



Environmental Audit Committee

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

Tuesday 27 October 2015

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Members present: Huw Irranca-Davies (Chair); Peter Aldous; Mary Creagh; Geraint Davies; Zac Goldsmith; Margaret Greenwood; Caroline Lucas; John Mc Nally; Rebecca Pow

Questions 99-184

Witnesses: **Mr Robert Goodwill MP** Parliamentary Under-Secretary of State, Department for Transport, **Rory Stewart MP**, Parliamentary Under-Secretary of State, Department for Environment, Food and Rural Affairs, **Cheryl Case**, Head of Atmosphere and Industrial Emissions, Department for Environment, Food and Rural Affairs, and **Michael Hurwitz**, Director of the Energy, Technology and International Directorate, Department for Transport, gave evidence.

Q99 Chair: Good morning, everybody, and welcome to the second of our public hearings on the Committee's inquiry into diesel emissions and air quality. My thanks to our witnesses here today. We have Robert Goodwill MP, Parliamentary Under-Secretary of State for Transport, and Rory Stewart MP, Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs, along with colleagues from the Departments, Michael Hurwitz and Cheryl Case.

As you know, last week we had in front of us Paul Willis, the Managing Director of Volkswagen UK, and Mike Hawes, the CEO of the Society of Motor Manufacturers and Traders. It was a very useful evidence session. We had some answers; I don't think we have had them all yet, and we are aware that there are inquiries going on specifically into VW both here and overseas. I think this is a very good opportunity, particularly with both Ministers in front of us, to catch up on what you know, what we have learnt and what is currently going on.

From our Committee's point of view, it might well be worth reiterating to you, in brief, what we said to our two witnesses last week. The Committee covers the gambit of sustainable development, including the aspects of environmental wellbeing but also health and wellbeing. So we are very concerned not only in the technical aspects of what has been going on and the cheating and deception in one area but also in the general issue of diesel and air pollution and the impact that we know it is having. Our precursor as the Environment Committee under its previous chairmanship did three reports within five

years into air quality. Some of the members of that Committee are here still. It highlighted the fact that while there is some disagreement over the exact numbers, it is certainly pretty much accepted now, a consensus, that maybe between 25,000 and 30,000 avoidable deaths per year are caused by air pollution. Clearly VW has set alarm bells ringing but so has the discrepancy between real world testing of cars generally and lab tests. We want to try to flush that out a little bit today. Robert, you would like to say a few words.

Mr Goodwill: Just a short comment to say how much we welcome this investigation and the report you are going to produce. While the attention of the nation may have been diverted on to other things this week, I think it is very important that we do find out the answers to these questions and we look forward to reading the report of this Committee as part of that process. Just for your diversion, you may be interested to know that I have before me the Locomotive Act 1861 that makes it clear that, "Every locomotive propelled by steam or any other than animal power to be used on any turnpike or public highway shall be constructed on the principle of consuming its own smoke". So there is nothing new in this world. Then I think the industry got to work and it was later amended to make it less onerous, but it just shows there is nothing new under the sun.

Chair: Very good. Thank you for that. John, would you like to lead us off?

Q100 John Mc Nally: Welcome and thank you for coming along this morning. Just recently the Transport Secretary, Patrick McLoughlin, stated that the needs of consumers must be at the forefront of action to restore public confidence in emission testing. I have two or three questions here for you. Has Volkswagen manipulated the testing regime for vehicle emissions in the UK and does this extend to fuel efficiency tests? What timetable has the Government set out for their programme for retesting diesel cars in the UK? When can consumers expect initial findings and conclusions? Will the Government assure that consumers have easy access to redress? Over 69,000 supporters have signed Which?'s Come Clean on Fuel Claims campaign, which is extremely important as they represent a valuable part of the United Kingdom. Lastly, Which? asked car makers in the UK to clarify whether their own emissions and fuel economy tests have also been manipulated and all but one car manufacturer, Subaru, responded, denying their vehicle testing methods were misleading customers, so we are currently seeking clarification. Can you respond to the questions that Which? have asked and I am asking on their behalf and if you agree with the statements?

Mr Goodwill: Shall I kick off? The Volkswagen Audi group have admitted that they have employed defeat devices to manipulate the nitrogen oxide emissions. Following the revelations that came to light in the US, we have written to every manufacturer in the UK and received assurances from the ones who responded, which is the vast majority, that they have not deployed these defeat devices. It is important that we keep the two issues of CO₂ and NO_x separate. They are two entirely different matters and there has been a lot of confusion in the press between the two.

On CO₂ we have always understood that the test cycle, the NEDC, the New European Driving Cycle, that is currently used does not give an accurate representation of driving on the real road. In a debate in the House in answer to a question from Jim Fitzpatrick, the Member for Poplar and Limehouse, I made it clear that we were aware of those discrepancies between the real world driving experience and the test cycle. We are

working closely to come up with a better test, the World Light-Duty Test Cycle, the WLTC, which we believe will be a more accurate representation of real world driving. We believe that the NEDC test is about 40% out of kilter on CO₂ compared with real driving and the new test, the World Light-Duty Test Cycle, will be better, about 20% out. I have to say that I have been conducting my own experiments on CO₂ driving my own car and if I drive it very carefully indeed on a trip to Oldham I can achieve the standards, the fuel consumption that the test cycle would indicate. However, under normal driving conditions it is round about 20% out. We have made it clear that we have understood the discrepancy. It has been put to me it is a bit like when you revise for an exam, you do a test; as long as you don't cheat, you can do your best to try to perform.

On the issue of NO_x, it is an entirely different situation. The Euro 6 standard that should be 0.08 grams per kilometre for diesel is being broken by a factor of five. That is unacceptable and we are determined, in answer to your second point, sir, to do whatever we can, working with our colleagues in countries like Germany, to test cars on the road. It has only been quite recently that this equipment, the PEMS, the Portable Emissions Measurement System, has been available. This is a system that can fit in the boot of a car and test the car emissions for NO_x and carbon monoxide as it is travelling. We are using that equipment now, which was not previously available.

Q101 Caroline Lucas: You were talking about the discrepancy between the NEDC and the WLTP as testing processes. Can you explain why people from the Department for Transport were writing to the European Commission deliberately to try to water down the impact of the new test in order to carry over the loopholes? At the moment you are describing it very objectively, yes, we know that there is this test and it is going to be improved into this newer test but as *The Guardian* reported—and we have a copy of the letter from the Department for Transport circulated in front of us—DfT officials have been lobbying to make sure that the new test carries over some of the loopholes from the old test. Why would that be the case?

Michael Hurwitz: Are you referring to the letter from Dr Bob Moran?

Caroline Lucas: I am.

Michael Hurwitz: That was not about the new test. That was about modelling. As we transfer from the old test to the new test, the question was asked: how will we know how a car that was authorised and tested on the old procedure would perform on the new procedure? To do that, what has been proposed by the Commission is to have a modelling tool devised that would allow us to understand the difference. That letter was lobbying to have the modelling take into account the optimisation strategies that are used on the old test. So, for example—

Q102 Caroline Lucas: But the net effect of it is precisely to reduce the test burden. That is the language that Mr Moran uses in his letter, “It will facilitate the transition to the WLTP by reducing the test burden placed on manufacturers”.

Michael Hurwitz: That is the modelling burden. That is specifically to do with the modelling techniques that were being used, and in fact the UK and many others have been deliberately trying to remove the opportunity for having those optimisation strategies. This is about trying to have an accurate model of the existing practices in the modelling. It does

not refer to the nature of the new test. That is specifically trying, for example, to remove the opportunities for over-inflating tyres or using low resistance tyres.

Q103 Caroline Lucas: It is deliberately trying to do things like allowing the battery to be fully charged at the point of testing.

Michael Hurwitz: No, that is modelling. That is not in the test. It is in the model for how the old test would perform.

Q104 Caroline Lucas: You are making this distinction between the modelling and the tests but the two are related.

Michael Hurwitz: What we are trying to do is there will be a—this is not about the actual test. This is about specifically the modelling. We would need to have an accurate representation of how old cars actually perform, and this is about trying to make sure that the modelling takes into account what really happens, not just what happens in the laboratory.

Q105 Caroline Lucas: Would you contest very strongly all of the press coverage that has said that as a net result of this lobbying and similar lobbying from France and Germany, loopholes will be carried over that would increase real world CO₂ emissions by 14% above those claimed?

Michael Hurwitz: I don't have the detail on that specifically and I am happy to write back on that.

Caroline Lucas: It would be helpful if you would.

Michael Hurwitz: On the specific challenge there, that was a letter that was about modelling details of the new test. It was about modelling only.

Q106 Caroline Lucas: We can talk about the difference between modelling and the testing but if the impact is a net increase of however much CO₂ extra on the roads, the point still remains that the DfT has been lobbying to allow the impact to be more than it would otherwise have been.

Michael Hurwitz: The DfT has been one of the countries pushing hardest for having a more accurate test since 2011.

Q107 Chair: We might return to this in some detail. There is this issue of your role in helping the Minister and the Department alongside deliver the overreaching Government imperatives to improve air quality in a number of ways, and to tackle climate change by reducing carbon emissions and so on, but also particulates, and at the same time having to represent the industry as well. But we will return to that in a moment. John, are you content that you have had the answers to your questions?

Mr Goodwill: John did raise the issue about access to redress. Some of the original coverage of the Volkswagen scare indicated that the cars were performing less well in terms of fuel consumption. All the evidence that I have had is that using these defeat devices would improve the fuel consumption because the NO_x mitigation devices actually

result in more fuel being used. This is the experience we have had in the heavy goods sector where fuel consumption has reduced slightly because of the effective systems and in terms of heavy goods vehicles they are working very well. The selective catalytic reduction systems on trucks are working very well indeed and as expected.

In terms of people making claims about fuel performance, that is not something we expect would be the case but if a person has to give up their car for a day while it goes through the recall, if it took more than a day then certainly I believe that any manufacturer would feel that they had an obligation to ensure their customers were not out of pocket in that particular situation.

Q108 John Mc Nally: That also raises other aspects whereby people maybe are going to have new parts fitted to the car. I went to speak to some of my own motor traders association and they have been quite inundated with people asking if they are going to have new parts fitted to their cars. Will these new parts be guaranteed over and above the life of the car that they have at the moment? It is taking it back to the very beginning about the problem that the consumer has here. It is extremely unclear where they are going with this and I know that one lawyer in London has over 5,000 cases at this moment and I am sure there are plenty more like him quite keen.

Mr Goodwill: I am not going to speculate on what legal action may be taken by customers. If a motor manufacturer has been shown to deploy defeat devices then that is illegal and certainly action may be taken in that regard.

In terms of the work that would need to be done to the Volkswagen, Audi and Skoda cars that may be recalled, as we understand it and as the Secretary of State made clear at his evidence session to the Transport Committee, the EA189 engines of 2-litre and 1.2-litre capacity need a software fixing. I am guessing that means a computer in the side of the car and reprogramming. The 1.6 litres will need software plus fuel injectors. These are common rail diesel engines with electronic injectors and they will need to be replaced. I am sure that the manufacturers will be keen to ensure that any warranties in place would be still in place with that modification. It is already the case if one has parts fitted during a warranty period by the manufacturer and they are genuine parts then that does not obviate any warranty obligation from that manufacturer or supplier.

Q109 John Mc Nally: Can I ask a supplementary to that? There is a possibility of other manufacturers. It is a bit like somebody described just recently performance enhancing defeat mechanisms like if you are running a race and you have come second and another person has won the race. He may be Ben Johnson and you are Carl Lewis, and you feel quite angry about that because you have been defeated by someone who is cheating. Do you anticipate that these other manufacturers could be taking Volkswagen or any other company to court on this to try to reclaim the money that they may feel that they have lost?

Mr Goodwill: On the NOx situation, it is basically a pass/fail. The vehicle has to pass the test, which is why we can use the PEMS.

Q110 John Mc Nally: But surely they could argue that people have been buying cars on the emissions?

Mr Goodwill: Yes. On the CO₂ we have always made it clear, indeed my comments in the House in January of this year made it clear, that there is a discrepancy between the lab test and the performance you are likely to get in terms of CO₂ and fuel consumption on the road. The advertisements generally state that real world driving conditions may vary. It is also true that you can drive a car in different ways. My Jaguar TDVi diesel has a button that says “sport”. If I were to press that button, which I don’t do very often, my fuel consumption will increase dramatically and my CO₂ will increase dramatically, but it does depend on driving style.

Q111 John Mc Nally: That is a great example, I think, of what we are actually talking about here. You have bought that car and Jaguar have spent a lot of money on advertising and millions of pounds on investment in this and then you feel that somebody has actually lied.

Mr Goodwill: I think the first speech I ever gave on this subject was on 3 November 1999 in the European Parliament on the subject of information available at point of sale when people bought cars. Those figures have always been based on the test cycle. Our objective is to make that test cycle more representative of normal driving conditions. The test cycle that we are working on with our European colleagues, which we expect to be introduced in 2016, will reduce the discrepancy between the lab and real world. It is important that the test for CO₂ is replicable because it is not just information available at point of sale that this is used for. It is used for the fleet CO₂ averages that companies have to achieve and very large sums of money depend on hitting those targets and not hitting those targets. We are looking at fines of in some cases hundreds of euros per vehicle for not reaching those targets. If there was any suggestion that those tests were not completely replicable and fair then we could find ourselves open to legal challenge.

So it is very important that we do have a test for CO₂ that we can make stand up and be replicable. In the same way we are talking about whether the battery is charging, whether the air conditioning is on, as long as we have a level playing field that we are not comparing one car with the air conditioning on and one without it on, that means that at least we can make a comparison across different makes of car. If your constituent is choosing to buy a car between two different manufacturers, at least he will know both those cars were tested on that same basis and he can expect that the performance on the road will be not as good as the figures he sees, but with the new test coming in it will be much more representative.

Q112 Chair: Minister, before we bring in other Committee members, can you just answer the question about timetable? You have an investigation underway. Could you clarify when the investigation is likely to be finished or when we might have some interim findings from it?

Mr Goodwill: In terms of the NO_x emissions, I think the limiting factor will be the availability of these testing kits. We understand the Germans have a number of these pieces of equipment. They cost £100,000 each. Currently the VCA have one of these and we are in the process of procuring another, so it will not be possible to test thousands of vehicles in a short timescale.

Chair: But you must have some idea.

Michael Hurwitz: There are two streams of activity so far. The VCA with the new kit has started by retesting the Volkswagen Group vehicles for which they were responsible for giving the approval. That is Skoda engines. There is a process of testing that has now begun that will look at the vehicles on the lab test cycle but also doing the real driving emissions testing as well. Our Secretary of State was in contact with his counterpart in Germany, Mr Dobrindt, and they agreed that the technical team should be in touch in Germany. They were very keen that there was no duplication of effort. The team was out there last week with the Germans and we are currently trying to work out what would be a sensible co-operative programme of testing. I would estimate interim results will be in a couple of months but, as the Minister said, it is new kit. The real driving emissions needs to be repeated and reliable. So there is variation even if you do that test—

Q113 Chair: So interim results within a couple of months?

Michael Hurwitz: I believe there will be certain findings that could be given by the end of the year.

Q114 Geraint Davies: I would like to ask both Ministers about what tests you use and how they have changed in the last two years for nitrogen dioxide in particular. In light of the article in *The Financial Times*, that you will have seen, that revealed that two years ago the EU Commissioner for the Environment, Janez Potočnik, said that the air quality in Europe had not improved because the vehicle testing did not reflect real world driving conditions even though they were supposed to, I would like to ask, first of all, Rory Stewart of DEFRA what action DEFRA took immediately following that advice two years and, indeed Robert Goodwill. If they took no advice, are they complicit in the current problem we are facing?

Rory Stewart: The first thing is you are absolutely right. There has been long an awareness that there is an enormous gap between the way that these things perform in the lab and the way they perform on the road. The first thing to say is that it is clearly a nonsense. The purpose of this lab test is supposed to be to model what happens on the road, so the fact that effectively we have gone along for some time in the European Union with a situation in which a lab test does not reflect real world conditions is basically a scandal.

Q115 Geraint Davies: So what did you do about that then?

Rory Stewart: Let me take you back and then I will tell you what we did. The first thing is that this letter that you are referring to here was in no sense any kind of secret. COPERT, which is the computer modelling brought together by the European Union, has itself publicly put forward figures consistently, year after year, showing huge discrepancy between the performance of the Euro 4, Euro 5 engines and projected a discrepancy with the Euro 6. So this was not in any way a secret. The approach of the British Government was to insist on real world driving standards, so we did that in May. The Department for Transport ended up in the situation where the UK was one of the only countries to be pushing for real world driving standards in that May debate. I then raised it again in the Environment Council in June. I was at the Environment Council yesterday where again the public UK position is to push for real world driving standards. So we feel, in terms of the public, that it is ludicrous that you have a gap between the lab and the road, but also that we have a particular problem in Britain, which is that our ambient air quality

concentrations of nitrogen dioxide are very bad and the main reason for that is the failure to perform of the Euro 4, Euro 5 and we believe the Euro 6 engines. So we have a direct national self-interest in making sure these engines perform to the standard.

Q116 Geraint Davies: But if you thought that the lab test did not work or reflect the real world and that was acknowledged two years ago and before then, didn't the Department look for the reason that there was no relationship—for instance were there defeat devices—or alternative tests that do reflect the real world?

Rory Stewart: There are two separate questions here, as you say. One of them is the question around the type of tests that are conducted and the second is what the UK Government does about it. Let me take the second one first and come back to the tests. What the UK did about it was to push really hard in the European Union to move to real world testing. We were not satisfied with this situation. We were blocked by other countries in May and why other countries chose not to go with us in May I suspect may have something to do with their own calculations around their own industrial bases, I don't know, but they decided not to go with the UK position in May.

In terms of us picking up what the discrepancy was, there has been a lot of publication on this. Again, this has not been a secret. A lot of academic institutions, IWCC, UK testers, European testers and others, have pointed out the major reason for this—and this was the reason 2014-2015 and this is separate from defeat devices—is that they were effectively, in the Minister's words, preparing for the exam and they did it in different ways. They had things called golden cars where it appears that manufacturers may have made decisions to optimise the car for the test cycle. These could include, for example, reports on them removing wing mirrors, removing cassettes, running the engines in a particular way. To some extent, if you look at the real outrage, which is that between the Euro 4 and Euro 5 engines when it was supposed to get stricter, in fact the NO_x situation got worse, it is quite clear what had happened. You can go on Wikipedia and you can see the exact detail of the test cycle.

Mr Goodwill: This is for the rolling resistance test, because when you put the car on the test cycle you then set the rollers to replicate the rolling resistance of the vehicle on the road. Things like taking off door seals or wing mirrors would reduce the rolling resistance of the car and therefore the level of braking on the rolling road would be used. So there are two stages, one is the rolling resistance test, which Rory has mentioned, but secondly in the lab itself where otherwise optimisation methods could have been used.

Rory Stewart: Furthermore, the test cycle itself was public information obviously because the manufacturers were preparing for this test. So it told them how many seconds they had to go at a particular speed and it turns out that it was possible for them to design entire engines around the performance of those particular measures.

Q117 Geraint Davies: Are you saying that the Departments were aware that the manufacturers were cheating the tests and doing nothing about it?

Rory Stewart: I am saying the Departments were absolutely aware that these laboratory tests were not effectively replicating real world conditions, which is why the United Kingdom in May pushed very hard for those real world tests, long before this Volkswagen scandal broke.

Q118 Geraint Davies: You knew they were cheating the test. The result of them cheating the test was that 50,000 people a year are dying from these pollutants and you knew about it.

Rory Stewart: Let me be quite clear on this. As the Minister said, technically what they were doing is they were optimising for these tests. We were not comfortable with them optimising for those tests but within the terms of those tests, within the rules written for those tests, those manufacturers were performing in compliance with those tests. The problem is those laboratory tests did not accurately reflect real world driving conditions. There is a huge discrepancy between the amount of NOx in them.

Mr Goodwill: In terms of CO₂ we understand there is always going to be a difference with the lab test and the real driving conditions. In terms of NOx we are in a whole different ballpark with the levels that have been found in some of these Volkswagen cars. This is not just optimising the test. This is, as Volkswagen admitted, a cheat. Incidentally, we have introduced real world driving tests for NOx on HGVs and in fact that came in in 2013. The reason we did HGVs first was because the equipment at that time was very large and could not be fitted on to a passenger car. In HGV performance we have seen very big reductions in NOx, as high as 90% on the motorway. So the correlation between the NOx of HGVs and the test cycle has been pretty good. We possibly were naive in expecting that passenger cars would be similarly performing according to the test, at least maybe not as well as the test and under optimal conditions but certainly in that same ballpark.

Q119 Geraint Davies: On the differentiation between the lorries, which are performing well, and the passenger vehicles, surely you knew that in 1998 the EPA in the USA reached a \$1 billion settlement with the manufacturers of heavy duty diesel engines who agreed that they cheated emissions. It was in all the papers at the time. Since then, of course, the heavy duty vehicles have properly fitted these devices and many of these lorries emit less than passenger cars and yet somehow Government did not spot it in the cars. You think, “That was amazing, the lorries are good but the cars aren’t”. It was because they had to pay \$1 billion of compensation for doing the same thing we have now found them doing today.

Mr Goodwill: When the new selective catalytic reduction systems came in for HGVs, there were a number of hauliers rechipping their vehicles so that they would get better fuel consumption but worse NOx production and that is something that we were aware of. It happened at the time I was in the European Parliament and we were aware of that happening and the manufacturers were very keen to ensure that this didn’t happen. For one thing, it could have obviated the warranties on those vehicles. But the fact is that when we introduced the real world testing for the trucks, we found the performance was actually very good but the cars have been in a different—

Rory Stewart: Could I quickly just confirm, the specific question you are asking is whether the UK Government were aware that manufacturers were cheating? The answer is we didn’t believe manufacturers were cheating. We have now discovered that Volkswagen in the United States was clearly cheating. These defeat devices are cheating. This is an illegal activity. What we were aware of is that there was a discrepancy between the lab performance and the real world performance, which we attributed to manufacturers

designing vehicles specifically for the lab tests. In other words, what we thought the problem was that the test was no good, not that the manufacturers were cheating. What we were pushing for is a real world test to make sure we had a better test that reflected real world environments. We were not aware that people were cheating.

Q120 Geraint Davies: In 1998 the lorry makers were found to be cheating and we knew why they were cheating. They had to pay \$1 billion compensation. They changed and now their lab performance works. In the passenger vehicles we found it does not work and we can't guess why. It doesn't take that much intelligence to work out that possibly it is the same sort of devices being used, and it transpires that it was.

Rory Stewart: I think the answer is that we believe that the most reasonable explanation, setting aside Volkswagen and their defeat device, for the gap between how these things were performing in the laboratory and how they were performing on the road is that we had the wrong kind of test. We would set up a test where we would have revealed the rules so clearly to the manufacturers that they were beginning to design vehicles that were exactly design to mimic those tests and perform against those tests in every single way. So it would be like producing for a student preparing for an exam all the details of how that exam was going to be conducted.

Chair: Minister, I think we get that. The question that keeps being pushed is: in the knowledge of that why didn't we move sooner and faster and harder to deal with that issue that we were all very aware of? As I said at the beginning, I refer back to three previous reports that touched on this very issue as well.

Q121 Mary Creagh: Welcome to both Ministers. Given that you have described the cheat devices of Volkswagen and given that there is a prima facie case of some sort of corporate criminality, what steps is the UK Government taking either through the Environment Agency or the Competition and Markets Authority—because this is obviously anti-competitive behaviour, environmentally damaging behaviour, behaviour that has real world impacts on the long-term and chronic health effects on children and anyone suffering lung disease—to seek redress from the manufacturers? Are you aware of any action being taken at the European Union level in this area by, for example, either the Commission or referring it to the European Court of Justice?

Michael Hurwitz: You correctly point out there are a number of routes through which legal action may be possible. You are correct that the Competition and Markets Authority could do that. There is also the new consumer legislation. In addition, there is the Serious Fraud Office. The Competition and Market Authority and the Serious Fraud Office would act independently. They would come to that decision themselves. I understand from the lawyers in the Department that we have checked with them about those legal powers. They have in turn sought information from us, which we would be happy to provide, but they would take that decision independently. There are powers that the Secretary of State for Transport can take if a manufacturer has knowingly provided vehicles into the market with falsified information on the registration documents, but what we need to prove—

Q122 Mary Creagh: What are those powers?

Michael Hurwitz: They are under the Vehicle Regulations Act. Essentially they would be able to prosecute an organisation for presenting information that is false about vehicles that go into the market.

Q123 Mary Creagh: Is that now underway?

Michael Hurwitz: Step one is proving what actual crime has happened in the UK. The investigation needs to establish—we know that the engines have the defeat devices there. We need to establish whether they were operating, what the impact of those is, and what VW here have admitted is that this has happened in America. We need to establish what the actual impact is of the technology and defeat devices for the UK.

Q124 Mary Creagh: Volkswagen said that it was not happening in the UK. Given that we are going to have a software fix in all cars, there is a *prima facie* case, surely.

Michael Hurwitz: We are gathering evidence. They have submitted to us a range of technical information, I believe last week, that the VCA are looking through. They are required to provide to the VCA, as the approval authority, full technical details of that. It is complex. The experts at VCA are looking through that and the Secretary of State and Ministers will take a view once we understand the full—

Q125 Mary Creagh: I don't think it is complex. I think it is actually very simple. There is also surely a case for some of these fines or whatever action is taken to be used in our National Health Service, given that as well as the environmental impacts, there are human health impacts that are causing premature deaths, 50,000 excess deaths a year. That is an awful lot of people in each of our constituencies. It is not actually complex; I think it is very simple. Can you tell us by when the Secretary of State will have made his decision on whether to take legal action?

Michael Hurwitz: I am not aware of a specific date. I don't know whether the Minister might wish to comment on the considerations.

Mr Goodwill: I think you would need to collect enough evidence to be able to have a good case to bring forward. We also need to find out, as you mentioned, what the European Commission intends because it may well be that they will be bringing action at a European level as these are European regulations that are being potentially flouted. Our primary objective at the moment is to test the vehicles to ensure what the extent of the problem is, not just with Volkswagen Group cars but other vehicles on UK roads. Secondly, it is to make sure that the cars that need to be recalled and fixed are recalled and fixed. In the UK, because it is not a safety feature, we don't have a statutory power to ensure these cars are recalled. So we are looking at, after the first tranche of people who want to get their cars fixed get them fixed, how we can then work with the owners to make sure they do, possibly through a check at the time of the MOT test to see if the affected vehicles have had their software reprogrammed and if necessary—

Q126 Mary Creagh: Can I bring you back to the legal question? Can we be clear: the Serious Fraud Office is investigating? Is that correct, Ministers?

Michael Hurwitz: No, they have not shared with us the details. We understand they are looking at it but you would have to get the details from them about their own process. They don't share that with us.

Q127 Mary Creagh: So that is point number one. Are you aware of any action taken by the Competition and Markets Authority?

Michael Hurwitz: Not aware of action. Again, we understand that they are considering it but because of their independence, they would need to provide that information.

Q128 Mary Creagh: Number three, the Environment Agency in terms of prosecution for breach of environmental regulations?

Rory Stewart: This is going to sound a bit legalistic but these are quasi-judicial processes. We are not in a position to comment on prosecution's evidence gathering and if we were to do so we would compromise those legal cases.

Q129 Mary Creagh: I am just asking if they are happening. I am not asking you to comment on them. I want to know if they are existing or not.

Rory Stewart: These are matters for those agencies and they have to be dealt with very carefully. I am sure those agencies would be happy to brief you.

Mr Goodwill: Given the amount of equipment we have for testing these cars, we certainly are not in a position at the moment to have the comprehensive evidence that would be needed to pursue such a case. The admission from Volkswagen Group that they have employed a defeat device may be not sufficient to actually bring a case forward. I think we would certainly need to have evidence from the testing equipment that we now have and can deploy.

Q130 Chair: Both Ministers, you just mentioned there that there is nothing within this to demand a mandatory recall of vehicles but I understand that Germany has done exactly that.

Mr Goodwill: They have always had that power. If necessary, we would look at whether we need to change any legislation but at the moment all the indications are that the owners of these vehicles are very keen to bring them in and get them fixed and Volkswagen hope to start the process in the New Year and have the cars repaired by the end of next year. I think we need to monitor to what degree there are people who are not bringing their cars forward, but the vast majority of people I guess will be very keen to get these cars sorted out.

Q131 Margaret Greenwood: This is a question for Rory Stewart. I would be interested if you could tell us why the new projections for compliance on air quality are such a dramatic improvement on the previous projections, what supporting evidence there is for this and will you be publishing that evidence?

Rory Stewart: Which projections specifically are you talking about?

Chair: You are now in a situation where your latest projections suggest that within your air quality consultation 35 zones will be compliant by 2020. It is quite a dramatic uplift on the previous projections, which is 28 zones. The question is why such an uplift so suddenly and does this inquiry, does what has been happening here have any bearing on those projections?

Rory Stewart: The projections of how many zones are going to be in breach of the ambient air quality directive, which is specifically related to a concentration of 40 micrograms per cubic metre within the city centres of key cities in the United Kingdom, depends on an enormous model that overlays data we have from the national emissions inventory, climate modelling, in other words how this stuff is pushed around, so within an individual city you can end up with concentrations in different places, the road network that is overlaid, and our assumptions about engine performance and fleet turnover, which relates to the Chair's question, which is whether this will affect it.

Q132 Chair: Can I just ask on that? In your consultation you alluded to, "The most significant changes leading to the upward revision is a revised assessment of the performance of both Euro 5 and Euro 6 standards". Our worry is if that is your main criterion for the uplift, are you going to go back and revise those downwards?

Rory Stewart: Let me set the overall picture and then I will come directly to Euro 5 and Euro 6. In terms of the emissions within an individual city—so if we take London that might be of interest to Mr Goldsmith and others around the table—the source of the ambient air quality problem, which is probably problems around nitrogen dioxide and can be in relation to particulate matter, ranges from domestic boilers and industrial boilers, non-road mobile machinery, which could account for 12% to 15% of the sources in a particular place. In certain places such as London and Southampton it includes ships and diesel engines on ships, heavy goods vehicles, light goods vehicles, buses, taxis and cars. Of cars, there will be petrol cars, diesel cars and hybrid and then there will be different engine types of those cars. The model attempts to take all those sources of emissions, allocate likely emissions values to them, overlay weather maps in order to work out how those things move around and also put in potential pollution coming across the Channel or from industrial facilities around and then—

Q133 Chair: I understand all of that. Can I bring you back to the very precise point that within your assessment it refers to the most significant changes, which are the, "Euro 5 and Euro 6 standards for light duty diesel vehicles and a significant drop in expected emissions for Euro 6 heavy duty vehicles"? Do you still have confidence in your projections?

Rory Stewart: Let me connect those two things together. The reason why we say that in the document is the thing that is likely to make the most dramatic difference in terms of ambient air quality concentrations in a city—Birmingham, Leeds, Nottingham, Derby, London—is going to be the question of how these vehicles perform and what the level of the fleet turnover is, as you say. We have a pretty good idea of Euro 4 and Euro 5 engine performance in the real world because those engines have been on the road for some time and we understand how much of the fleet these constitute. It is quite easy in our models to be pretty confident that we know how many Euro 4, Euro 5 engines there will be and in reality how much those things emit.

The Euro 6 engine is a new engine type that is being brought in. Calculating how much a Euro 6 engine will emit is about creating a mean average between different vehicle model types. Let's say for the sake of argument that there was manufacturer A that was in real world conditions exceeding five-fold the laboratory tests and manufacturer B exceeding in the real world by 1.2 the laboratory tests. We would have to take the best available data that we have and reach a reasonable scientific calculation on what we believe the likely balance between those two is. Obviously if there was more of the former and less of the latter then you would have higher concentrations.

The best data available to us at the moment is about the performance of Euro 4 and Euro 5, which is reliable. Our best projections on Euro 6 in relation to both light and heavy goods vehicles leads us to believe—and our scientists kick this through again and again and we run the models again and again, and these are complex models and they take three months to run—that we are in a better position than we had believed. That is why we are more optimistic.

Chair: You don't think that the concerns that we have now over the difference between real world testing and lab testing on a variety of things but also the fact that historically using exactly those sets of data have lead us to a position where are not achieving the air quality standards that we want to? Can I bring in Rebecca?

Q134 Rebecca Pow: Thank you, and welcome, Ministers. I know this is a very complicated issue even for us to ask questions on. The Transport Minister earlier referred to that the tests are 40% out of kilter with real world tests.

Mr Goodwill: CO₂.

Rebecca Pow: CO₂. For NO_x tests, the level had been broken by a factor of five, which is massive.

Mr Goodwill: And unexpected.

Rebecca Pow: And unexpected. So that is massive. I understand these Euro 5 and Euro 6 standards are being failed and the UK is lobbying like mad in Europe to get a change to the real world test but you don't seem to be making very much progress because they have not changed anything yet. It might sound naive but are our hands very tied by Europe in this? We would like to move much quicker and faster to cut down the pollution because it would be much healthier but our hands are tied, and it does seem that they are also tied with the influence of the manufacturing and motor lobby who seem to be behind the question that was raised at the very beginning about the loopholes. Nobody wants to loosen any loopholes. Are our hands really tied? We are all talking round in circles, but when can we get all these European regulations changed? That seems to be what is really going to affect our pollution here in the UK, all our zones and all our standards.

Mr Goodwill: For CO₂, we always would expect that the lab test was the optimal performance and we understand that while the old test could be as much as 35%, 40% out, the new test will be much closer, but we have always understood the situation and explained it to people buying cars. The difference with NO_x is that this is a pass/fail test and a large number of vehicles that would indicate would have passed the test when they

were tested in the lab are failing out on the road, not by a factor of 40% but by a factor of 500%, 600%, and that is absolutely unacceptable.

It is also very important in terms of air quality as we plan our road investment strategy. We have an unprecedented level of investment in our roads and we model the air quality to ensure that we can continue to comply with air quality standards. We had been using the figures that we expected from the Euro 6 vehicles. One of the reasons that I gave in the debate in January on why we had not met the air quality standards was that due to the recession we had not had the turnover in new vehicles that we had expected and therefore there are fewer new vehicles on the road, more old vehicles on the road. We expected that as new vehicles came on stream, particularly the Euro 6 vehicles, it would be better. That isn't happening.

What we do not know and what the testing will tell us, testing Volkswagen and other cars on the road that we now know are not compliant, and what will be interesting is once they have had the fix at their local garage, how they will comply then. If we can bring them back within compliance then we are doing an awful lot to address the air quality problems. We have looked at other ways of mitigating air quality. There were speed restrictions on motorways, barriers at the sides of motorways, even working with some large employers that run airports near the M25 to see if their employees can have more electric vehicles. All sorts of things like that could be addressed.

Q135 Rebecca Pow: Can I interject, Minister? We had Mr Hawes here. He is the head of the Society of Motor Manufacturers and he said in the inquiry last week that he did not think diesel cars should be used in cities, which I thought was quite a remarkable statement to come from a man in his position. Is that a road we should be going down? Is something as drastic as that, especially in the light of all these pollution results that we are seeing, a line we should be going down? That raises the question about why everyone was encouraged to go diesel and the tax relief and all those things. That opens another whole can of worms.

Mr Goodwill: Diesels were treated in the same way for tax as gasoline engine cars. It was just because they were more fuel efficient it could incentivise diesel to an extent. Diesel cars have made a contribution to meeting our CO₂ targets. Small diesel cars are more fuel efficient than small gasoline cars and therefore a lot of manufacturers have been keen to sell diesel cars because they want to meet those important CO₂ targets. We are also working to incentivise the use of ultra-low emission vehicles, electric cars, and from a small beginning we have seen big increases. For example, in the year to date to September 2015 over 20,500 ULEVs have been registered, which is an increase of 261% on the same period last year. The majority of diesel cars you see running round London are taxis and, although tighter standards were brought in some time ago and the dirtier taxis left the roads of London and some of them went to Manchester, we now have Geely, the manufacturer, investing £250 million into producing a hybrid taxi in Coventry with 1,000 jobs. We are ensuring that we can incentivise the use of electric cars as well.

Q136 Chair: Minister, this is all good. However, we keep coming back to the fact that of the 43 areas that are being monitored for the worst air pollution, I think it is 38 of them are currently failing. In some other areas we won't be hitting the air quality standards

until 2030; in one of them at least I understand in current projections. The Minister is shaking his head but we will come back to that. You seem to be very certain that the data you have, on which you are basing your future projections for air quality, are okay. This doesn't really affect.

Mr Goodwill: No, our data are based on cars meeting the Euro 5 and Euro 6 emission standards. It now appears they are not.

Q137 Chair: Will you be revisiting them in the light of this?

Mr Goodwill: What we will need to ascertain when these vehicles have their software fixes is just how they are performing, and that remains to be seen.

Q138 Chair: If that shows discrepancy, will you be revisiting it?

Mr Goodwill: We will need to keep that under review because we have based our predictions of air quality—we have seen 61% reduction in NOx despite what we know and sulphur dioxide has been reduced.

Q139 Chair: Right. You will keep it under review.

Mr Goodwill: Yes.

Chair: Minister Stewart, are you keeping it under review?

Rory Stewart: Yes.

Q140 Chair: If there is any doubt over these, are you happy to publish the data on which your projections are based?

Rory Stewart: Just to try to go back to your first point about why we are being more optimistic. The modelling that we do is done in partnership with COPERT, which is the European modeller. When it comes to Euro 5 engines, we don't really have a major problem about knowing how much these things emit. We are already using PEMS equipment; COPERT's figures are pretty accurate. The reason we were more optimistic is that the COPERT calculation particularly on heavy goods vehicles meant that they performed better than COPERT had predicted. COPERT's assumptions were that they were going to perform worse on the road than they turned out to perform. The reason we are more optimistic is Euro 5 seemed to be performing better and even Euro 6 heavy goods vehicles are performing better than we expected, so that is good news.

We can come back later to how our air quality plans work in terms of the 2025, 2030 details on this, and I am very happy to talk about that later. I think it is absolutely central to distinguish two different things. One of them is the test that these guys undergo in the laboratory and they have not been failing those tests as they are written. In the case of Volkswagen, it appears in the United States they have been cheating those tests. That is different thing. The other guys have been passing those tests. The problem is the tests don't give you a reliable indicator of how you perform on the road. That is where our PEMS equipment comes in; that is where our monitoring equipment comes in; that is what we are trying to do to look on the road. Of course, Mr Chair, if these cars are pumping out far more nitrogen dioxide than the current COPERT model takes into account, we will

have to rewrite our air quality plans because our aim is to meet the ambient air quality directive.

Q141 Caroline Lucas: Will there be a difference to your projections as a result of the fact that the new tests that the Commission was going to bring in 2017 are now not going to be brought until 2019?

Rory Stewart: The central question here is not going to be the introduction of the new test. The central lever that the Commission is proposing to use to control this—and they are bringing this forward on Wednesday—is to focus on the issue of the conformity factors. What the Commission is proposing to do is to take the current test and then define a level of 1.6 to 2.2 as opposed to the current performance that can be 4, 6 or, in the case of Volkswagen as occurred in the United States, nearly 20 times greater than the test. That is the lever that the European Commission is trying to use to reduce the emissions and that will require these manufacturers to significantly change their technology in many cases.

Q142 Zac Goldsmith: Just as a very quick technical question. I am not sure how a car qualifies to the Euro 6 but if a car qualifies on the back of a formula that is fraudulent, does that mean that Euro 6 is discredited or does it mean that the car is stripped of its Euro 6 status? How does that actually work? How in turn would that impact on things like the ultra-low emission zone?

Mr Goodwill: It is not a case of status. It has to meet Euro 6 to be marketed. It is not a case of this is a sort of premium brand. It has to meet Euro 6. Euro 6 for NO_x is 0.08 grams per kilometre for diesel.

Q143 Zac Goldsmith: But if it meets Euro 6 on the basis of a fraudulent testing programme or a system that gets around the existing testing programme, what does that mean for the car with the Euro 6 status?

Mr Goodwill: We had assumed some discrepancy between the lab test and the real world situation but not a factor of 6, the sort of factors that we had got used to with CO₂. We are absolutely on your side with this one. We are not defending the motor industry here. If cheating has taken place these people need to be held to account.

Q144 Zac Goldsmith: I am just interested to know what happens to a class of vehicles—

Rory Stewart: Technically speaking, Mr Goldsmith, a car that meets the Euro 6 standard, and the Euro 6 standard is defined as a performance within the laboratory, is a Euro 6 engine. The technical answer to your question is that if these cars perform in the laboratory according to that test cycle they will get a Euro 6 accreditation. Our problem is that we don't think the Euro 6 accreditation gives us a good indication of the real world performance.

Q145 Zac Goldsmith: But if they perform in a laboratory with the help of a cheat device and they achieve Euro 6 status, were you to remove that cheat device that would not—

Rory Stewart: Then they would cease to be Euro 6 engines.

Q146 Rebecca Pow: So it is a mockery. The whole thing is a complete mockery of the system. That is what we are trying to get to and it affects our own—

Rory Stewart: But on Mr Goldsmith's exact question, if you remove the defeat device.

Mr Goodwill: The cheat device is turning off the emission controls system. They have shown that they can meet the test in the lab using the system. We understand that the defeat device is actually turning off the system to achieve possibly higher fuel consumption or higher performance.

Q147 Zac Goldsmith: It is a technical question. We know there are a whole bunch of cars out there, a huge number, which are Euro 6 but which in the real world are nothing like Euro 6. The question then is what do you do with Euro 6, because Euro 6 is an important part of a whole load of other regimes, the ultra-low emission zone for example?

Rory Stewart: Two different categories. Imagine two different types of vehicle. Imagine vehicle A, which could be, for example, Volkswagen in the United States that had a defeat device that was cheating the system. If the only way that they could get through that test is with a defeat device that is a piece of software that was literally cheating the system and they were unable to perform to Euro 6 conditions in the laboratory without that device then that would not be a Euro 6 engine.

Q148 Zac Goldsmith: So cars will be stripped of their Euro 6 status. Is that right?

Rory Stewart: If that were the case. However, as Mr Goodwill has suggested, it may well be the case that by removing the defeat device these guys can perform at a Euro 6 standard, in which case they would be a Euro 6 engine.

Q149 Zac Goldsmith: Theoretically it is possible that cars would be stripped of their Euro 6 status and that is where the consumer—

Rory Stewart: A car that cannot perform within the laboratory to the Euro 6 standards does not have a Euro 6 engine, but category B, a car that performs within the laboratory to a Euro 6 standard but it turns out the NOx emissions in a real world condition are different from what happens in the laboratory, would continue to be a Euro 6 engine.

Michael Hurwitz: And you are not allowed to sell the vehicle again now unless it complies in the laboratory to Euro 6 standards.

Zac Goldsmith: But the trouble is it has all become so meaningless.

Q150 Mary Creagh: I want to come back on the air quality side of things. The European Commission began infraction proceedings against the UK in February 2014 because 16 of our 43 air quality emission zones were in breach. My constituency, Wakefield, is one of the air quality zones. I am not sure if we are in breach or not but there is certainly very high pollution, mainly caused by the M1 and the M62. What can the DEFRA Minister do about what is happening with those legal proceedings in the light of these revelations? Has that infraction paused? The second part of my question is that

DEFRA has discretionary powers under part 2 of the Localism Act to require local authorities—my local council in Wakefield that is currently facing £38 million worth of cuts—to pay some or all of an infraction fine. Would the Minister care to give a guarantee to local councils who are facing potential infraction fines that, given the regulatory failures and the cheating by Volkswagen, which have obviously contributed over many years to these air quality problems, no local council will face EU infraction fines?

Rory Stewart: There are two separate questions. The first thing is what is the UK doing.

Mary Creagh: No, what is the European Commission doing towards us? Is that still ongoing?

Rory Stewart: What is the European Commission doing towards us, number one, and number two, what happens with local councils? The answer is that we have been required by the Commission, and we have now been required by the Supreme Court in the United Kingdom as well, to come up by the end of this year, by the end of December, with a plan to bring us into compliance. This is a no ifs, no buts, you have to get below 40 micrograms per cubic metre of ambient air quality of nitrogen dioxide in city centres. So what we are currently consulting on is a plan that will bring us, according to our models, into compliance by 2020 in those cities and by 2025 in London. From the point of view of the Commission and of the Supreme Court they will need to be reassured when they look at our plans, when we publish at the end of December, that that is what our plans will do. That is what this whole thing is about: are our models good enough; are the plans good enough; are they convinced that we are going to come into compliance? If, as we believe, we will have produced plans by the end of the year that will bring us into compliance then we don't have a problem.

Q151 Mary Creagh: So the infraction proceedings will stop?

Rory Stewart: Correct. If we can go back to the European Union and say we have plans in place that we will get below the ambient quality directive levels by 2020, 2025, we believe we no longer have a problem with the European Commission or the Supreme Court.

Q152 Mary Creagh: So you don't anticipate any fines or any local authority facing fines?

Rory Stewart: Let me put in a small proviso and then I will bring in Cheryl as I can see her slightly wincing. None of this is entirely guaranteed. It is still theoretically possible for Client Earth and others to bring cases against the Government. It is the Government's position that if we have a reasonable plan to get into compliance that will address the issue but there is still a technical theoretical possibility we could still be challenged. Over to Cheryl.

Cheryl Case: I just wanted to add that an infraction proceeding does not usually close when we just have plans in place. The Commission wants the action to actually happen on the ground; in fact so do we all. What tends to happen is the infraction stays open but it sits there and nothing happens as long as the plans are working and things are going forward. But the Commission are not just expecting plans; they are expecting action on the ground, which is what we are demonstrating.

Q153 Mary Creagh: Given the number that they are of the national fleet and given the average driving amount, what do you think Volkswagen's contribution to the breach of air quality is? Is somebody in DEFRA doing that reverse calculation?

Rory Stewart: We are and, having looked at the number of Volkswagen cars that are in the fleet, the number of those Volkswagen cars that are Euro 4, Euro 5, the likely fleet turnover, we believe this specific question around the Volkswagen vehicles is not likely to make a significant difference in our current projected models. In other words, we don't believe the offending vehicles in the Volkswagen fleet are a significantly high composition of the different sources of nitrogen dioxide and particulates for it to cause a massive problem for our modelling.

Q154 Mary Creagh: But going backwards, what historically do you think their contribution was, given that the Minister for Transport has said it was five or eight times higher than it should have been? Have they not made a significant contribution to those air quality breaches in the past? Has Volkswagen's cheat device not significantly negatively affected my constituents in Wakefield and our constituents across the country in terms of air quality?

Rory Stewart: The Department for Transport is currently testing the Volkswagen vehicles that are on the road in Britain, so we need to work out what they are actually pumping out. But there is no doubt at all that Volkswagen is clearly a component of the emissions of nitrogen dioxide and particulate matter that affect your constituents directly.

Q155 Geraint Davies: What would be the impact of banning Volkswagen cars from somewhere like London, given they are breaching the emissions requirements? Secondly, my understanding is there are 52,500 people die a year from pollutants related to diesel. How will the projections of the number of people who will die change now that VW have been found to be cynically manipulating the tests? Finally, do you think there is a case for the Government to bring a case of corporate manslaughter against the senior executives of Volkswagen? Obviously the shareholders are suffering but it is not their fault; the consumers are dying and it is not their fault; and the directors are liable. So what are you doing about that?

Rory Stewart: On the air quality, you are absolutely right, we now have more and more medical evidence about the impact that particulate matter and nitrogen dioxide have on human health. This is something that the European Commission is making a real priority. The Commission has now brought forward proposals within the national emissions ceilings directive and the aim of those proposals, and you asked specifically about the numbers of people and how many of your constituents, how many British people were going to die, what was going to happen—

Geraint Davies: Yes, in Britain not in Swansea.

Rory Stewart: The purpose of those proposals is to halve the number of premature deaths from pollutants by 2030. This is what the European Commission is trying to take through the national emissions ceilings directive at the moment and that is what they are negotiating. That is the target they are aiming for; they want to halve the number of premature deaths from air pollution by 2030.

Q156 Geraint Davies: Had we known about these devices a couple of years ago when the EU started moaning about the difference between lab tests and actual live tests, when they knew there was no difference, as I said earlier, with the lorries, and we had got these defeat devices out of VW cars, how many thousands of people's lives would have been saved? I know Mr Goodwill is going to come back and respond about whether we are going to have the guts to take up a case of corporate manslaughter, but how many people would have been saved from this cynical corporate abuse?

Rory Stewart: It is a very good question but it is really a question for COMEAP, the modellers. The King's College London people try to produce figures on these kinds of things. That is a very complex question you are asking, a very complex model, and I suggest King's College is better than me to answer that question. I don't believe anybody has tried to run that model yet. You would have to find out exactly what the composition of the fleet is, you would have to calculate exact emissions and then you would have to run it against the health indicators, but this is what King's, as the leading authority almost in the world, is doing.

Mr Goodwill: In terms of banning Volkswagen cars from the road, anything like that would be premature. We would need to get some results from the testing that we are carrying out to see if that once these cars have been reprogrammed they can comply. All the indications are that they will be substantially improved. The degree of that improvement remains to be seen. We are also testing diesel cars right across the fleet from different manufacturers to ensure we are not picking on anyone in particular, so we will get a better picture of what the position is in terms of the performance of that fleet. As I said earlier, the HGV fleet actually performed better than we anticipate and therefore it is particularly disappointing that the diesel car fleet, in terms of the Volkswagen situation, are not performing as well as we might expect.

There are a number of areas where prosecution can be brought and Mr Hurwitz has outlined those already in terms of knowingly making a false or misleading declaration, the Competition and Markets Authority.

Q157 Geraint Davies: What about corporate manslaughter specifically?

Mr Goodwill: I think that is probably something that would be above my paygrade to decide on whether a prosecution of that type might be successful, but certainly if it could be proven that a case like that might be brought that could be open. This is a European-wide problem, these vehicles have been licensed on a European-wide basis, so it may well be that the European Commission will be bringing actions against manufacturers who are seen to have used these defeat devices, which are illegal. This is not about optimising the test. This is about using an illegal device, which is unacceptable.

Q158 Peter Aldous: Does either Department hold a current estimate of how much the treatment of conditions relating to air pollution costs the National Health Service?

Rory Stewart: These figures are produced on COMEAP calculations. I have been reminded by officials that the chair of COMEAP is a King's professor but technically this is done under the auspices of COMEAP itself rather than King's although it is the same individual in two institutions. These figures are then run through the Treasury Green Book, published by the Government in the Green Book, so it is possible for you to look

directly at what the public health costs of these things are. There are two kinds of public health costs, as you will be aware. Some of them are indirect costs related to public health, and those again are published, and some of those will be direct costs of the treatment of specific conditions, which are particularly in relation to respiratory and heart conditions, often in relation to people who have pre-existing respiratory and heart conditions. Again, these are questions for COMEAP rather than for me.

Q159 Peter Aldous: From your perspective, will you be looking, then, to change the way they carry out these assessments in view of what has happened?

Rory Stewart: No, I think the COMEAP assessments and the Treasury Green Book assessments are good. We have an increasingly serious and focused understanding of the impacts on human health of particulate matter and particularly recently nitrogen dioxide. This stuff began, Mr Aldous, as I am sure you are aware, with Six Cities studies in the United States 20 or 30 years ago where people began to look at the statistical differentials and began to see a problem in and around air quality. But we are now getting that down to a much, much more localised level. The scientific progress, even in the last six months, has been considerable on this.

Q160 Caroline Lucas: Can I put a question to Minister Stewart? I want to put something to you just to make sure I have it absolutely right and then you say yes or no.

Rory Stewart: Sure.

Caroline Lucas: Marvellous. In DEFRA's draft plan to improve air quality published in September it states, "The failure of the Euro standards to deliver the expected emission reductions under real world driving conditions means that road transport is by far the largest contributor to NO₂ pollution in areas where the UK is exceeding NO₂ limit values". If I am to conclude from that that the failure of the test regime to adequately enforce the regulations is one of the key reasons that the UK has breached its legal air pollution limits, you would say yes?

Rory Stewart: Let me explain what I mean.

Caroline Lucas: I really do not want you to. I just want it really clear on the record because then I want some other questions to follow from it. Can we conclude that the failure of the test regime to adequately enforce the regulations is one of the key reasons we have breached air pollution limits? Because that is what that—

Rory Stewart: Yes.

Q161 Caroline Lucas: Good. Can we then establish when we first knew that the emissions from diesel vehicles were vastly exceeding on NO_x? We have known about the differential on CO₂ for ages. I think Minister Goodwill said it was rather a surprise that there was this big differential on NO₂. When was that first known?

Rory Stewart: We have been pushing, as the UK Government, since at least 2011 for real world testing.

Q162 Caroline Lucas: I suppose my point is that if it was known—you said 2011; I have a report here saying Whitehall knew about it six years ago. There is all of this pushing; meantime, as others have said, people are dying. It just feels that the pushing that has been happening does not feel commensurate to the challenge out there. What I wanted to put to you was that, as the Environment Commissioner himself has said, bringing in stronger pollution limits was an uphill battle, in part due to the strength of the car lobby. We then have lists here that have been put in the public domain today saying that campaigners for cleaner air had two meetings with DEFRA in the last Parliament, whereas the Society for Motor Manufacturers had 50, the individual car manufacturers had 116 meetings. There is a very big imbalance between the lobbying going on by the car industry and any lobbying being done by clean air people.

Rory Stewart: Not in my experience. I can assure you as a Minister the people that I am meeting, and we do stakeholder engagements on this, are far more likely to be people who are NGOs associated with clean air as opposed to vehicle manufacturers.

Q163 Caroline Lucas: If we talk about the last Parliament, the facts have been uncovered through Freedom of Information or whatever other processes to say that there were two meetings of clean air campaigners at DEFRA in the last Parliament and there were 50 with the Society for Motor Manufacturers and 116 with individual car manufacturers. What I want to put to you is that we have known about the fact that NO_x is a really big problem for many years. We are being told by yourself that you are pushing in Europe to get something done about it, but at the same time we have this massive lobbying going on by the car industry in opposition to that. I am just putting it to you that that could be one of the reasons that we have not made more effective progress in this area.

Rory Stewart: Okay. I think again maybe there are two separate issues. One of them is this question of why we are not making more progress. These are, as the numbers and the name suggest, European standards. They have to be European standards because this is a European-wide market. Now, 80% of the vehicles manufactured in the United Kingdom are sold into Europe. We are trying to run a single market with a single standard and in order to agree that single standard we need to get agreement from other member states. The reason why the United Kingdom is not able to simply wave a magic wand and say, “This is what we want” is that we have to get that agreement.

Yesterday, in the Environment Council, it was very clear to me that the Volkswagen scandal has significantly changed the position of other member states. I was sitting around a table in which almost every single member state came forward saying that they are now committed to real world testing, whereas in May the United Kingdom was the only state saying that. There is a technical meeting of the Commission tomorrow, Wednesday, looking specifically at that and yesterday you saw almost every state around that table supportive towards the Commission proposal. France said absolutely openly, “We hope that we are going to be able to welcome the Commission’s proposal on Wednesday”, which is the push for a much, much tougher standard. You are absolutely right in saying this Volkswagen scandal has been a game changer. It has completely changed the mood and the dynamic within the European Union.

Chair: Caroline, are you happy? Do any other Committee members have any other questions about the issue over the pressures on Ministers when they are at EU and in the UK

as well in terms of squaring the circle between trying to do the right thing on public health and on emissions and air pollution and the motor manufacturers as well?

Q164 Rebecca Pow: It is just a very quick one. We are all talking about the same area but, Minister Stewart, you said that we have to come up with a plan to bring the UK into compliance with our air pollution standards by 2020 and 2025 for London. It is absolutely along the same lines. If we do not get that test change, if we do not get the real world alignment, how are we going to do that by 2020? Do you realistically think, because we have already not met any of our targets, and how much do cars play a part in that?

Rory Stewart: The answer there is city by city. If you are looking, for example, at cities such as Nottingham and Derby, we believe on the basis of our models that it would be sufficient in our early calculations to look at road congestion and road movement and buses and taxis in order to get ourselves into a situation in which we are going to be compliant, in which you meet the 40 micrograms per cubic metre level in those cities. There will be other cities like London, where the mayor is pushing forward with an ultra-low emission zone, in which he will be pushing for the exclusion of passenger vehicles, not simply heavy goods, light goods, buses and taxis. Are we confident that we can make these things? We are working on the very best available data that we have with COPERT. We are combining PEMS data, which is data stuck to the back of these vehicles, with the lab data and we are reaching our best possible estimate of what the vehicle composition can be. On the basis of that, yes, we believe we can meet these targets.

Q165 Rebecca Pow: It does not involve changing the European tests much more quickly so that the cars that we are using on our roads help us do that, in which case we have to move rather quicker than we are, I would suggest?

Rory Stewart: You are absolutely right. If what happens is that the European Union decides, in line with the Commission's proposals, to rapidly advance much stricter standards for the tests and for the compliance and conformity factors, then it will be easier for us to meet our nitrogen dioxide levels in these cities.

Q166 Zac Goldsmith: Just very quickly on that point, in the last session we had Volkswagen and the representative from the SMMT, whose name I cannot remember.

Mr Goodwill: Mike Hawes.

Zac Goldsmith: That is right. They told us that they were very much in favour of introducing real world emissions testing and also tougher emissions standards generally. Do you give that impression they gave us any credence at all based on your experience as a Transport Minister? Have you ever seen them lobbying for higher standards?

Mr Goodwill: I used to work in the European Parliament on the Environment Committee and I did this most of the time. Yes, you would always have a trade-off between consumers, environmental groups and the motor industry. I cannot think of a single situation when the motor industry have not said, "These are far too ambitious targets, we cannot meet them" but then they put the money into the R&D and they did it. One example, I can remember Dr Caroline Jackson, who used to chair the Environment Committee, telling me she had been approached by the motor industry, which said, "We cannot possibly take lead out of petrol, it is impossible. We have to put lead in petrol to

make these cars work properly”, whereas in the year 2000 lead was completely removed from fuel and we now have a reduction of 100% in the amount of lead that is put out by road transport. Similarly, we have had massive reductions in benzene, in sulphur dioxide, a reduction of 91% from transport, because we have taken it out of the fuel. It is in the bunker fuel and the ships are burning it out at sea but we have taken it out of the fuel. Indeed, in terms of NO_x we have seen a 69% reduction in NO_x between 1990 and 2013, but that is not as great as we predicted because of the standards being brought in. That is the frustration that we face.

Q167 Chair: With all of that, the reality is we know that we are still failing in terms of air quality and we know we need to go further. That is why, despite the reassuring words—and I understand, Minister—that you are giving to us on that, historically we know we are failing and we need to go further. This casts a slight edge of concern. Well, more than a slight edge of concern. I want to move this on—

Mr Goodwill: We need to do two things. We need to ensure that we are complying with the current rules and we also then, where we have particular issues in particular areas, need to look at local solutions.

Chair: Indeed, and that is why I want to move it on now. Caroline, I wonder if you could take us on to this issue of the air quality consultation.

Q168 Caroline Lucas: I simply wanted to ask that given that so much of DEFRA’s air quality aspirations are dependent on what happens in the Department for Transport in terms of exactly what we have been describing, then why wasn’t the whole air quality consultation a joint DEFRA/DfT process given that the two areas are so interdependent?

Rory Stewart: We did work very, very carefully together on this. It is a DEFRA lead but our modelling was developed along with DfT colleagues. We had very close conversations. Michael has been in a number of meetings with us on this. It is something the Government takes very seriously and we work with all other departments on but particularly closely with DfT because, as you say, our models depend on DfT data.

Q169 Caroline Lucas: Are you concerned about your Department’s ability to ensure the proposals are met given that you are not directly responsible for the implementation?

Rory Stewart: No.

Caroline Lucas: Good.

Q170 Peter Aldous: I would just like to spend a few minutes on what I think has been dubbed the diesel/petrol pendulum and the way that policy, probably over quite a long period, has favoured diesel vehicles, I think to such a degree that in 1994 there were 1.6 million cars with diesel engines registered in Great Britain and in 2014 this had risen to 10.7 million. Would you agree that policies favouring diesel engines over petrol engines because of their better carbon dioxide performance have worsened the public health problems around nitrogen dioxide?

Mr Goodwill: Certainly, diesel cars have got an awful lot better and I think that is the major factor in incentivising people to purchase diesel cars. They used to be very rattily. They used to be very noisy. They made up a very small proportion of the fleet. Diesel cars have got much quieter. They have got much smoother and, of course, in terms of fuel consumption they are very attractive for people to buy who do high mileages. That, of course, has made a contribution to reductions in CO₂.

In terms of taxation, they have not been discriminated in favour or against, but obviously if you have a vehicle that is more fuel efficient, then you are likely to get benefits in terms of the vehicle excise duty and company car tax bands and everything else. I think diesel has played a major part in reducing CO₂ emissions from transport and if they had complied with the European standards in practice as we—we expected a bit of slippage in the same way as we did with CO₂ but not the five, six or even more times. I think we will be in a better position to know exactly where we are once we have tested a few modified Volkswagens but also tested vehicles across the fleet to see to what extent there is that discrepancy between the lab test on NO_x and the actual performance on the road.

In terms of CO₂, diesel cars perform very well. In terms of the reductions in some of the particulates and other pollutants that we get from diesel cars, the emissions control systems have also worked very well. Indeed, we have introduced an additional requirement on the MOT test to check that any particulate filters that are fitted to cars are checked they are still in place so that we cannot get people themselves just modifying their cars by not replacing the expensive catalytic converter or trap in that way. We do understand that diesels have benefits in terms of CO₂, and if they were meeting these emission standards then they would also have benefits in terms of reducing other pollutants.

Q171 Peter Aldous: The managing director, Paul Willis, of VW UK, when he was in front of us a few weeks back, did say it is time that we look at the swing of the pendulum and say, “Have we let that go too far?” He was referring to Government policy. Do you agree with him?

Mr Goodwill: As in so many things, our job is to set the targets and the requirements in terms of CO₂ and pollution and then let the technology develop that can deliver on that. Now, obviously if diesel cannot deliver then diesel has a problem, but the standards that have been set for diesel to comply with would have ensured that diesel vehicles would have been making a contribution to reducing the CO₂ emissions. Cars these days, even diesels, which were always very efficient, have come on in leaps and bounds in terms of the fuel efficiency. I think it would be premature to try to unnecessarily demonise diesel at this stage. We need to see how the vehicles are performing in practice and when cars have been modified from the Volkswagen fleet just how they do actually end up performing.

Q172 Peter Aldous: Depending on what that shows, you might consider a review of policy?

Mr Goodwill: We certainly look at policy at all times. Some of these policies are down to the Chancellor in terms of vehicle excise duty and other taxes and company car tax and that sort of thing. Indeed, the VED bands have been simplified somewhat so we’ve not got this situation where we have very small differences in performance making a big

difference in terms of the vehicle excise duty that will be paid. Indeed, the zero band will be for the ultra-low emission vehicles, and coupled with the £5,000 grant for people who buy those vehicles we are making it very clear that the tax incentives that this Government are introducing are all about incentivising these very low emission vehicles.

Chair: Geraint, do you want to come in on that?

Q173 Geraint Davies: Yes, just briefly, Chair. You will know that in the 1980s something like 10% of new cars were diesel and now they are 50%, partly because of the focus in the 1990s on reducing carbon and the manufacturers saying, “We can do it with diesel”. There was a trade-off between fuel efficiency and pollution and obviously VW has fixed that. You will also know that this Sunday, in *The Sunday Times*, there was the revelation that of people living in low emission zones like London there is a 10% reduction in the lung capacity of children living in low emission zones. Do you think this is a very strong case to reduce the number of diesel vehicles going into city centres?

Mr Goodwill: We are certainly keen to devolve powers to mayors and regions and already we have seen with the London congestion charge measures being taken to address some of the problems with traffic in London. We have the low emission zone for trucks and no doubt those who wish to become mayor next year will be looking at other measures that could be taken. I think it is important that we do not forget that we are seeing much greener buses on our streets. The new “Boris Bus”, as I think everybody calls it, is a hybrid bus produced in Northern Ireland, which is producing better performance than the more traditional Routemasters and other buses. Of course, as I mentioned earlier, money is being invested in a cleaner taxi, a hybrid taxi, which would be used in London and elsewhere. There are more strings to our bow than just a basic ban on diesel.

Q174 Geraint Davies: But you would accept that it is diesel that is killing people as opposed to normal petrol cars? I know in petrol cars there is an issue about CO₂ and we all care about the carbon emissions, but in terms of 50,000 deaths we are talking about diesel here that has not been properly controlled, has it?

Rory Stewart: This is a very, very sensitive subject because we are talking about people’s premature mortality.

Geraint Davies: Yes, of course, people being killed.

Rory Stewart: Technically speaking, if you look at the COMEAP model, that is the modelling on the likely impact of all nitrogen dioxide and particulate matter in the air. It is not source specific. It is to do with the ambient air concentrations.

Q175 Geraint Davies: But mostly it is passenger vehicles, isn’t it, despite what you said earlier?

Rory Stewart: Yes, the majority of the emissions in most of our cities are caused by passenger vehicles, but there is still a surprisingly large extent from construction machinery, boilers and all these other sources, power stations.

Geraint Davies: Yes, you mentioned.

Q176 Zac Goldsmith: A big decision the Government is going to have to take obviously relates to air capacity and Heathrow expansion. The Government cannot, I believe, give a green light for Heathrow expansion unless you can show that you can reconcile Heathrow expansion with the air quality targets we face. Heathrow and the Airports Commission maintain that you can, that you can do both things, you can deal with the air quality considerations for London and have a third runway. Are there estimates based on what we now know to be flawed data and, if so, what does that mean from the point of view of the Government? How are you going to assess the report that you have been provided by the Airports Commission if the assumptions are based on data that we now know to be flawed? How do you reconcile that?

Mr Goodwill: There are a number of infrastructure projects around the country. I will throw another one in: the Lower Thames Crossing, whether that is at Dartford or further down the estuary, where air quality is an important factor, where, in fact, we cannot go ahead with those projects unless we can demonstrate we can meet air quality standards. Now, the modelling that we had previously been using assumed that the Euro 6 NOx levels were being complied with and, indeed, other particulates and all the other types of pollutants that we measure were being complied with. Obviously, in the light of some of these revelations we do need to revisit that, but I would not say that we need a root and branch review of how we do things. We need to look at how these vehicles will perform, how the fleet will turn over, how, for example, we will have more electric vehicles in the fleet. Indeed, looking at Heathrow specifically, the majority of the air pollution is associated with the M25, not with the airport itself. But we do need to demonstrate, whether it is a smart motorway project on the M1, whether it is a crossing at Dartford or wherever, that we can deliver these projects, which will help relieve congestion.

Q177 Zac Goldsmith: Sorry, the point is that the new revelations that we have do, one way or another, have an impact in relation to the big infrastructure decisions and air quality, so it changes things. It may not change things dramatically but it changes things in relation to Heathrow, river crossings and so on.

Mr Goodwill: At the moment, all we have to go on is the fact that some Volkswagen Group cars have employed defeat devices and are not performing as expected. We do not know how wide the problem is across the industry, neither do we know how the fix will work in terms of bringing them back into compliance. Other factors such as turnover of the fleet will help, so if people are buying new cars that will automatically improve the emissions of those vehicles and, indeed, looking at emissions from aviation itself, we have more fuel-efficient planes. We need to model all those types of sources of pollution for whatever the project might be, whether it is a road project or a rail project. We are electrifying a lot of our railways, so we will have reductions in NOx from diesel railway locomotives, which we will also need to factor in.

Q178 John Mc Nally: I will be looking forward to Alexander Dennis in my own Falkirk constituency reducing the emissions here next year when they start reducing the electric buses. I too read the article in *The Sunday Times* about the pollution and the effects it has on lungs. I just wanted to finish before you go on a point of information. It seems to me can we do anything with the actual MOT in the here and now or have we

done anything with the present MOT as it sits to raise the level of the emissions? When was the last time the level was actually raised?

Mr Goodwill: The problem with the car MOT test would be you would need to look at the cost of installing NOx equipment at every MOT car testing station around the country and how that would be rolled out. At the moment, we have a simple test for basically smoke in terms of diesel cars.

John Mc Nally: It is a very minimal standard as far as I am aware.

Mr Goodwill: We do not test for NOx at MOT and at this stage we have not looked at whether we should. If we can ensure that the vehicles start to comply, that will certainly be the low-hanging fruit we should go for rather than necessarily looking at massive investment across the garage sector. Indeed, as we are doing, we can pull cars out of service and test those to check to see—

Q179 John Mc Nally: I read the article as well and near Blackwall Tunnel it says it is about 25 times the national average, all of it from diesel engine traffic. Surely we could try to do something in the here and now to help to alleviate that as a problem.

Mr Goodwill: Petrol cars produce NOx as well, they just do not produce as much as diesel cars. I have an Alexander Dennis factory in my constituency as well—

John Mc Nally: Good, we have something in common.

Mr Goodwill: —and I am hoping to visit the Falkirk factory in due course.

John Mc Nally: Good. Well, I will be obliged if you would.

Q180 Mary Creagh: On the ultra-low emission vehicles, can the Minister say how well he thinks the £400 million committed in the last Parliament has worked, whether he is conducting a review of lessons learned on that, and what early plans he has for how that will be rolled out in this Parliament? For example, taxis is a big issue in London. The buses that are electrified here in London, the old diesel buses then get cascaded, as he is well aware, to other parts of the country. They are often cascaded out of London and then into parts of the country where the emissions quality is poor or in breach. So, taxi scrappage, bus cascading, and what about liquid petroleum gas and the early investment that the last Labour Government had made in the infrastructure on that, are there any plans to revive that?

Mr Goodwill: I think in terms of the uptake of ULEVs, electric vehicles, one of the key factors that has improved the take-up of those is the availability of models. You remember those sort of gee-whizz things that people used to drive around in in London; they did not even look like a car. Now we have some mainstream manufacturers, not least Nissan Leaf in the north-east. The Mitsubishi Outlander has been remarkably successful as an electric petrol hybrid. I think there are now 26 vehicles on the market here in the UK with another dozen or so expected in 2016. We have given grants already in 2015 for over 20,000 electric vehicles and predicting 30,000 in 2016. From a small beginning, the electric vehicle movement, if you could describe it as that, does seem to be picking up. I think a lot of the range anxiety that people experienced, worried about running out of power, is slightly becoming allayed as more people get them. I believe that we do have tremendous

potential to build on our achievements in terms of electric vehicles. Obviously, the autumn spending review will have some bearing on budgets in every department, so we cannot say too much ahead of that. Of course, there is a taxi scheme and a city scheme with bids now in for trying to improve the performance of our fleet. Certainly, in London there are a lot of diesel taxis around there and the new investment from Geely, the producer of the London cab, to produce a much more environmentally friendly taxi I think will have a part to play.

I quite understand the point you make about cascading down. It is what happened when the London taxis were retrofitted and improved. A lot of the old taxis went to places like Manchester and it is the same to a degree with buses. Of course, this generation of hybrid or electric buses coming on to the streets of London will be the next generation vehicles cascaded down to other parts around the country. It is great to see so much investment going into more environmentally friendly buses and cars and we need to build on that. I know there is an awful lot more to be done.

Chair: You have been very generous with your time but, Geraint, you have a short supplementary you want?

Q181 Geraint Davies: Yes, a very quick one. You said that you did not want to go ahead with MOT testing for diesel emissions across the country because it is too expensive. Can you do an assessment of that cost and compare it with the cost to the NHS of health harm from diesel emissions and, indeed, the 50,000 deaths that we have been talking about? Surely it is worth investing in that to save the money in the NHS.

Mr Goodwill: Well, if testing cars at MOT stations just underlines what we knew already, that cars were not performing and that their NOx emissions were breaking the Euro 6 standards, I am not quite sure at what point that would take us. Do we then say basically that car should be scrapped and taken off the road? Because that would be—

Q182 Geraint Davies: Yes. Will you take draconian action to remove all these dirty cars that are killing people in London and elsewhere from the road? It seems very complacent, the whole tone of this.

Mr Goodwill: At this stage, the evidence we have from Volkswagen is they are going to recall these cars. They can perform according to standards because they have done it in the lab. They are going to recall these cars. They are going to reprogram the software, in some cases fit new fuel injectors, and I think at this stage let us see how that works out. I think that is probably the best we can say. Also, let's test other vehicles across the fleet because I am disappointed that our projections on improvements in NOx pollution and the impact that has on our road investment strategy has not been as we predicted. It is not just people not buying new cars now, which we thought it was at the start, it is about cars not performing in practice as they should. We need to work with the motor industry to see just how widespread this problem of non-compliance is. We know Volkswagen are—

Q183 Chair: You should be back with something, hopefully within a couple of months, in order to tell us how that is going, at least some sort of interim findings?

Mr Goodwill: Yes.

Q184 Chair: I am conscious of time and you have been very generous with your time and with your answers as well. If there is anything further that you think you want to write to us in detail, please do. It may be that we follow up as well with a few questions if you would be happy to write to us.

Mr Goodwill: Yes.

Chair: Thank you for your time, and for Ms Case and Mr Hurwitz as well, but both of you Ministers. Minister Stewart, you wanted to say something.

Rory Stewart: Just very quickly to say thank you, Chairman and the Committee. This is a highly technical issue. It has been a very good discussion and you have focused on what I think the key issues are. Because it is such a technical issue, if you do have supplementary questions we would be very happy to take them and try to explain this as clearly and transparently as we can.

Chair: Indeed. Thank you very much for that. Of course, while it is a technical issue I think what we do have in very astute clarity with the Committee is the need to focus on how we get these improvements in air quality that we have consistently across successive Governments been failing to do.

Rory Stewart: So do I.

Chair: Yes, indeed. Thank you very much.