CO<sub>2</sub> emissions would be 14% above those claimed”.

**Mike Hawes:** As I said before, there will always be a difference between a test cycle and real world. You need to make sure that you bridge that gap as best you can, but there will always be a gap.

**Q90 Rebecca Pow:** That is the big question we need to ask about why there is. Just to go back—while Caroline was asking some excellent questions though—on the CO<sub>2</sub> testing, did I hear you say that when you go in for the test you switch off the air conditioning, the this, that and the other, and you do the test without it when you know when people are in their cars they are using all those things?

**Mike Hawes:** Exactly.

**Rebecca Pow:** Why don't you have a test that replicates the average use of an average driver? It seems to me absolutely crackers. It is not a real test, is it?

**Paul Willis:** That is why we said it is not fit for purpose.

**Mike Hawes:** The test is for comparison. It dates back to the 1980s. If you want to compare two cars: some have it, some don't. The new test will be much more robust, higher weight loads, and will increasingly reflect that technology, but remember technology increases rapidly and for that comparison, with one car that has the most advanced technology and one that might be older, there will be a difference. To go back to your original point about: why will that gap never be totally closed? That is because you and I will drive differently, the way we maintain the car, what the temperature is, what the—

**Q91 Rebecca Pow:** Yes, but that is not going to make an enormous difference. It is slightly nit-picking.

**Mike Hawes:** It makes a significant difference. In terms of fuel economy, the temperature can have an effect of up to 10% in terms of miles per gallon.

**Q92 Caroline Lucas:** We keep talking about this gulf between real world results and laboratory results. Is there something that would say that there should be a maximum discrepancy? Otherwise we are talking about as long as a piece of string.

**Mike Hawes:** That is one under discussion at the moment. I understand the EU Commission has tabled its proposals. It has not made them public so we have not seen them, but there will be—exactly what you describe—a figure in there.

**Q93 Caroline Lucas:** As I understand it, SMMT launched a pro-diesel campaign earlier this year. Mr Hawes, are you reconsidering the wisdom of that campaign, given that so many diesel cars don't appear to meet European standards?

**Mike Hawes:** No, diesel cars meet European standards. That campaign was basically to inform people about the contribution diesel makes in terms of road transport, in terms of reducing CO<sub>2</sub>. We have always said, and the industry will say, for consumers it is about purchasing the right car for the type of driving they are doing. If you live in the inner city it would probably make sense to drive either a small, fuel-efficient petrol or an electric or a plug-in. A significant number of people will do longer driving on motorways and so

forth where the benefits of diesel, in terms of reduced CO<sub>2</sub> and better fuel economy, is the better choice for them.

**Q94 Caroline Lucas:** If the Government decide to reduce incentives to use diesel in pursuit of its NO<sub>x</sub> and public health goals, how would you expect customers and the industry to respond?

**Mike Hawes:** Again, customers would be making the appropriate choice of vehicle for the type of use they have. For many, they like diesels in terms of their performance and their fuel economy. That won't change. The level of fiscal incentive around a diesel may change. Certainly for fleets, as Mr Willis said earlier, they will be looking very closely at the total cost of ownership—of which pence per mile is critical—and they will make the decisions accordingly. For the industry, it is about delivering those vehicles that enable a consumer or a fleet to have the lowest possible costs, emissions but maximum safety performance.

**Q95 Chair:** Consumer choice is one thing. You have talked about as well not having a Government that pick technologies and drive towards a particular technology, an open choice of technology, an open choice for consumers. Knowing what we now know, and the basis of the discussion we have had that has covered commercial aspects, technical aspects but also genuine ethical and healthcare issues and health and wellbeing, it does go back to that old situation of outbreaks of cholera in London when the doctor who made the breakthrough in cholera outbreaks could point to where the open sewers were running alongside properties. We now know, we can pinpoint on a map, in cities—not just London but elsewhere—exactly where poor emissions, both particulates and NO<sub>x</sub>, are impacting on human health. You can see it as clear flashing lights on a map. On that basis, from the discussion we have had today, what would your thoughts be as VW, as industry motor manufacturers and traders' representatives, on whether not simply consumer choice, not simply Government not being pro one technology or another but would you say to Government they should now be considering, when the evidence is so clear, that they ought to be taking more fundamental decisions to influence some of those consumer choices, to influence the way people choose what type of vehicle to use? As you just said yourself, if you are in a city it would not be wise to be regularly driving a diesel motor car. You have just said that. You are the head of SMMT in this country. If the consumer does not respond to that, should the Government be responding to that?

**Mike Hawes:** First of all, the consumer should take the appropriate choice. If that is all the driving they are doing, then absolutely. Unfortunately, or fortunately, most people tend to do a variety of driving, so you need a vehicle that fits your driving modes. Certainly the Government already have, working with the industry, a number of those mechanisms in place. We have a communication campaign around Go Ultra Low, trying to raise awareness of low emission vehicles. We have currently a fiscal regime that incentivises low carbon driving. There is a regulatory standard now in place for Euro 6, which means all vehicles put on the market must meet that standard and, as we say, that standard gets tougher. The mechanisms are in place. What we need is basically an understanding of the implementation of these regulations on the vehicles and getting those cleaner vehicles on to the road and moving on the road. As I said before, 14 years is the life cycle on average of a car; it often can be slightly longer in major urban areas like London. You need to get



fleets to turn over and you need to make sure that those vehicles are on the roads as immaculately as possible.

**Q96 Chair:** Mr Willis, all the focus has been on the motor industry and VW. Do Government need to do more when we know it is glaringly obvious where the impacts are?

**Paul Willis:** We support the implementation of the real world driving test, which is what Mr Hawes has just said.

**Q97 Chair:** But no further?

**Paul Willis:** I think the first step is to introduce the real world test but at the same time we are investing billions in technologies, in electric vehicles, in plug-in hybrid vehicles. As I said earlier, we are the only manufacturer that has a model that has petrol, diesel, electric and plug-in hybrid. So we are playing our part in investing in technologies to support everything you have said.

**Mike Hawes:** The other issue I would also add is that, when you look at cities like London with an already announced low emission zone, DEFRA consultation providing a national framework, I would argue that the issue is being recognised and is being addressed. The industry is playing its part but, as I said, we will continue to do more.

**Q98 Chair:** I want to draw this session to a close, because you have been very generous with your time, but just with deference to colleagues, are there any last questions that anybody wants to ask?

**Rebecca Pow:** It has been absolutely fascinating and I would definitely say it is a role this Committee should do. We are all thinking about transport and the future of our nation and plans are being made everywhere for our networks of railroad and all that. We need to move with it so that we don't do it 10 years afterwards, we do it now and we feed all this in.

**Chair:** Thank you for your answers. As we have indicated, there are some areas that we will want to write to you on. It might be a slightly longer letter, because there are some questions that we have not got to, but we will write to you on it. It has been a useful session. I hope you are anticipating that you don't have to come back on a weekly basis.

**Mike Hawes:** Or twice in one week is—

**Paul Willis:** Thank you very much.