



Transport Select Committee

Oral evidence: Vehicle type approval, HC 622

11 January 2016

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Members present: Mrs Louise Ellman (Chair), Robert Flello, Mary Glendon, Karl McCartney, Stewart Malcolm McDonald, Huw Merriman, Will Quince, Iain Stewart, Graham Stringer, Martin Vickers

Questions 39-93

Examination of Witnesses

Witnesses: **David Bizley**, Chief Engineer, RAC Motoring Services, **Graham Hope**, Editor, *Auto Express* and *Carbuyer*, and **Jim Holder**, Editorial Director, *What Car?*, gave evidence.

Q39 Chair: Good afternoon and welcome to the Transport Select Committee. Could you give us your name and organisation please?

David Bizley: I am David Bizley. I am chief engineer of RAC Motoring Services.

Jim Holder: I am Jim Holder. I am the editorial director of *What Car?*, *Autocar* and *PistonHeads*.

Graham Hope: I am Graham Hope. I am editor of *Auto Express* and *Carbuyer*.

Q40 Chair: Thank you. The US justice system is suing Volkswagen for up to \$41 billion. Do you think that the European authorities have been a bit of a soft touch with Volkswagen?

Jim Holder: What we have to be very clear about is that Volkswagen were caught cheating to a different set of regulations in America. While it is clear that they had the same software installed in Europe, it is not clear that they in any way cheated any regulations or that they used the software in any illegal way. It is therefore understandable that America would be harder than perhaps Europe is going to be.

David Bizley: From an RAC perspective, we do not have a view on that subject. Our primary focus is on ensuring that owners of Volkswagen vehicles have their vehicles rectified quickly, free of charge and that they do not lose any of their functionality in terms of fuel economy or driveability. Beyond that, it is for others to decide what kind of legal action may be appropriate from a public sector point of view.

Q41 Chair: Mr Hope, do you want to give us your views?

Graham Hope: I would just echo what both my colleagues have said. I do not think it is for me to sit in judgment in terms of what they should be fined or any punishments they should receive in different markets. Clearly, the software was fitted on cars that were sold globally, but it is subject to different regulations in different parts of the world. That being the case, I do not think it is right to compare and say that, because they face a potential heavy fine in America, Europe has been soft on them. I do not think that is relevant.

Q42 Chair: Do you think there should be stronger penalties here for doing those things?

Graham Hope: Possibly there should be stronger penalties for manufacturers that transgress the regulations, but as I understand it, the regulations were not transgressed, so it obviously makes it quite difficult to punish someone who has not actually broken the regulations. Clearly, the regulations need looking at, but I would argue that if they have not broken the rules it is very difficult to punish them.

Q43 Chair: It has been reported that Volkswagen say that they do not believe that the emissions scandal will have any impact on resale prices. Is that correct in your view, Mr Holder?

Jim Holder: It is correct that that is what they said. If you talk to the experts, there is a very mixed view. In the three months since the scandal, there has already been some evidence of cars taking longer to sell and selling at a slightly lower price, according to one residual value expert. Other residual value experts are biding their time before giving an opinion. There is some small evidence of a very small change in prices and sales times.

Graham Hope: We have spoken to the acknowledged experts in the field as well. We have been told, and the evidence seems to suggest, that at this stage there is no effect on residual values. I would point out that it is still relatively early in the story as it unfolds. As a case in point, the new car registrations recorded for December, which were published at the start of this month, would probably relate to orders placed prior to the story unfolding. The story broke in mid-September. There is generally a 12-week lead time from orders placed to cars being registered, so the new car registrations have not yet really taken into account any public reaction to what happened. We might get a truer picture in January and February of how the new car market is reacting. There may then possibly be some effect on residual values. At this stage, there does not appear to be a huge effect, but it is quite early in the process.

Q44 Chair: You are saying that we would not really know yet.

Graham Hope: It would be premature to make any kind of definitive judgment.

David Bizley: During October, the RAC conducted a survey of a panel of motorists. It was a 2,500 representative cross-section of motorists. We asked them their views as to whether the owners of diesel vehicles in that group expected to see any impact on residual values. Two thirds, or 63%, said no; only around 12% had any real concern about residual values being affected. A small minority, 22%, thought that it might make diesel vehicles a little

more difficult to sell. There was certainly no evidence of panic or concern among owners of diesel vehicles at that particular point, when publicity was probably at its maximum.

Q45 Chair: Do you think the Volkswagen vehicle owners should get any compensation?

David Bizley: That depends on what happens over the next year. Owners are entitled to expect that their vehicles will be brought into line so that they meet the requirements of the tests without any kind of defeat device being involved. They should expect that the fuel economy is as good after those changes as before and that the vehicle is pleasant to drive. If it falls down in any one of those areas, as an owner I think it would be quite reasonable to expect some form of compensation for that.

Q46 Chair: Do the other panellists agree or have anything to add?

Jim Holder: Yes, it seems a very fair answer.

Q47 Chair: How do the owners see it?

Jim Holder: There is a mixed view. There are some owners who are very angry and some who are very relaxed. From the feedback I have had, I would say that it is a fairly even split. A lot of people trust in Volkswagen to fix it. They have given their word and people expect it to be fixed. The key for compensation is whether VW can keep their promise that the cars will not be materially affected in any way. If they can do that, I think the case for compensation is greatly lessened.

Graham Hope: Obviously, we have spoken to Volkswagen UK at regular intervals throughout this story to keep abreast of what is happening. I spoke to them most recently on Friday specifically to ask about compensation and what was happening. In a press conference in December, Mr Müller, the CEO, was quoted as saying, “We’re working on an effective package for our customers. There will be an attractive package, let’s call it compensation, for the reduction in value of cars.”

Since then we have not really heard anything from Volkswagen UK in terms of how that would manifest itself over here. Speaking to Volkswagen UK on Friday, it was described as “possibly being a slight mistranslation” and I was told that there would be no compensation. Instead I was told that there would be what was termed a “possible support package for certain customers who filled certain criteria.” One of the criteria that was discussed was, for example, an owner who lives in quite a rural location and faces a lengthy journey to get their car fixed—to get the remedial work done on the car. The criteria are yet to be determined, and that is still part of an ongoing process. It would appear at this stage that Volkswagen UK do not intend to provide compensation. As my two colleagues said, we need to see if the remedial work addresses the issue without any compromise in performance.

Q48 Chair: There seems to be a big difference between what is being offered in the States and what is being offered here. Is that seen by motorists as fair?

David Bizley: I am not sure that the average motorist is aware of precisely what is happening in the States. Generally, understanding of emissions-related matters is relatively low. An awful lot of motorists equated emissions to carbon dioxide emissions as opposed to pollutants, which are the main focus for this. In the United States there is a reputation

for a litigious approach to matters. Perhaps we take a more balanced view in Europe. The focus is on whether people are treated fairly in Europe; the United States needs to look after its own interests.

Q49 Chair: Are there any other views on that?

Jim Holder: We have been presented by Volkswagen with a fix in Europe. In the States they have yet to come up with a satisfactory fix. In Europe, the fix appears to be either software or very minor technical improvement. In America, to meet the regulations, it looks almost as if they might have to fit new engines or even buy back the cars. The scale of the problem in America is very different from that in Europe.

Q50 Robert Ffello: Do you think that the average motorist understands what on earth is going on with VW? On the one hand they hear that some vehicles might have to be recalled and have a software or hardware fix. They are also hearing that actually that is irrelevant because the vehicle would not have failed the test anyway. They are hearing that it might affect performance, but that it almost certainly will not affect performance, and therefore there is no compensation. Do you think most motorists will wonder what on earth is going on, and why VW are not being clear as to what on earth is going on?

David Bizley: I certainly think there is a fair level of confusion among motorists. Prior to this, I do not think there was very much understanding at all about the nature of the emissions and what effectively was under the bonnet in order to achieve the right situation. While it was generally well understood by those involved in the motor industry that real-world emissions from diesel vehicles manufactured over the last 10 years were higher for all vehicles than the test values, I do not think there was any awareness of that among the general public. Therefore, it is not surprising that there is a level of confusion. Most of the inquiries that we get at RAC are simply asking us to explain what the situation is. We get questions like, “When my vehicle is recalled, should I take it in?” Of course the answer is yes, but, in an absence of understanding, there are a certain number of people with a vehicle that, from their point of view, is working perfectly well, who are saying, “Well, there’s nothing wrong with my car as far as I’m concerned, therefore I’m just going to keep my head down.” There is still a need for everybody—not just VW but organisations like RAC and the motoring press—to try to create as much understanding of the situation as we can.

Jim Holder: It is very clear that there have been two scandals: one relating to NO_x and one relating to CO₂. As soon as the first one broke in the press, it became a scandal surrounding mpg. What is clear from our readers and the feedback they are giving is that they are fairly angry on a corporate level but fairly understanding and relaxed on an ownership level. They understand that there is no immediate need to fix the cars. They understand that the fix will not materially change anything in their lives or the ownership of that car. It is a very clouded issue, but there are two clear sides in the frustration that has come back.

Graham Hope: We publish an ownership satisfaction survey every year called “Driver Power”. It is published every April, and last year we had 61,000 responses, so it is a fairly comprehensive survey. It is open all year round on our website, autoexpress.co.uk, so we have been monitoring the responses of users of the website since the story broke. It is quite

clear, as Jim said, that there is a huge variety of different responses from owners, ranging from outrage, anger and confusion to complete indifference, to be perfectly honest. I had a look at some of the most recent verbatim comments in preparation for this session last night and picked out one that I thought summed it up quite neatly. This is what one owner says: “Obviously it does not achieve the car maker’s figures but is not too bad. The tax is only £30 pa which is excellent. However, as the emissions on this car have been fiddled (VW scandal) it remains to be seen what will happen.” That explains clearly the level of confusion that exists. Obviously it was a NOx cheat, but the tax relates to CO₂ emissions. That is not an uncommon view among general members of the public.

Q51 Robert Flello: Do you think that VW have made things better or worse, or have they been indifferent too?

Graham Hope: I do not think they have been indifferent. They have behaved predictably for a company of that size faced with a problem of such magnitude. They have been pretty slow and very cautious, which has been unhelpful to consumers. The story broke in mid-September—18 September. The first date we were aware of letters going out to owners telling them that their cars were affected was 13 October, so there was a period of almost a month when a lot of owners were left in limbo, confused and concerned. I do not think that was terribly helpful at all. However, given the position that Volkswagen are in—they are the largest car manufacturer in the world—the amount of cars involved and potentially the amount of money involved, the way they responded has been understandable, if not hugely helpful.

Q52 Robert Flello: Mr Bizley, understandably slow and not particularly helpful. Do you have a view on that as well?

David Bizley: I am inclined to agree with my colleague. Clearly it was less fast than any consumer would have liked, because the moment you know there is a problem you want to know the extent of the problem and what the solution is. You want to know whether you are affected, and so on. It did take some time, but I can understand that. VW is a very large company; from a technical point of view it tends to do pretty much all of its development in Germany, and therefore the local UK organisation is probably trying to find out information from its German parent as much as the consumer is. That is just the nature of big companies and VW are no different from many others. The consequence is that there has been much more delay and perhaps the information has not been as slick as it would have been if it was a small and local UK company.

Q53 Robert Flello: But to turn that on its head, if I may, the biggest car manufacturer is more concerned about the bottom line than its customers, by the sound of it, surely.

Jim Holder: It is probably a bit more complex than that. Even on finding the fix, there are numerous fixes that need enacting. The complexity of the solutions should not be underestimated. It is not one piece of software code. If you consider the multiple variations on a car—whether it has an automatic or manual gearbox, the type of fuel and so on—each variation of each car needs an alternative solution. It is very hard. From an industry point of view, Volkswagen is notorious for having very thin margins on its cars because it chases technical excellence. I appreciate the irony of that in this situation, but it

is renowned in the industry for having tiny margins against huge sales. That is because the management has traditionally chased technical excellence.

Q54 Will Quince: Mr Ffello talked about confusion. I would like to talk about confidence. How do you feel the Volkswagen emissions scandal has undermined consumer trust in vehicle testing?

Jim Holder: In testing as a whole?

Will Quince: Yes.

Jim Holder: It is an industry-wide problem. The industry knew it had the problem before this scandal and was looking for changes with the new regulations that are coming. I do not think there is anyone who owns a car who, when they went to fill it up, did not understand that in all likelihood the figure claimed was not the figure they were going to get. I would say that the scandal is a catalyst and has not necessarily brought anything to light.

Q55 Will Quince: Can I confirm that you are saying that you do not think that car owners believe those figures to be true?

Jim Holder: That is correct. Three years ago, *What Car?* launched something we call True MPG, because it was well known that the official mpg tests were not achievable in the real world. They are lab tests under laboratory conditions. You can get them in the real world in very set circumstances, but to achieve them regularly in your daily usage is nigh-on impossible and I do not think anyone is surprised to discover that.

Graham Hope: That is not entirely our experience at *Auto Express*. We have two consumer pages that we publish every week—"Watchdog"—which deal with complaints from readers regarding things that have gone wrong with their car. The most persistent complaint we get by some way is from people who do not achieve the mpg they thought they were going to achieve with their car. If you consider the amount of cars on the road—there are 37 million—that is an awful lot of drivers, and some of them are not engaged with the automotive industry. Quite clearly there are still drivers out there who see the published figures in the marketing or advertising literature and think they may be able to achieve them. Certainly that is our experience, so I differ slightly from my colleague's viewpoint in that respect. What you have to remember is that we both work for enthusiast titles, so we are engaged generally with an audience that is more petrol head than your average driver. Among people who run a car out of necessity rather than desire, there is probably more of a degree of confusion in terms of what is and is not achievable with regard to mpg.

Q56 Will Quince: You are saying that either the public are confused by these figures or that they do not believe them. It is one of the two. Would you agree with me that they are pretty pointless as they are at the moment?

Graham Hope: Certainly, in my experience, prior to the story breaking there was a fair degree of confusion and scepticism. It introduced an element of cynicism, because obviously we have a very prominent car manufacturer that held its hands up and admitted to cheating. Now people are looking at all the figures associated with the car and

questioning whether they are to be trusted or not. Unfortunately for other manufacturers, that has manifested itself across the whole industry and not just Volkswagen. There is more of an element of mistrust now than there was prior to September.

Jim Holder: We actually asked some questions about this in the survey that I referred to earlier; 57% of the respondents told us that they no longer had any confidence in the environmental emissions claims of manufacturers. The majority told us that they expected that, in time, other manufacturers would be found to have been cheating, even though of course there is no evidence that other manufacturers have been using defeat devices.

When it comes to fuel economy, a vocal third, roughly, of the people we surveyed have a concern. The other 63% or 64% either are quite content or simply do not bother to measure it in terms of fuel economy. Confidence has certainly been lost. I am not sure that the average motorist has the level of concern about fuel economy that perhaps was suggested earlier.

Graham Hope: The latest data from the survey I mentioned previously is not published yet; this is from our 2016 survey. We asked owners how important fuel economy was to them, and 51.3% said it was very important. When asked what was the one thing they would improve, 14.4% said fuel economy. That was the single most important element that they would like to see improved in their cars; so one in 10 would like better fuel economy than they already achieve, according to our latest data.

Q57 Iain Stewart: In a previous evidence session it was suggested to us that part of the problem is the European-wide certification system, in that, if one country gives approval, that certification is valid in all EU member states. The suggestion or allegation was that some countries have a more relaxed process for granting certification. Luxembourg was cited as a particular case, with a surprising number of certifications given the size of the country and the absence of a major car industry. Is that situation well known among your readership and the people you converse with, or do you find it a surprising comment?

Jim Holder: I would not expect it to be known by our readership. It is too much of a detailed point and I would be very surprised if they knew it. I have heard rumours of people picking particular test stations, but I have absolutely no evidence to suggest that that is the case. You ask around as a journalist and you try to find some evidence; I have yet to find any.

Q58 Iain Stewart: Have either of the other witnesses heard anything?

Graham Hope: I can only agree with that 100%. I do not think it would be common knowledge among the car owners who use our websites and read our magazines. Whether one country is more lax, if you like, on testing than another I simply do not know.

David Bizley: I would agree with that. There are certainly examples, such as the Euro NCAP safety programme, where testing is carried out in a number of countries but it is all regarded as equally valid. If there is a problem, it is certainly not the principle but its application on this particular testing issue that needs tightening up.

Q59 Iain Stewart: But you have no evidence.

David Bizley: I have no evidence to support it one way or the other.

Q60 Huw Merriman: Mr Holder, do you find it acceptable, given the importance of clean air and the environment, that vehicle manufacturers can effectively create the testing regime themselves and then report on it? Are you surprised that there has not been a level of regulation from Governments?

Jim Holder: If that statement is true, I am surprised. My understanding is that there is a degree of regulation from independent bodies and Government-appointed bodies. When you look at it, it certainly seems that the test process is stacked towards the manufacturer—using their facilities, their drivers and so on—but it seems that there is some regulation and it has been in place for many years, even decades. I am not saying that the situation does not need changing, but I am not sure it is as black and white as perhaps you have described it.

Q61 Huw Merriman: Let me give an example. The Financial Conduct Authority regulates banks. Their staff will actually go into banks, effectively take everything over and run everything themselves. Would it be fair to say that, here, that situation just could not occur because there is so much reliance on the manufacturers that anyone of any independence would not be able to create the tests?

Jim Holder: I am not sure I have the answer to that. There is some independence of people coming into the tests and being part of that process at the moment. That is my understanding. You could look at the situation in the United States, where there is more spot checking and the tests are conducted in a very different way, as an example of a different way that it could be done. Certainly there are regulations at the moment that appear to have some independence in them, and there are new regulations on the way where that seems to be increased.

Q62 Huw Merriman: Could I ask the same question of Mr Bizley?

David Bizley: Yes, although I am afraid you will not get a very different answer. There certainly is a degree of independence. The primary flaw is in the fact that the test being used is long past its sell-by date. It was designed for a very simplistic form of drive cycle for cars that were on the road 20 years ago. The most important first step is that we get a new test that is much more representative of real-world driving and of today's vehicles. We will go some way towards that in 2017 with the harmonised world test cycle for light vehicles. There will still be discrepancies between that and true real-world driving, but the discrepancies should be less. We need to keep improving those tests until the gap is zero.

Q63 Huw Merriman: If there is some level of independence in the system, would you say that it must have failed in this instance—that it has failed?

David Bizley: No, I do not think necessarily it has. The Volkswagen vehicles, so far as the testers were concerned, complied with the test. There is no way they could know that there was software inside the engine management system that was detecting the test conditions and essentially adopting a completely different engine management map from what would be in use in normal running.

Q64 Huw Merriman: But, Mr Bizley, forgive me. Surely that is a failing, because, if it is truly independent and truly has rigour, then as part of that process anybody would have the ability to find out that the software can cheat the system.

David Bizley: It took the US authorities something not far short of a year, crawling through the software, to understand the discrepancy between the VW test results and what the VW emissions appeared to be in the real world. Even a powerfully motivated group of people took a long time to find a few lines of code among many millions of lines of code within a software system. That is one of the challenges.

Q65 Chair: But Mr Holder told us a little earlier that it was generally known, and well known within the industry and among consumers, that the testing was not adequate. You were talking about fuel usage at that point, but it must refer to testing generally. If all of this was so well known, why wasn't something done about it sooner? Why didn't the motoring organisations and the motoring press take this up before and try to get something changed?

David Bizley: There are two issues. One is whether the general testing regime was fit for purpose. There has been a working group for a number of years on new standards to put a better testing regime in place. The second issue is that VW actually put in a defeat device that was not detected for a long time. You have to separate those two issues. Certainly I do not think the motoring press or the RAC had any inkling that VW were using any kind of defeat device. Our focus has very much been on encouraging the development of a new test cycle, which has been happening for some time.

Chair: We will be coming on to some questions about the new proposals. There are one or two other issues first.

Q66 Stewart Malcolm McDonald: In terms of the CO₂ data that VW had, they thought that 800,000 vehicles were affected and then all of a sudden it was 36,000. Is it any wonder that consumers are so confused and untrusting when the figures are so badly out from the initial estimate? It seemed to change with almost no real explanation as to why that was. Do you have any comments on that?

Jim Holder: From my perspective, VW was caught in the glare of publicity; it could not afford another scandal. By the point when the second scandal came round—the CO₂—they probably had no choice but to admit the worst-case scenario as early as possible lest they announced something too low and it turned out to be worse than they had predicted. It is not a simple test; it is a time-consuming and difficult test to conduct. I do not think we should be too surprised that the figures changed. It is a dramatic fall, but—

Q67 Stewart Malcolm McDonald: Do you think it was basically a PR exercise?

Jim Holder: To a degree, and if I were in their situation I think I would have admitted the worst-case scenario rather than be carried through the press again for trying to cover something up.

David Bizley: The vast majority of people in VW were as surprised as the rest of us when this occurred. There was certainly no contingency plan in place, because it is something that the vast majority of people in Volkswagen would have said could never happen in a company of that size, reputation and quality. Effectively, they were forced to develop their response on the fly, and what you have seen was a degree of confusion internally and

changing numbers as a result. It is not desirable, but obviously I can understand how it happened.

Q68 Stewart Malcolm McDonald: Don't you think that the scale between the estimate and the final result seems so enormous that it was really dishonest to suggest it was going to be 800,000?

David Bizley: I cannot imagine that anybody would have suggested a number without a fair reason for doing so. It might be incorrect but I am sure it was not—

Q69 Stewart Malcolm McDonald: But they would have put that reason in the public domain, surely, to clear up any confusion that might exist.

David Bizley: Possibly.

Q70 Stewart Malcolm McDonald: But that has not happened.

David Bizley: No.

Q71 Stewart Malcolm McDonald: Emissions from nitrogen oxide across Europe are responsible for about 500 deaths every year, according to the World Health Organisation. Obviously Volkswagen have broken different rules in the United States, which is why there is legal action being taken against them. In this country, the Secretary of State has power to take action against them. The Competition and Markets Authority and the Serious Fraud Office are already considering taking action against them. Do you expect anyone to have to answer for this in court in the UK, or anywhere in Europe? It has never happened in Europe.

David Bizley: You would have to ask a lawyer that question. You talked about the number of deaths. I believe the DEFRA figures suggest that in our city centres around 35% of nitrogen dioxide is generated from diesel cars. In London it is closer to 25%. The majority of nitrogen dioxide comes from buses, commercial vehicles and taxis. If you are near Paddington station, the majority of it comes from trains. I imagine it would be quite difficult to tie down a direct health effect for a particular group of vehicles, when actually there are a lot of other contributors to that particular problem, which is one we all have to address.

Q72 Stewart Malcolm McDonald: Do either of the other two witnesses expect anyone from Volkswagen to have to answer for this in a court anywhere in Europe?

Jim Holder: I am not clear at the moment if Volkswagen have even broken any rules as regards NOx emissions in Europe.

Q73 Stewart Malcolm McDonald: It is not just NOx emissions. It is the fact that they installed cheat devices to get around regulations in this country and in other countries. There has never been a car manufacturer who has successfully been taken to court in relation to cheating their environmental responsibilities. I think France tried to do it with Mercedes once but failed. It has never happened in Europe. To go back to the original question from the Chair, we are really relaxed in Europe about this sort of stuff, aren't we?

Chair: Is there any expectation that any action will follow on this?

Graham Hope: I have not had any sense from Volkswagen owners who are readers of our websites or magazines that there is a huge appetite for Volkswagen to be dragged through the courts. That is not a sentiment that I have encountered.

Q74 Chair: How much is the consumer influenced by emissions considerations when purchasing a car?

Jim Holder: That is a key question. We have already talked about surveys. We have done our own survey at *What Car?* The fuel economy of a car is usually first or second when you ask a consumer why they want to buy a particular car. The thing you have to separate there is that they are interested in that because of how it hits their pocket, not because of the pollutants within or the environmental benefit. That is the case for the vast majority of people. Certainly from my perspective, putting things on the front cover of a magazine, I would not talk about the environmental benefits; I would talk about the pounds and pence benefits. That is a very clear message we get from our websites and magazines.

David Bizley: I certainly agree that fuel economy and the cost of running a car is the No. 1 concern. Interestingly, even among purchasers of ultra-low carbon vehicles, for 47% of those the primary reason is to get the benefit of lower running costs. Only 15% of those people are buying the cars for their environmental performance.

Q75 Chair: Is this on surveys you have done?

David Bizley: Yes. In our annual survey for our annual report on motoring we ask motorists to rank a whole series of concerns, not specifically about environmental issues. This year, the environmental performance of their car came out 18th in the priority list, below the state of local roads, the cost of fuel and a whole host of road safety issues.

Q76 Chair: In terms of purchasing a car, which is what I am interested in, how does it rank as a factor in selecting a model?

David Bizley: If you ask people about their primary considerations, 74% say that fuel economy is a primary consideration and only about 48% say that environmental performance is a major consideration.

Graham Hope: That mirrors the surveys we have done as well. For many drivers, we have found that, if the car is green, eco-friendly and has a low environmental impact, that would be a pleasing bonus but it is not a motivating factor for most people in terms of a purchase decision. As Jim says, it is all about the pounds really.

Q77 Martin Vickers: On those particular points, yes, I would agree that the green aspect of purchase is a bonus with regard to most car owners. Of course, miles per gallon is crucial to the running costs of the vehicle. Why should a car owner believe the mileage stats following all this controversy?

Graham Hope: Well, they don't and with good reason. To give you an idea of the kind of test we do in our titles, last year we tested 235 cars. We do a minimum of 400 miles per car on each test. Double-checking the figures, we found at the end of the year when we did our calculations that they were 28% lower than the claimed fuel economy figures. That is

probably roughly where it is for the general public across cars in the UK, so people generally don't believe them. What we clearly need for the purpose of this discussion, which is to address type approval, is some kind of system whereby we get closer to being 28.7% higher. That has to be a priority.

Q78 Martin Vickers: As you rightly say, people shrug their shoulders and do not entirely believe the figures that are published, and it seems to me from your evidence and the evidence we have previously heard that all within the industry cast doubt on the various statistics that are put forward. Yet quite clearly we have got to a point where, because of this exposure, something will be done. Why wasn't something done before? The motoring press, for example, and motoring organisations surely look at it from the interests of the consumer. It would have been helpful for these things to be exposed much earlier.

Jim Holder: You are right, but we have been exposing it. We have been running our True MPG testing for over three and a half years and talking about this subject for a long time. As Graham says, we have our own evidence about how far the figures are from the official. The industry has been trying to reform itself; it has been trying to reform the way tests are done. There have been a lot of fights between the legislators and the car industry itself, and the car industry stands accused very publicly of trying to delay some of these changes, but there has been a process and it has been ongoing for many years. In the background, long before this scandal, there was change coming and that is why the change is quite imminent now.

Graham Hope: There is recognition among car manufacturers publicly at last that this has to change. PSA have recently announced that they are going to publish their own real-world emissions figures in conjunction with Transport & Environment. Vauxhall are going to publish real-world figures based on the WLTP test before it becomes mandatory. Clearly that is a reflection of a changing landscape since this story broke. The general public is generally more cynical in terms of the published figures. The manufacturers seem to be moving with greater urgency than might previously have been the case.

David Bizley: I would support that. Action was taking place, but very slowly. What this will do is accelerate the pace of change. It is very difficult for any one organisation or magazine to affect the rate of progress of an international process that involves legislators and an entire industry, but this scandal gives the opportunity to do just that because it gets concerted effort on the part of Governments and consumer organisations around Europe.

Q79 Chair: Mr Holder, we were told by Emissions Analytics that *What Car?* is launching a consumer rating scheme to show different emissions. Is that right?

Jim Holder: We have True MPG, which has been around for three and a half years and which we run with Emissions Analytics. That is, essentially, real-world testing of fuel economy figures. There is other data around NOx, but we are not planning to use that data, because we do not believe there is consumer interest in NOx figures at present.

Q80 Chair: So you are not going to be doing anything more on that.

Jim Holder: No.

Q81 Chair: And that is the reason.

Jim Holder: Yes.

Q82 Graham Stringer: After all the debate around this, and the new regulations, do you think there is a future for diesel cars in this country?

Jim Holder: Personally I do. Diesel has benefits, and someone has to decide what the common goals are. It is clear that having diesel in cities is not a good thing for public health, but it is clear that on long journeys, on open roads at high speeds, diesel has many emissions benefits as well as downsides. People need to play that conundrum. If you look at the sales figures, diesel is still very strong. It accounts for almost half the market, or just under. There is a shift, but that shift is going to take a long time. To hit the targets that have been set by European law for 2020, diesel has to play a major part.

Q83 Graham Stringer: Can you tell the Committee what the benefits are of diesel in terms of emissions on long journeys?

Jim Holder: Chiefly they are around CO₂; you burn less fuel and you emit less CO₂.

Q84 Graham Stringer: In terms of the way engines are designed and built to hit the CO₂ and NO_x regulations, is there a trade-off between those two emission targets—if you allow more NO_x you get less CO₂, and with more CO₂ you get less NO_x?

Jim Holder: You have a technical expert here. My understanding is that there is a triangulation between various—

David Bizley: I would not regard myself as a technical expert on those issues. If I can just complete the answer to the previous question, diesel engines have the characteristic that they can generate very high torque at low revs, which means that if you are trying to put a load on an engine—accelerate away from a standing start with a heavy load; if you are stuck in the mud and are trying to pull out—with a diesel engine you can do that at low revs. With a petrol engine, you would have to rev the engine a lot more, so you would create more emissions, a lot more CO₂ and a lot more noise pollution. Therefore, for vehicles that are used in those sorts of load-bearing situations, diesel is still the best option. Electric powertrains can match that, but obviously electric battery-powered vehicles are not appropriate to all applications; at least the current generation are not.

For any combination of technology, my understanding is much the same as that of my colleague: there is a trade-off between driveability, fuel economy and emissions. If you think of the engine control as a map, with the speed of the engine on one dimension and the torque on the other, there are certain points on that map that are covered by the standard type approval tests. In those situations, the engine parameters are set so that emissions are prioritised and the vehicle passes the test. In other parts of the map that are not covered by the test, the manufacturer will choose to prioritise fuel economy or driveability so that they end up with a vehicle that people want to buy and that is economic. That is why real-world emissions based on the current test cycle are significantly higher; there are many driving conditions in which fuel economy or driveability is prioritised above emissions. By putting in a more comprehensive and realistic test cycle, you reduce the areas of the map that are not covered by the test but you will still get some where other parameters are prioritised. That is

just a characteristic. If you introduce a new piece of technology, you essentially up the game to another level but you are still into an optimisation mode.

Q85 Graham Stringer: Mr McDonald's earlier question was about how many people's health or lives were affected by NO_x emissions. Mr Holder said that consumers and motorists were not very interested in that, but as Members of Parliament who would like our constituents not to die we probably are. If you lower the standards for carbon dioxide so that you have more carbon dioxide coming out, will you automatically lower the amount of NO_x emissions?

David Bizley: In a number of situations it would be possible to put in a different optimisation that would prioritise emissions over fuel economy—CO₂. Of course, in that situation we would, as a nation, find it more difficult to meet our CO₂ reduction targets.

Q86 Graham Stringer: That is the point. CO₂, whatever it is doing to the world's atmosphere, is not poisonous. It is the exact opposite; it is vital for life, whereas nitrogen dioxide and other nitrogen oxides are poisonous. I am just trying to get to the balance there.

David Bizley: Yes. The difficulty we all face is that, over the last five years, an awful lot of people have bought small, fuel-efficient diesel vehicles, believing that by picking a low CO₂ vehicle they were doing the right thing for the environment. The VED system encouraged people to buy vehicles with low CO₂. We have a lot of diesels on the road and now those people are being told that they are—

Graham Stringer: Killing people.

David Bizley: —generating harmful substances. It is a real challenge for us as a nation as to how we deal with that. We clearly need low emission zones, and the air quality proposals from DEFRA propose the establishment of low emission zones that will cover the areas where the problem is at its greatest. We need to make sure a common-sense approach is applied. The ultra-low emission zone proposals in London seem to make a lot of sense, because they target the most polluting vehicles and they give people at least some time to adjust to that situation and change their vehicles if that is appropriate. But there are, for example, some local authorities that are introducing what feels like quite punitive action on all diesel vehicles, no matter how much they are driven or how much they are contributing to the NO_x problem.

Q87 Chair: I want to go back and look at consumer information and how clear it is. In the transition period between the current testing regime and the new testing regime, cars labelled as Euro 6 will be tested against different standards. Isn't that going to cause confusion for the consumer?

Jim Holder: Undoubtedly, yes. My view is that we are on the brink of a very difficult situation. We have individual manufacturers looking to publish their own real-world figures and it is not necessarily going to be a consistent way of testing. For all the faults of the current system, it is consistent. During the transition period we are in danger of confusing the consumer to a degree where nobody knows what the truth is.

Q88 Chair: Can you say a bit more about what lies behind that? Are individual manufacturers going to be producing their own figures independently of the official testing centres?

Graham Hope: As I mentioned previously, PSA are going to produce their own figures. As the regulations change, we are going to have figures produced under the new system. Cars will be on sale at the same time with figures that were produced under the old system. You will thereby have a situation where there is potential for three different sets of figures: from the manufacturers, under the old regulations and under the new regulations. Clearly there is huge potential to confuse consumers in that respect. To be honest, I do not know what the answer is; that is for a greater mind than mine to come up with. If the question is whether there is potential for confusion, yes, there is massive potential for confusion.

In terms of labelling in general, once the new regulations are in place I invite Committee members to have a look at how cars are labelled in America. There is a much more transparent labelling system over there, and the average mpg is displayed very prominently. There is an average fuel cost and also a figure displayed that shows how much more or less you would spend on fuel over five years compared with the average car. It is a much simpler labelling system than we have here. Anything that can reduce confusion for the consumer is worth looking at.

David Bizley: If we think of where we would like to get to, the Euro NCAP system for rating the safety of new cars is a really good example, in that it is a programme that has both private and public sector support. It is entirely independent of the motor industry and it rates the safety of vehicles—all of which pass the minimum standard, the minimum legislation—simply in one to five stars. Over time, the Euro NCAP programme has regularly raised the bar. A vehicle that got five stars for safety five years ago would not get five stars now, because there is new technology. What that has done is encourage manufacturers to go beyond the minimum legal requirements in terms of safety features; it becomes an area of competition between them. Because it is pan-European and completely independent, and the test standards are consistent, it has consumer confidence. Frankly, that is where we ought to be trying to get to with emissions.

Q89 Robert Ffello: But, Mr Bizley, surely if one of those manufacturers was then cheating by putting lines into many tens of thousands of lines of code in a programme, the NCAP-type people would not be able to spot that it was there. I agree with you that NCAP is a good standard, but the reality is that, if somebody wants to cheat by hiding something in the code, it would be very hard for an NCAP-type organisation to find out. On the back of that, similarly with the new standards—the real-world testing—will there not be a not dissimilar problem in the future, in that, when a manufacturer comes to do the real-world testing, they will look for a country where the environmental conditions are much better for the performance of the engine, a time of year that really suits that engine and jump through lots of hoops to get the optimum test centre for their engine to try to get the best results in a real-world environment?

David Bizley: I think you will find that the new harmonised test prescribes a number of ambient conditions under which the test should be carried out. Therefore, in principle, if you carry out the test in the Arctic or at the equator, the results should be the same, because the atmospheric conditions under which it is carried out are prescribed in the test procedure.

Q90 Chair: What technologies are there for reducing NOx emissions from diesel vehicles? How will they be progressed?

David Bizley: The technology that is currently being introduced in a number of vehicles is called selective catalytic reduction. Essentially, it involves injection of a solution of urea into the exhaust gases between the outlet of the engine and the input to a catalytic converter. It converts the nitrogen dioxide into nitrogen and water, both of which are harmless. It involves the owner having to top up the tank of urea from time to time; it uses about a litre every 400 miles or so. There is typically a 10, 15 or 20-litre tank, so perhaps twice or three times a year the average motorist will have to top up the tank. The urea solution is typically sold under the brand name AdBlue. You will start to see that more and more in forecourts. It certainly takes you one level forward. That is the sort of technology that is being introduced now by manufacturers to get to the next level of emissions. Undoubtedly there will be other technologies beyond that.

Q91 Robert Ffello: But that is not new. The truck industry has been using it—

David Bizley: It is technology that has been used in the truck industry and is now being brought into cars. It is not new technology, but it is new for motor cars.

Q92 Robert Ffello: Except that certain makes—I think Citroën is one—have had the AdBlue style tank for some time. You have to wonder if there are going to be enough pigs around to provide all this solution. The real underlying question is how much more technology can be brought in. There must be a finite point at which you cannot make diesels any less polluting. Do you agree? Is the finite point going to be so expensive to have that engine that nobody will bother anyway? When the diesel engine was originally developed, if I have understood it correctly, it was not supposed to run on diesel fuel but on a vegetable oil-type fuel or something along those lines. Sorry. That is a bit of a long-winded question and there were several elements to it. I am just interested in your comments.

Graham Hope: We have spoken to a company based in Denmark that is involved in the manufacture of the technology ASDS, which is an ammonia storage delivery system—ammonia cartridges. I believe this technology is fed to buses in Denmark. They tell us that it can reduce NOx emissions by 95%. I have no first-hand experience of it. I have not seen it in action. They presented a fairly convincing case to us when we ran the story. That might be one solution worth looking at. As I say, I have no first-hand experience of whether it works or not, but it seems to be in use successfully in certain vehicles in Denmark.

Jim Holder: You have hit the nail on the head. It is an economic equation. There is more that could be done. It is whether consumers will pay the price that will be asked to cover the cost of the technology. Obviously the cost of the technology can come down, but if you listen to the manufacturers it was hard to hit the economic targets for Euro 6. We are at a point now where that is the case.

David Bizley: It is certainly getting more difficult. The industry has a reasonable track record of finding ways round these problems. It would take someone who understood the technology a lot better, certainly better than me, in terms of what is in the pipeline to say

at what cost the next step will come. Clearly there will be a cost and there will therefore be a point at which other options start to get more attractive.

Q93 Chair: From a consumer point of view, has any good come out of the current episode—the current scandals—or could any good come out of it?

David Bizley: Undoubtedly, for the reasons we were talking about earlier. It shone a light on a particular issue that was known about but on which action was taking place too slowly. It is accelerating progress. It is also likely to take us on a path that will give us much more realistic real-world measures of both fuel economy and emissions. That can only be of benefit to consumers.

Graham Hope: The very fact that we are having this discussion is a good thing. It is a discussion that might not have come about had this story not developed. Both Jim and I work for market-leading publications. The fact that we are here and will go back and report to our readers about what is being discussed will be an educational process for them. At the end of the process, our readers and car owners will be more informed as to what is actually going on.

Jim Holder: I broadly agree. One point of concern and a point to consider is not using the scandal as an excuse to beat an industry that has done a pretty good job of improving itself. It has improved itself in the eyes of legislation that needs updating, but the industry generally reacts well to change and does a good job. There has to be a note of caution that the way forward is practical.

Graham Hope: I would second that. To go back to a question that was asked earlier about whether there is a future for diesel, the one thing we did not acknowledge is that manufacturers have spent inordinate amounts of money and have worked extremely hard to make diesel a much cleaner offering than it was in the past. Obviously we have had this fairly substantial blip, but it would not be proper for us to sit here and not acknowledge the hard work the manufacturers have put in to make diesel a cleaner solution.

Chair: On that fairly positive note at the end of what is a scandal—but we will consider that further—thank you very much.