Environment, Food and Rural Affairs Committee

Oral evidence: Air quality, HC 479

Wednesday 3 February 2016

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Written evidence from witnesses:

- Rory Stewart MP, Parliamentary Under Secretary of State for Environment and Rural Affairs

Watch the meeting

Members present: Neil Parish (Chair); Chris Davies; Jim Fitzpatrick; Simon Hart; Dr Paul Monaghan; Ms Margaret Ritchie; David Simpson

Questions 286 - 364

Witnesses: **Rory Stewart MP,** Parliamentary Under Secretary of State for Environment and Rural Affairs, and **Mr Oliver Letwin MP**, Chancellor of the Duchy of Lancaster, Cabinet Office, gave evidence.

Q286 Chair: Good afternoon, Ministers. Thank you very much for coming to give evidence. We are looking at air quality in this Committee, so it is good to have both the Minister for the Environment and also the Minister for cross-Cabinet co-operation, because some of these issues need some cross-Cabinet co-operation. First of all, to both of you: poor air quality is shortening the lives of tens of thousands of UK citizens and affecting the health of many more. With whom does the buck stop for tackling this public health emergency?

> ***Rory Stewart***: The buck stops with us—with myself and the Secretary of State. Air quality is a DEFRA responsibility, and we have now brought together air quality plans. We went out with our new versions of those plans in late December. We are now working with the key six cities in order to make sure that we have compliance outside London by 2020, and in London by 2025, for exactly the reasons you have mentioned, Chair: air quality is a significant problem, and particularly the different oxides of nitrogen, especially nitrogen dioxide.

Q287 Chair: Do you feel that not just you, or what is happening now, but perhaps DEFRA and Governments along the way have not really taken air quality seriously enough? Do you think we should be in the situation where we have London especially, but also a number of other cities, just not meeting those targets?

Rory Stewart: Air quality is something that we have taken seriously, but clearly there is more that we need to do. When I say we have taken it seriously, if you look at levels of sulphur dioxide, levels of PM2.5 and PM10, or even levels of nitrogen dioxide, they have come down very, very steeply. London, for example, for all its problems, is much, much cleaner in terms of air quality than it was 30 or 40 years ago, and this is something that goes right the way back to the Clean Air Acts after the Second World War. It is hugely important, but you are right: there is more that we need to do. A lot of that is to do with the fact that some of the vehicles have not been performing at the level that we hoped, particularly the Euro 5 and Euro 6 engines. I am afraid that, in retrospect, a lot of our modelling assumed that Euro 5 and Euro 6 engines would be performing in a way that would bring us into compliance naturally, through fleet turnover, because that is a big source of emissions.

Q288 Chair: On that particular issue—and Mr Letwin is here as well—naturally, we will be asking you detailed questions on transport and on vehicle emissions, but how do you work with the Department for Transport and the Secretary of State to make sure that you act as one as a Government? I do not know whether Mr Letwin would like to come in on that one.

Mr Letwin: As Rory says, DEFRA is responsible for delivering clean air, but that is rather like saying that Parliament is responsible for making sure that the weather is better; there is the small matter of the Almighty. In this case, there is the small matter of all the other Government Departments, all the local authorities, and all the manufacturers. There are many, many people who need to contribute to this.

Q289 Chair: That is what we have you for, you see.

Mr Letwin: No, but my small role is to make sure that DEFRA is not left alone to try to deal with this morass of different people that need to be corralled if we are going to achieve the goals, and, indeed, if we are going to achieve them in a way that is consistent with the many other social and economic objectives that any UK Government is going to have: trying to make sure that we also reduce carbon emissions, that we preserve the built and natural environments, that we have British industry prosper, and many other goals as well. This is not just a single, one-off thing that we can be monomaniacal about; it has to fit into a pattern of other actions.

Looking at this a few months back, we came to the conclusion that we needed to have a mechanism for Departments at ministerial level to be talking to each other continuously, rather than just a lot of exchange between officials, which has always gone on. We formed a ministerial group that includes not just DEFRA, but the Department for Business, Innovation and Skills and the Department for Transport, as well as the Cabinet Office and representatives of the Treasury and so on, so that we could work together. To the extent that we need to involve local government, which we often do, DCLG is brought in as well, and so on.

That has proven very useful in enabling us to have a series of discussions about how to achieve the various goals simultaneously. It has revealed both the considerable challenges that we face as a nation, and also the degree to which, over a somewhat longer timescale than Governments sometimes think about these things, there are some huge opportunities.

The view is pretty well uniform amongst the ministerial group that the long-term solution—maybe even the medium-term solution—to these issues lies in the electrification of our car fleet, in great part.

Q290 Chair: Sorry, could I interrupt there? Are you looking seriously at the taxation of vehicles? For a long time, we have been encouraged towards diesels, and there seems to be a slight reverse in that role now. Will that be recognised in the vehicle excise duty?

Mr Letwin: It is more than just taxation, but certainly part of the point of having the Treasury be part of these discussions is that we will need to look at a whole range of incentives. There is a colossal opportunity in here for Britain to play a leading part in an industrial revolution that is probably going to happen anyway; we have the choice either to be a major part of it, or to lag behind it, and we want to be a major part of it. We want our motor manufacturing industry to play a leading role in electric vehicle production, and, indeed, in autonomous and connected vehicles, which is a connected though different subject. We also need to use that as a basis for having a fast transformation of the vehicle fleet.

There are huge advantages that we can have here that do not lead to conflicts between carbon dioxide and NOx, for example, which—when you are talking about petrol and diesel engines—are in conflict. As soon as you move to an electric engine, you have neither the NOx nor the CO_2. One of the reasons why DECC is deeply involved in this group is that there is then the question of the electricity supply industry and how that is powered, and so on. So there is a considerable range of issues of public policy that have to be brought together, but the point that I am trying to make is that by looking at this in the round, we can turn what is a series of very, very severe challenges into a series of very, very great opportunities. That is the prize.

Q291 Chair: It is nearly a decade since DEFRA last produced a national air quality strategy. When can we expect to see a new air quality strategy, or is it being produced as we speak?

Rory Stewart: The air quality plan was, essentially, published in late December. We produced a draft a couple of months before that, which we went into consultation on, and in late December, we produced the outline of that plan. We are now sitting down with Leeds, Birmingham, Nottingham, Derby, Southampton and London to flesh out the details of exactly how this is going to work, but we have made it very clear in the plan what the basic framework of that is going to be, which is these clean air zones.

Q292 Chair: To Mr Letwin: how many times has the clean growth committee met, and what have been its outputs?

Mr Letwin: We make a practice of not giving details of the number of times that Cabinet committees and so on meet, but it has met every few weeks. It is a regular occurrence; it is not something that meets occasionally. I anticipate that that will probably go on for a very considerable period, because these are not challenges that we are going to overcome rapidly. It is a continuing process.

It is not intended to produce reports and pieces of paper; it is intended to co-ordinate action, and to make sure, for example, that the DEFRA clean air plans for the six cities are co-ordinated with what other Government Departments are doing, and that there are no surprises. The biggest thing that it has had to do so far is to try to ensure that the discussions in the European Union about the whole question of the sequel to the Volkswagen affair and the so-called conformity factors—which we may want to come back to—are such that they match what we are doing, and what British industry can deal with. There has been a great deal of discussion of all of that in the group, and that has led to various actions by the Department for Transport and the Department for Business, Innovation and Skills, as well as by DEFRA.

Q293 Chair: No offence to Mr Stewart, but does the need to set up your committee indicate that departmental Ministers have failed to prioritise and co-ordinate actions on air pollution?

Mr Letwin: No, I do not think so at all. What it indicates is that it is a continuingly complicated thing for Governments of all types, at all times, to find ways of making sure that all the different Departments that are involved in any given thing are talking about it sufficiently. Obviously, like any previous Government, we have a range of committees and task forces that bring Departments together. This is now so acute an issue, with such wide-ranging ramifications, that it makes sense to focus specifically on it, rather than handling it within, for example, the Home Affairs Committee, the Economic Affairs Committee, or some other forum like that.

Q294 Chair: How much effect can you have on local government? You can have quite a bit of effect across Cabinet and across Government Departments, but quite a lot of controlling particular pockets of pollution within cities comes down to local government.

Rory Stewart: We have to work very, very closely in partnership with local government. Let us take an individual city—for example, Southampton. We will bring together what we believe is the framework required for them to get to the Ambient Air Quality Directive target, which is 40 micrograms of nitrogen dioxide per cubic metre by 2020. We will lay out what we believe what the most straightforward way to do that is, which is, for example, to exclude heavy goods vehicles with lower than a Euro 6 engine from entering that zone.

We can provide technical expertise, too—how you set up a camera monitoring system, and how you administer this—but they will have a lot of the detailed instruments at their own disposal. When they are aiming for that target, they could come back and say, "Actually, we would like to address this, for example, through an active traffic management system, so we might want to address it by moving the traffic off a particular road at a particular time of day. We might want to address it by removing a roundabout, or getting rid of some congestion," as a lot of the problems with nitrogen dioxide come from congestion. To be clear, the objective is to make sure that we are compliant with the law by 2020, but if the local councils have a series of ingenious, more cost-effective, smarter local ways of doing it, or indeed want to go further—some of these councils want to be even more ambitious than the law requires them to be—we are very comfortable working with them on that.

Q295 Jim Fitzpatrick: Gentlemen, good afternoon. Can I just develop the local government dimension? This is national Government policy, European directives, and national Government finance, which I cannot imagine you could passport on, but you might want to comment on that. Regarding the relationship with local governments—giving them, as you have just described, Minister, advice and technical support, and so on—they have been asking for greater devolution. How do you get the balance right between what you would like to see, what we are required to do, and what local government want to do, and how they can actually deliver?

Rory Stewart: We set the output target, which, as I say, is an Ambient Air Quality Directive target of 40 micrograms per cubic metre for nitrogen dioxide, and they are to be in compliance by 2020. We have a series of incentives to help them towards that. Within that target, the rest of that is basically up to them; provided that they are compliant by that date, they can do it in a range of ways. As you are aware, Mr Fitzpatrick, the sources of emissions in a particular city range all the way from non-road mobile machinery, construction machinery, domestic boilers, heavy goods vehicles, cars, and so on, and therefore, the local authority will have a range of options on how they want to address it, what they want to tackle first, and how they do that.

Q296 Jim Fitzpatrick: In London, we have 32 London boroughs, the City and the GLA, and air quality moves across those. One issue that I am sure you are familiar with that we have been tracking is the cruise terminal at Enderby, and where shipping fits into DEFRA's guidance, which, for shipping, does not seem to make reference to NOx in particular, although it is in the general policy. It is quite curious that the LGA's written evidence that we have received refers to failure to use policy areas such as planning to ensure developers site new schemes in appropriate places and mitigate air quality. Greenwich could have mitigated a potential impact on air quality by requiring the developers to supply shore-to-ship power, to not require the cruise vessels on the Thames to use diesel engines half of the year when they are sitting there, but once Greenwich has made that decision, the Mayor of London cannot intervene; DEFRA cannot intervene, and the Government's cross-party Cabinet sub-committee cannot intervene. So in many instances, local people are saying that a mistake has been made, and it cannot be rectified by any of the senior local government or government bodies. That is anomalous, and causes great frustration.

Rory Stewart: You are right; this does cause frustration. Constitutionally, the position is that that planning decision must be made locally. Our contribution to that as the Government is two-fold. First, we give advice. Our advice on that was strongly that mitigation measures should be put in place, but the local authority has the legal and constitutional right to make a planning decision; having taken that advice into account, they can disagree with us. They can go ahead and make that decision. The second contribution the Government make, apart from advice, is to set the overall threshold for ambient air quality, and they must make sure that what they do does not bring them into non-compliance with that overall threshold.

Q297 Jim Fitzpatrick: So the lack of power for you to intervene allows Greenwich to make a decision that does not impact on their residents, because they are building on a brownfield,

empty, vacant lot. I have 20,000 constituents 100 or 200 metres across the River Thames who will be impacted, and we do not have the ability to influence that outcome, and neither do you.

Rory Stewart: You are absolutely right. That is a decision for Greenwich, but we would strongly encourage them to work with us. I know that the Mayor of London's office has made £400,000 available; it is not an enormous amount of money in the context, but it is something. We have a good model that we are now looking at in Southampton, and we would certainly wish to encourage Greenwich to look again at the possibility of electric plug-ins. It seems to me to make a lot of sense that you should not be running a full diesel generator. There are some complexities—not all ships are able to take these things; you need to adapt in different ways, and you need to have the right generating stations in place—but I would certainly be very, very happy to work alongside you to try to encourage Greenwich in that direction. However, you are correct: the decision ultimately rests with them.

Q298 Jim Fitzpatrick: Have you had discussions with them?

Rory Stewart: Not with Greenwich; with Southampton so far, but not with Greenwich. We have given advice on this. We gave advice during the planning process.

Q299 Jim Fitzpatrick: To the Mayor of London, or to Greenwich?

Rory Stewart: To Greenwich. In the planning process, they have received advice already on our views on this.

Q300 Jim Fitzpatrick: I would be very happy to follow this up outside Committee if I may, Minister, rather than bog the Committee down in what is a local matter, but it is a pan-London matter, and it is a serious air quality issue. *The Guardian* recently published an article saying that the Government has halved the councils' cash to fight air pollution. Is that a fair assessment? Given austerity, and given that there are cuts across Government, they are saying that the money is 50% down and that the number of projects that were previously run is down to 16, half the level of the previous funding rounds. This year, there are 12 projects run by only eight councils, compared with 42 projects run by 36 councils just three years ago. Is this of concern for you: that austerity is impacting on local authorities' ability to invest in dealing with and mitigating their air quality?

Rory Stewart: I would have to look specifically at what *The Guardian* is talking about, but in terms of our big-ticket items—which are the hundreds of millions of pounds that we are spending on cycling, walking, and electric vehicles—there is still very, very considerable investment, and I do not see that kind of decline, so I would be interested to know what exactly they are looking at here. In rough terms, we should be spending something in the region of £600 million on those over the next five years.

Q301 Chair: Do you mind me coming in a minute on the issue over Greenwich and the boats? We believe the amount of pollution that potentially comes from these ships is the

equivalent of 680 HGV lorries being driven through. If you take the bigger argument, if that does increase our likelihoods of not being able to get to our targets, then eventually, if we are not careful, we are going to get fined for this, so therefore surely it is in Government's interest to do a little bit more? I understand we cannot decree what the local authorities do, but surely we need to have a little bit more power over what happens? Otherwise, in the end, not only are people going to have extra pollution, if we are not careful, we are also going to have to pay for it.

Rory Stewart: On that, the answer is that shipping is a significant issue if you live in Greenwich. In terms of overall nitrogen dioxide pollution in London, I am afraid it is not. From the 2003 figures, 0.0006% of the total pollution comes from these ships.

Q302 Chair: Are you saying, Minister, that having these ships will make the situation better? When we are already over our targets, surely even if it is only a low amount, it still adds to the amount of pollution.

Rory Stewart: If you think about it, Chair, these are difficult trade-offs, but if you are asking what is going to make the real difference, if shipping is producing 0.0006% of the pollution, you are much more likely to have an impact by focusing on heavy goods vehicles, light goods vehicles, and cars, which constitute a much larger proportion of that pollution.

Q303 Chair: I do not necessarily disagree with your argument, but when you have a project that is something like £220 million, and it is two-point-something-million to provide electric to these ships, it does seem rather a no-brainer. If you look at the quality of life for all those people in the flats surrounding this area, it seems a nonsense that we cannot take more action.

Rory Stewart: This is a fundamental constitutional point. There is an elected council that has made a decision. I think most of us around this table find that decision difficult to agree with; some of us might even disagree strongly with that decision, but it is their decision, and they have the legal right to make that decision.

Chair: I understand.

Q304 Ms Ritchie: Minister Stewart, existing policies have left many UK cities regularly in breach of EU limits for nitrogen dioxide. Upon what evidence has DEFRA based its assumptions that new clean air zones will deliver the extra reductions needed to meet EU limits?

Rory Stewart: We make our assumptions on the basis of our national air quality model. The model essentially takes into account climate, including wind movement; sources of pollution, such as large industrial factories; and the fleet mix, meaning how many heavy goods vehicles, light goods vehicles and cars you have—these are Department for Transport figures—and within those, what the different types of engines are within those vehicles. Our model tells us that between 2014 and 2020, the majority of heavy goods vehicles will be using a Euro 6, rather than a Euro 5, engine.

This information is plugged in, and that is then overlaid over a street plan, which gives you the information—taking Leeds as an example—about exactly where the roads are located, and allows us to run through a model. We have information on where pollution is likely to come from, and that then allows us to come up with a statement about which cities we believe by 2020, given fleet turnover, would be in breach of the two main indicators, one of which is an hourly indicator of 200 micrograms per cubic metre, and the other is an annual mean of 40 micrograms per cubic metre. Our modelling has arrived at six cities, and it is on the basis of that that we address Birmingham, Leeds, Nottingham, Derby and Southampton. We remove certain emissions of pollution—to be blunt, in that case, heavy goods vehicles, and in certain cases light goods vehicles, buses and taxis—and then we run the whole thing through the model again, having removed those sources of pollution, to reassure ourselves that by 2020, those cities will be in compliance.

Q305 Ms Ritchie: Given the level of local discretion that is included as part of the clean air zones plan, how certain can Government be that they will deliver the level of improvement that you are looking for, or that is required?

Rory Stewart: We have a fair degree of confidence here, because these clean air zones—as the basic structure that we have proposed—are relatively straightforward to set up and relatively straightforward to police. There is now good technology on licence recognition, which will tell you whether or not the heavy goods vehicle driving into the town has a Euro 5 or a Euro 6 engine. We have piloted it, effectively, with the congestion charge zone in London—that has already given us the technology and the wherewithal to do this—but we believe that some of these cities would like to do even better, and that is when we get down to the local level of things like active traffic management systems and other measures that might be taken in the streets to, in relation to Leeds for example, take some of the heavy vehicles off the ring-road on to another road.

Q306 Ms Ritchie: Did the evidence that the Department relied on when drafting the clean air zones take into consideration the limited resources at a local government level?

Rory Stewart: We had very, very careful discussions with local authorities. We ran workshops in the Department where local authority officers came in. I called the leaders of the councils individually. Our teams went up to those individual cities to talk this through, and we are convinced that the combination of the incentives that will be provided by central Government and the resources of the local authorities will be sufficient to deliver this by 2020.

Q307 Ms Ritchie: And you are confident that the councils will be able to develop the details of the national framework within which the local air zones will operate.

Rory Stewart: Yes, we are, partly because some of those councils are already quite well advanced in that respect. Birmingham, for example, has already done a great deal of work on this. Leeds has been very interested in this, so some of these councils are quite a long way down the road already. In London, the ultra-low emissions zone was fully developed before we even had to go forward into the consultation.

Q308 Ms Ritchie: How will you ensure that councils other than those that you have mentioned have the powers to enforce the clean air zones? Will you be monitoring their actions to ensure that the UK meets EU limits?

Rory Stewart: Under the current modelling, these will be the only councils that would be required to do this. However, we really want to work with other cities that want to be more ambitious. There is not a "safe" threshold for nitrogen dioxide; if you go below 40 micrograms per cubic metre, it is good. It is better at 38; it is better at 35; it is better at 30. Cities like Oxford or York, for example, are already taking huge strides in that direction. We would like to continue to work with them. Every local council is obliged to have a local air quality plan. Our officials work with them on those plans, and many councils have taken huge steps already—for example, the Leeds-Bradford cycle superhighway, or the movements that Oxford itself is doing in removing its roundabout. The city of Bath would be another example. All these are examples of cities and councils that are not within this list of people who we believe will be in breach in 2020, but we would intend to work with those councils to improve their record.

Q309 Ms Ritchie: Would DEFRA be able to intervene directly in the management of clean air zones if, after a reasonable period of operation, the local council or councils have failed?

Rory Stewart: DEFRA does have reserve power on this, and we need to be absolutely clear and unambiguous that these areas will be in compliance with the European legislation by 2020. But my sense is that the local councils themselves are very keen to do this. We have the right support structures in place; we have a good plan in place, and it will not be necessary to rely on any tougher incentives than we currently have.

Q310 Ms Ritchie: When do you expect to introduce the necessary legislation for the clean air zones, and will our Committee get the chance to scrutinise this in draft form?

Rory Stewart: We will bring together over the next few months, with those local councils, the exact detail of how this is going to operate in each place. Some councils need more time to develop this than others, and, of course, the Committee will have the opportunity to scrutinise it when that is done.

Q311 David Simpson: Just in case, Mr Letwin, you are feeling neglected, this question is for you. I think it is an understatement to say that the Committee was not convinced by the evidence that was given to it by Volkswagen and representatives of the motor industry when they gave evidence in relation to the frauding of the emissions, or the story about the vehicles, and all the rest of it. How can you convince this Committee that the Government will have a robust regime to check and monitor what the motor industry, or any manufacturer of cars, is saying about their emissions is correct?

Mr Letwin: The first thing I should say is that the Committee would probably want to interrogate my colleagues from the Department for Transport in detail about that; they are obviously vastly more expert than I am. The second thing I should say is that the modelling that Rory has described, which is the basis—as he explained—for the air

quality zones, did not rely on the lab test results which turned out to be so far from the truth for these vehicles. In fact, I think I am right in saying that for all the vehicles up to and including, Euro 5, the model uses exclusively the actual road experience of those vehicles in the relevant places, so it is totally irrelevant how they performed in the lab tests on which such doubt has been cast.

There is an issue about the Euro 6 vehicles, because at the time when the modelling was being constructed, there were not Euro 6 vehicles available to have data records for, and there are therefore issues being looked at in relation to that. Actually, I am glad to say that DEFRA made estimates that did not rely on the naïve assumption that the lab test was telling the whole truth about what would happen in road circumstances. Rory and the Department for Transport may want to say more about that. Therefore, so far as the air quality zones are concerned, we are in reasonably good shape, notwithstanding the problems that you are alluding to.

The third thing I wanted to say is that the Department for Transport—alongside parallel Ministries in a range of other European countries where there is major motor manufacturing, like Germany, Italy and France—has been conducting a series of very carefully controlled and calibrated road performance tests for the Euro 5 and Euro 6 vehicles, to try to identify what the actual relationship is between how given vehicles perform under road conditions and what they looked like they were doing under the lab tests. That work is not, by any means, yet complete—either here or in the other European countries—but it is well advanced in each of them, and therefore, not too long from now, there will be publication of these results in a very transparent way, and everyone will be able to see what is going on.

At the last discussion we had in the inter-ministerial group a few days ago, it became clear that for various reasons, the different countries are doing overlapping tests. Certain vehicles will have been tested in both Country A and Country B; where doubts have arisen, we have discovered that there have also been re-tests, and there are quite considerable complexities here, because some of these things depend on ambient temperatures and things of that sort. There is a good deal of work going on to get to the most robust possible set of results.

As I say, I am sure you will want to talk to my Transport colleagues when this is all published to understand in detail how it has all gone, but I am pretty convinced, listening to their experts who have come to our inter-ministerial group—it is not just Ministers there, but people who are expert in the field and have been conducting the tests, who have explained this to us—that this is absolutely, remorselessly the technicians getting to work and trying to find out the truth, without any agenda either way, and with no fear of producing results that may be inconvenient in one respect or another. They are just trying, simply, to get at the truth. They look to me like people who spend their lives trying to do that, and so I think that when you do interview them, you will be pretty reassured that we do know the truth. You may not be reassured by what we have found out, but I think you will be reassured about the fact that we have found out the truth.

Q312 David Simpson: Mr Stewart, what evidence basis does DEFRA use for calculating the impacts of the nitrogen dioxide levels? I understand there was some decision taken in Europe

yesterday by one of the committees to actually take a lower level. Does that set us back a wee bit?

Rory Stewart: We use something called the COPERT model. As the Chancellor has just said, for Euro 1 to Euro 5 engines, we can simply take the real-world data. The way that that is done is that you effectively strap something to the back of a car, and you work out what is coming out of its exhausts as it drives around. The Euro 6 engine is a new engine coming forward. We had to make a guess on how close the performance would be to the laboratory standard. We went with a conformity factor of between 2.7 and 3; in other words, we thought these vehicles would probably perform 2.7 to 3 times worse on the road than they did in the laboratory. That is obviously a problem, which is why we as the United Kingdom, along with some other member states, have been pushing pretty hard to make sure that we got to real-world testing, instead of this laboratory stuff.

The vote that happened yesterday afternoon was quite interesting. The European Parliament has now agreed to a position, brought together by the member states and by the Commission, and that is quite ambitious. That is going to have a conformity factor of 2.1 by 2017 for new models. A completely new model of car in 2017 would have to have a conformity factor of 2.1. By 2019, any new car—even an old model—would have to be compliant, and from 2020 onwards, the conformity factor going through 2021 is 1.5, so this is a really aggressive push by all European member states to make these engines much cleaner.

Q313 David Simpson: We can look at the new vehicles with the technology and all the rest of it, but for older cars, how would the engineers address that? Would there be a mechanism put on, or some kind of piece of equipment? How do you deal with an old car that already exists?

Rory Stewart: Do you mean how would somebody with an existing car in 2019 get it to a conformity factor of 2.1?

David Simpson: Yes.

Rory Stewart: That is really a question for the DFT. My gut instinct on that is that, brutally, you have one of two choices. As a motor manufacturer, either you attach something to your new car that deals with that—that could be, for example, adding AdBlue to the engine—although you might need to take into account whether that affects the performance of that vehicle. If you cannot meet that conformity factor of 2.1 in 2019, you would have to stop selling that model of car.

Q314 Chair: Can I ask, Mr Letwin, are the Government satisfied that these manufacturers—I suspect it is probably not just Volkswagen—have basically sold lots of members of the public in this country vehicles that did not meet the emission standards that they said they should? Why, if I am buying a car in 2019, should I be convinced that they are telling the truth then? This is the problem we have, and surely there has been a huge breakdown in public confidence in what to buy. It was not too long ago that we were all being told to drive diesels; now, we are all being told to drive petrols or electric cars. I am going to have to charge my car up an awful lot by the time I get from Devon to London. It is a serious point:

it is all very well in the cities, where we can probably deal with electric cars very well, but if you are coming in and out of the cities and driving lots of miles, what sort of car do you buy, and do you trust what anybody tells you?

Mr Letwin: There are lots of important questions in that. Let me start with the immediate questions about trust in the figures, and then move onto the question of electrification. What all of us have done when we have been buying cars, up until now, is know that they had satisfied certain tests in certain labs. Incidentally, while we are at it, I am pretty certain that everybody in the country knows, looking at the materials that are available in the press, that the miles per gallon quoted—if you look carefully at the little print underneath—are not necessarily reflected in the actual MPG that you get.

Obviously, most people do not mention the NOx emitting from their own exhaust. They keep a pretty beady eye on miles per gallon, because it is a costly item for the owner, and I do not know about your experience, but mine certainly is that my car, though highly efficient—it gets an enormous mileage per gallon; it is a very tiny car with a very high-performance engine—nevertheless does not get the 74 miles per gallon that it is advertised at. It gets 62 or 63 miles per gallon, so we are used to these kinds of differences.

What makes this episode so concerning is that, in at least some cases, it has been revealed that the gap between the test results and the real-world results is much greater than the sort of difference I was just illustrating between 60 or whatever and 70 or whatever, and second, that—and I am choosing my words carefully here, because there is a limit to what we definitely know—if you read the popular press, you would get the impression that at least one manufacturer may actually have intended to produce a different result, or somebody within that manufacturer may have intended to do so, and that obviously does undermine confidence. Even if it turns out not to be true, it would undermine confidence, let alone if it did turn out to be true.

Looking to the future, this episode has served one very useful purpose, which is that all of the regulators in the European Union have come to the same conclusion: namely, that we now have to make sure that we know what, in road test conditions, each car produces. All of these cars are not only being tested now, but will go on being tested in the future, on a road test basis, so people will actually be able to tell what was going on. Rory rightly referred to a set of agreements that mean that by certain dates, there will be certain conformity factors; what he is rightly relying on is that, at those dates, those cars will be tested under road test conditions as well as lab test conditions, and the gap between the road test condition and the lab test condition will only be allowed to be whatever has been agreed for that date for that kind of car. When you buy one, you will know what it is actually producing and, more to the point, people who are trying to preserve the air quality in particular locations for the sake of the health of the population will also know.

Turning to the question of electrification, it is extraordinarily important to understand what is actually happening. I am often amazed that we have a very large, powerful, free media across our Western liberal democracies, and perhaps above all in the UK, but it very seldom concerns itself with telling us anything about what is really going on in the world; it very often tells us about something that happened yesterday, which by tomorrow you are not very interested in. I do not remember reading terribly many stories about something called the internet, which turned out to be a really quite important development. In a

similar way, I do not think we are currently being informed in anything like a sufficient way about the revolution that is occurring in front of us. I offer you the prognosis that, fewer years away from now than people currently think, you will get into a machine that looks something like a car; you punch some data into it, and it takes you silently from where you are to where you want to go to without you having to intervene in its activities at all. I offer you the prognosis that it will be able to do that with a very large range; enough for you, Chair, and me to get to our constituencies, and more.

Q315 Chair: So how far away do you think that is?

Mr Letwin: I think it is much less far than people think, because all my experience is that every time somebody tells me that something is not going to happen in the near future, and there are a large number of people putting billions of pounds into developing it, it happens a lot faster than people thought it would. I got into terrible trouble with DECC some few years ago when I said I thought we were close to the point where solar energy would be economic, and we would see it mushrooming. Guess what? Solar energy is now economic, and we are seeing it mushrooming, years before they predicted.

Chair: Do not get me on the subject of solar energy.

Mr Letwin: I am aware that this is a subject that is of concern to you, as well as me. However, in a similar way, I do not have the gift of prophecy; I cannot tell you exactly the date, but I am pretty convinced that what is going on now, both with conversion to autonomous vehicles and with electric vehicles, is very, very significant. I recently launched at Lancaster House a new Aston Martin, produced in this country with UK technology as a result of a major investment from a Chinese investor that I had spent some time courting in Shanghai, which goes at 250 miles per hour, if I remember correctly; it accelerates from 0 to 60 in four seconds, if I also remember correctly; it has a range of more than 200 miles, and it looks like an Aston Martin. A few years ago—even two or three years ago—we were being told that simply was not possible. That is, of course, an exotically expensive machine. Anyone who has the money, I recommend you immediately head for it; it is a beautiful thing, but for the rest of us, that is unaffordable. Nevertheless, what can be done at that level will start transferring itself way down, as often happens with these technologies, and indeed, I am currently in discussions with a major Indian manufacturer—not Tata—who is aiming at producing a long-range electric vehicle at a very affordable price on a mass scale, and that is parallel to conversations going on in other major manufacturers.

There is a revolution underway, and it has huge consequences for society and, indeed, for the environment, because if you can have cars that do not produce carbon dioxide, you have a massive impact on the carbon equation, as well as the NOx equation and so on. Also, once they are autonomous, you can fit dramatically more of them on a given stretch of road, so you do not need as much road-building as we are used to; you do not get so much congestion, and the level of accidents diminishes almost to zero. There is, in prospect here, a colossally significant revolution. As I say, we need to understand it fully and try to ride that wave in a way that means that Britain takes full advantage of it. We get the cars early—and as we are at it, the taxis and buses, which as Rory rightly says are a major component of these air quality issues—but we also manufacture them, to a huge

extent, in this country, and we get a huge opportunity to have the automotive industry of the future replicate the huge success of that industry today in Britain.

Q316 Chair: Thank you for that. Rory, did you want to say anything, or not? I see you being keen to say something.

Rory Stewart: Simply that the Chancellor is right, and the difference is going to be unbelievable. Most of the sorts of pollution that we are currently facing are coming from cars, buses, taxis, heavy goods vehicles, and light goods vehicles.

Q317 Chair: How feasible is it for the lorries to be electric?

Mr Letwin: The heavy goods vehicles are probably the last in the chain, but the buses, the taxis, and some of the vans are probably early in the sequence, with cars increasingly moving along behind them. It covers a very wide range, and it is very, very material in cities. You are right that, even though I think we are going to get to the point where these are universally usable, already, if you are running a bus fleet or a taxi fleet in a city, it is beginning to be perfectly feasible to electrify that. These things are really just around the corner. Getting to the point where you can buy this at the same price as you can buy a normal internal combustion engine today—a car that has the same range, but one-twentieth or one-fiftieth or something of the operating cost, that is electric—is a few more years away. But it is material that most people in the UK use a car for only 30 or 40 miles in a day—I cannot remember the exact figure. This tipping point may be much sooner than people expect, and may have more impact in cities, which is where the big air quality issues arise.

Rory Stewart: Not to be too hypothetical about this, Chair, but it is an example of something where we will get into compliance by 2020 or 2025, but it is quite possible that—if the Chancellor is right—by the sake of argument, 2030, all of this will seem a bit last year's problem, and that actually our nitrogen dioxide rates will plummet if we manage to turn the fleet over to electric. We are jumping through a lot of hoops at the moment on the basis of the current technology.

Q318 Dr Monaghan: I would like to turn to fiscal policies and incentives, and perhaps pick up on some of the suggestions that you have made about this revolution that you foresee in the context of UK Government policy. How do you feel that that policy-making process is changing, or has changed, to learn the lessons of the negative impacts that we have had from incentives to promote the use of diesel vehicles in the past?

Mr Letwin: Because the technology of the internal combustion engine gives you an unenviable choice between machines that produce worse air quality consequences on the one side, and better carbon consequences on the other, it has been very difficult for Governments around the world to work out whether to get diesel engine cars that had lower carbon emissions, or petrol cars that had higher carbon emissions but better air quality results. As I say, even within the internal combustion engine technologies, the development of small, high-performance petrol engines has engendered options that are preferable to those that we had before. I happen to drive one myself, as I said; it is highly

efficient, and you would not have thought you could get a petrol engine to produce that low a carbon dioxide component just a few years ago.

Essentially, the lesson we have learnt is that because we care very much about carbon, and we care very much about air quality, you cannot, in the context of the internal combustion engine, ultimately produce a perfect result. You are always having this trade-off. Therefore, we are spending a very large amount of taxpayers' money trying to make sure that we do everything we can to accelerate the switch into electrification, and at the moment we are also working on how we can best accelerate the incentives for manufacturers in the UK to step up and produce electric vehicles.

What we have learned is that while we can make some progress in this country, as we have done, by setting up incentives that enable a larger range of consumers to buy electric vehicles—our £5,000 per car has certainly helped to move us up ahead of most countries in the proportion of electric vehicles sold—that does not, by itself, ensure that people will manufacture the electric vehicles here, or indeed even that they will do the research and development. We have been trying to encourage those things, too, and we are currently beginning a range of discussions with manufacturers to work out how we can best provide incentives for that, and create a framework within which—to the extent that the technology of the world permits—we move fastest of all the countries, both into production and use of the electric vehicle.

Q319 Dr Monaghan: In terms of the policy-making process, what is different today, relative to where we were 15 years ago when we were promoting diesels, but now we are wanting to promote cleaner vehicles and cleaner transport solutions? How is Government going about that differently? What has changed?

Mr Letwin: I cannot give you a full answer to that, because I was not in Government 15 years ago and I do not know exactly what went on then. Various things have certainly happened over that period. One is that the level of attention, analysis and modelling that is going into this has increased dramatically. Rory was describing earlier to the Committee the quite impressive DEFRA modelling that is now available for air quality. I do not know exactly when those models were written, but I doubt that 15 years ago, whoever was then the Minister had available to them that degree of robust analysis.

The second thing that has happened is that, partly because of the recent events and partly because of growing awareness of health effects, and partly because of the work of this Committee and other such committees, we have all become more conscious of air quality issues. The third thing that has happened is that, over the last 15 years, we have all become much more conscious of the carbon issues, which of course led in that timescale to the creation of the Climate Change Act and the Committee on Climate Change, and all of the rest of that apparatus, which is enormously important, and, of course, the international agreements that have accompanied it.

Policy has moved on a long way, in the sense that all of us—regardless of politics, particular administration, or indeed which country we are in—are attending to these issues in a much more rounded, informed way, because there are better tools available and there is a better array of background and public policy to support the shift. However, the issues

remain challenging, in the way that they were 15 years ago and will be 15 years from now. These are not easy things to crack.

Q320 Dr Monaghan: Is it fair to say, then, that we are still reactive rather than proactive in terms of driving that revolution?

Mr Letwin: No, I do not think that would be true at all. We are highly proactive. It is not because somebody has told us that we should try to engender a revolution that leads us to electric vehicles in Britain being at the leading edge of the world; it is because we have decided to do that. That is a proactive, intentional stance.

Q321 Dr Monaghan: What mechanisms are now in place to make sure that the UK Government's fiscal policies reflect the latest scientific evidence in terms of cleaner vehicles and environmental solutions?

Mr Letwin: Part of the reason for having the Treasury involved in our inter-ministerial group is to ensure that as we develop the rest of policy, fiscal policy can adapt alongside it. Clearly, any Chancellor faces many conflicting concerns when they come to design changes to the fiscal regime, and I would certainly not be long for this job if I were to try to prejudge what the Chancellor is going to do in this Budget, or over the following months. What I can be sure of is that the Treasury is fully informed of the rest of this policy evolution, and is fully engaged in it. That is what we need to do if we are going to make sure that fiscal policy evolves alongside all these other policies in a coherent way.

Q322 Dr Monaghan: So we are waiting to see what will happen.

Mr Letwin: We are all waiting to see.

Q323 Dr Monaghan: Should we not be a little bit more proactive, as I have suggested?

Mr Letwin: We are proactive in discussing it inside Government, but we are waiting to see in the sense that these decisions ultimately get made by Chancellors, and as I say, you are not going to prompt me into trying to prejudge his Budget.

Q324 Dr Monaghan: No, but I am sure you would accept that the general public would like to know that mechanisms are being developed to make sure that future technology is being recognised in today's financial mechanisms that will be getting implemented by the Government.

Mr Letwin: Yes, and we are doing exactly that.

Q325 Dr Monaghan: That is the question: how are you doing it?

Mr Letwin: By discussing it with the Treasury and working alongside all the other things we are doing.

Q326 Dr Monaghan: That seems a little bit reactive. Let us move on, though. Again, for Mr Letwin, what assessment has the UK made of the costs and benefits of a scrappage scheme, giving discounts, perhaps, to those wishing to trade in older diesel models for new, cleaner vehicles?

Mr Letwin: The question of scrappage schemes is one that is under discussion. There are all sorts of issues you have to face before you design a scheme of that sort, because you have to know what is available and what kind of transition you are trying to achieve. This is not just a question of moving from older vehicles to newer vehicles; there is also the question of the revolution that I have been describing, and because we are trying to be, in your terms, proactive rather than reactive, we are not just trying to get people to move from, say, Euro 5 diesel engines to Euro 6 diesel engines. We are trying to bring about a massive change in which we leap over all of that and move to an electric vehicle fleet, and it is really important that we do not just see this in terms of one bit of the old world transformed into another bit of the old world.

We have real-time issues to face in specific hot-spots, in specific areas, and that is what Rory and Liz Truss's air quality plans address, but in a much more general way, we need a transformation, as I say, that takes us from where we are to a new world that is vastly better and electric-based. That is not going to be achieved by just having a scheme that moves you from one particular existing car to another particular existing car.

Q327 Dr Monaghan: I think we are all very interested in this new world, where things are massively different, but the answers that you are giving suggest that you are focused on addressing and resolving the problems that we face in the here and now in relation to diesel engines. I am not getting much insight on how we are going to shift from where we are just now to this brave new world, this revolution that you have outlined. The vision is good—I think we would all subscribe to that—but how do we actually get there? What are the mechanisms? What is the Government doing to be proactive and drive that revolution forward?

Mr Letwin: That is precisely what we are working on. When we have a fully-developed strategy, we will be announcing it and consulting on it, and we will certainly want to discuss that with your Committee, amongst others.

Q328 Dr Monaghan: But at this point in time, you do not know what the strategy is, you do not know what it looks like, you do not know what the actions are, and you do not know how we are going to move forward, or when.

Mr Letwin: Earlier in the discussion, the Committee was asking whether it was in any way realistic to have this vision. We have come to the conclusion that it is realistic to have the vision, in a way that is more progressive than any other country in the world. We have put a very large amount of money already into a very large number of incentive schemes, which are already operating. We are already at the leading edge of the use of electric vehicles in this country. A very great deal of activity has gone on, and is going on.

But if you are asking—as it is right to ask—how we are going to achieve a step change, a massive shift, quite ahead of any other country in the world, as no other country has a plan for doing that, my answer to you is that we are at work on that, and we intend to produce that and carry it through, but it is not something you can produce in five minutes. You have to think about it very carefully. There are many dimensions to it, and we need to get this right.

Q329 Dr Monaghan: When will it be published then? When do you anticipate it will be published?

Mr Letwin: I do not exactly know, but in the not-too-distant future. We will be doing this in time to take measures in this Parliament. This is not a question of the never-never.

Q330 Dr Monaghan: So in the next five years, this strategy will be published.

Mr Letwin: Oh, long before then, yes.

Q331 Dr Monaghan: A couple of years? One year?

Mr Letwin: I would certainly hope within a couple of years; maybe sooner.

Dr Monaghan: Okay, we look forward to having you back.

Mr Letwin: I would be delighted to do so.

Q332 Chair: Mr Letwin, you have waxed lyrical, and we have been very interested in the new vehicles that are coming through. My question was quite a lot about that, so I am not going to repeat that, but one of the points I would like to make to you is that when we have, hopefully, many more electric vehicles, and as we develop more electric vehicles, we will need those extra charging points and those places where you can actually charge your vehicle. We do have one or two spots down in the House of Commons car park; I have seen them. You are not allowed to park in those spaces if you do not have an electric car. Seriously, how are we going to engage with the industry, local authorities and whoever to make sure that there are plenty of charging points for electric cars in the future?

Mr Letwin: The first thing I should say about this is that this is an enormously important component of the total picture. One of the reasons why we need an overall coherent strategy is that one of the big issues is how you charge, or otherwise replace, batteries—or, indeed, hydrogen fuel cells. We have to remember that the technologies here are still evolving. That is something we are very much considering as part of this strategy. There are various components within that. A very large part of the population has the ability for off-road parking at home, and assuming that you are talking here about battery vehicles, which are either plug-in hybrids or pure electric plug-in, and assuming that the range can get to the point where people are buying them for parking at home, it is a relatively straightforward matter, which is essentially using your own electricity supply to plug in. It is not a complicated thing to provide, but there is, of course, a large section of the population—both in cities and outside cities, but particularly in cities—which does not

have access to off-street parking, and therefore you have to have a different solution, which is either to do with on-street parking or where they park in car parks, or both. We are busily investigating what the best way is to generalise that kind of availability.

The most immediate concern is a different one, which is that because the range of these vehicles is currently not as great as we would desire, other than the plug-in hybrids, we need to make sure that if you are doing a journey on trunk roads, you have access to sufficient charging points. You may have noticed that there is already a considerable spread of a small number of charging points in motorway service stations. We are now moving towards having a systematic plan for having enough charging in all trunk roads at regular intervals.

However, the technologies here are very relevant. Within the battery sphere, assuming you are not talking about a hydrogen fuel cell, but about something that has to be charged up, with Formula E—which the Government has been promoting, and the production of which Mahindra has invested its R&D in in the UK, which is tremendous, and which is being promoted by UK promoters such as Ecclestone and others—we have been able to use a technology developed partly in this country for induction charging loops under the road. That offers the possibility of a much more efficient charging system, and that, too, needs thorough investigation. There are various technical issues associated with it, but it may be that in due course we can actually have charging going on while cars are moving on the roads. There are some very exciting possibilities here. There is then a whole different set of issues if you move to hydrogen fuel cells, where the mechanism for refuelling is different in principle.

Q333 Chair: A little bit like an electric tram takes its electric from a cable above, you could be driving along and getting your electric from under the road, or something. Is that what you are saying?

Mr Letwin: In principle, that is perfectly possible; it can be done today, but in practice today, there is the difficulty that the inhabitants of the car might not be in good shape if it were happening. That is why Formula E uses induction charging, but only—

Q334 Chair: Their hair might stand on end, might it?

Mr Letwin: At the moment, the driver gets out and it sits on the pod, and it is charged, and the driver gets back in. These may be soluble; I am not the scientist. My job, and those of other Ministers, is to try to get the best possible scientific advice and build a strategy that probably is layered: different technologies at different times, building up to the picture where you get a tipping point, because people can buy the right kind of car at the right kind of price and get the right kind of charging on the right roads related to their own lives. That is what makes it a complicated process. You cannot just write down what first comes into your head; you have to think through the consequences for different kinds of people and different kinds of lives.

Q335 Chair: Rory, just before we finish this one, I think you said that when DEFRA is doing the modelling with admissions and what will happen in our cities, they are not

necessarily taking the manufactured figures of the vehicles. Does DEFRA actually take tests of the amount of vehicles passing and the actual amount of emissions? Is it a theoretical modelling, or is it a practical modelling?

Rory Stewart: For the Euro 1 to Euro 5 engines—in effect, for the moment, the Euro 4 and Euro 5 engines—those are engines that have been out on the road for some time, and we take the real figures on that. That is based on how these things perform on the road. For Euro 6, which was a new kind of engine when we were bringing our plan together, we took a guess—an informed guess but a guess—that we reckoned it would be between 2.7 and three times more than the laboratory figure for the Euro 6 engine, because those were roughly the sorts of discrepancies we were finding for the previous standards of engines, the Euro 4 and Euro 5. Our national model feeds all this stuff in, takes into account how much of the fleet mix is likely to be likely to be the Euro 6 engine, and we have a greater degree of confidence in relation to the Euro 4 and Euro 5 engines than we do for the Euro 6.

Q336 Chair: You are confident that your modelling figures have enough leeway in them to be reasonably accurate.

Rory Stewart: I am confident that we made a good scientific estimate, but we do still need to have enough humility to acknowledge that if the Euro 6 engines turned out to perform significantly differently from our anticipation, we would have to revise our figures.

Q337 Chair: Your modelling would not be right, then.

Rory Stewart: We would have to insert the new figures into the model. The model would be correct, but the data we were inserting into the model would have to change.

Q338 Ms Ritchie: This, gentlemen, is about reducing vehicle miles. It is the same question to both of you, so if I can take Minister Stewart first, what more can Government do, alone or in partnership with local councils, to encourage people to use private vehicles less—for example, by cycling, walking or using public transport?

Rory Stewart: We can do an immense amount. We have done a lot with councils. There is currently a new access scheme, which I referred to, which is about another £580 million that will be made available by the Department for Transport, and that does everything that you can imagine in relation to cycling and walking, particularly. That will range from creating the sort of stuff that you see outside our window, which is Dutch-style cycling superhighways, which some cities introduced, to upgrading existing cycling infrastructure. It will deal, for example, in Oxford, with dangerous roundabouts, making it easier for cyclists to get around. It will involve a training component, particularly aimed at children, to make sure that they can cycle more safely. In cases like Cambridge, it involves creating cycling parking—how can you park 2,000 cycles at a particular railway station?—and we are looking all the time for innovative measures coming from these councils. Part of that fund is also available for people to bid into. The DFT has made available some tens of millions of pounds to encourage people to be innovative, for example in relation to hybrid buses.

Q339 Ms Ritchie: What further support will central Government provide to replace polluting buses with cleaner ones?

Rory Stewart: That is exactly what I just referred to. The Department for Transport has been able to find some money, which I am very pleased about, which is a fund designed exactly to do that: to create more hybrid buses on the road.

Q340 Ms Ritchie: Minister Letwin?

Mr Letwin: I agree with what Rory has just said. I would add two things. One is that these things do not just apply in urban areas, where the air quality consequences are greatest, but also in rural and suburban areas. We are all very conscious that the configurations of settlements and the creation of things like safer routes to school can make a huge difference to patterns of life, particularly in rural and suburban areas, and contribute to the goals you are describing; of course, the establishment of a huge network of cycle-ways around the UK has had a huge impact on patterns of tourism, and so on.

The second thing I would say is that we should not ignore a form of transport that, when I was growing up, we were told was coming to the end of its useful life, but which has turned out to be a fantastically important part of the future. That is the train. The use of the train has hugely expanded, contrary to what was predicted some years back, and the success of our railways in attracting more people to them has been huge and, indeed, the success of the Tube system and other transit systems involving rails in Britain has been hugely important.

Now, of course, we have an enormously large rail investment programme. Sometimes it is completely misunderstood; people think we are investing only in high-speed rail. Important though that is, that is far from the case. There is an enormous rail investment programme in traditional rail, and also some very exciting possibilities carrying forward from Crossrail. As you may be aware, there is another Crossrail project now being conceived, and literally earlier today, purely by coincidence, I was meeting a group of industrialists who were talking about new high-speed Tube lines, in effect, in various parts of the country, which may well be self-financing.

There is a huge thrust, also, to ensure that where people would have done journeys by car, they are able to take those journeys via train, in comfort, at speed, with regular and predictable timetables, and the Government have been using colossal amounts of taxpayers' money and a huge amount of legislation, and other steps, to ensure that that comes about. It is a very, very important part of a modal shift in this country.

Q341 Ms Ritchie: Minister Stewart, concerns have been expressed at local government level that the cost of greening bus fleets will result in higher ticket prices, driving down bus usage. What support can DEFRA provide on that issue specifically?

Rory Stewart: I would have to look at that specific case. I am afraid that my gut instinct is that that sounds like a DFT issue, rather than a DEFRA issue, but I am very happy to look at this specific case.

Ms Ritchie: And you can come back then to the Committee.

Rory Stewart: I am very happy to come back.

Q342 Ms Ritchie: Do you believe that there is scope for the introduction of car-free city centres in Britain?

Rory Stewart: Definitely. It would have to be something that was driven by the local council, with real willingness from local people. There have been campaigners in Oxford, Leeds and York who have been talking about similar things. I will just put a caveat on that: it is not necessary to do that in order to comply with our European Union targets. We can do that without having an effect on people driving private domestic cars, but if a city wanted that kind vision and that kind of future, we would certainly be very excited to work alongside them, and do all we can to promote that model. Such a model could be really exciting, particularly in an historic centre, particularly in a centre that was tightly packed enough for it to make practical sense to exclude vehicles. I would love to work on something like that.

Q343 Ms Ritchie: What work, if any, are the Government doing to utilise new technologies to facilitate the reduction of vehicle miles, such as using online technologies to make ride shares safer and more reliable?

Rory Stewart: All of this is stuff that we are hoping to encourage—and this is a Department for Transport issue—through something called the new access fund for sustainable travel. That is £580 million, and the Department for Transport is looking for proposals of exactly this sort to bid into that fund, and we would be very excited to work with local councils that wanted to do that.

Q344 David Simpson: This question is on agriculture, Mr Stewart. How do you ensure that Government policies for agriculture take into account the health of the environment going forward?

Rory Stewart: That is a very important question. We have to get the balance right. There are a series of ways in which there are trade-offs. One obvious one that you will be aware of, Mr Simpson, is challenges around water quality, particularly in nitrate-vulnerable zones. There can be challenges around air quality and flood risk management. It is about accepting that we care deeply about agriculture, that it is a very important part of our economy, essential to our food security, and a very important part of our culture and our landscape, while at the same time understanding that there are cases where we have to raise environmental issues that may cause problems for farming. However, that is true for other industries, too—if you are in the mineral extractive industry, or heavy industry, you will also face the same issues, in relation to water quality and air quality particularly.

Q345 David Simpson: Is more research needed into this, and if there is, who pays for it? Is it the Government or the farmer?

Rory Stewart: We are doing quite a lot of research into this. The problem does not tend to be a question around the evidence base. Let us take one example of something that comes up a lot in agriculture, which is water quality. We are now in a position to be able to disaggregate issues of water quality into literally thousands of different components under about 40 different headings, ranging all the way from poisons in the water to issues of flow and velocity of water. The problem is not primarily evidence, but in the evidence base, most of that research has tended to be driven by either Defra, engineers, universities, or the European Union itself.

Q346 David Simpson: The farming community has gone through a very difficult time, and are still going through it. Do you think it would be unfair to ask them to pay for it? I have put you on the spot now.

Rory Stewart: I would have to look at the specific issues, but if you take the question of water quality, it is perfectly fair that DEFRA pays for the water quality analysis, rather than the farmer.

Q347 Chair: This might be a question for Mr Letwin, because it is not really DEFRA; it is more taxation. If you take farming, they put AdBlue in the new tractors, and that lowers the emissions, but there are a lot of old tractors out there still being used in farming. Is there an argument from a capital taxation standpoint to actually encourage farmers to move into the newer-type tractor? Has that been thought about? I know the rural areas are not necessarily the places where there are high concentrations of nitric oxide, but it would be good for lowering our overall emissions.

Mr Letwin: You would need to talk to the Treasury about that, not to me.

Q348 Chair: Can I not encourage you?

Mr Letwin: It is important to recognise that whereas carbon is a global concern—it does not matter much where on Earth the carbon is produced; it matters that we limit carbon emissions, and indeed greenhouse gas emissions as a totality—NOx is a different kind of issue. It is the concentrations in particular locations that matter, so it is important that the tools we adopt to restrict carbon emission are general, and ideally global, hence the international agreements, and certainly national in scale and scope. Whereas with air quality issues, we need to focus on trying to make sure that, given the technological background, we reduce emissions and improve air quality where it matters to do that for human health, not just generally.

Q349 Chair: So what you are saying is that we should concentrate our efforts on those areas with the highest NOx emissions.

Mr Letwin: Exactly, so far as NOx is concerned, whereas with carbon we have to concern ourselves with emissions.

Q350 Chair: Mr Stewart, we have had evidence from the Institute of Air Quality Management arguing that the EU ammonium reduction targets for 2030 are not sufficiently ambitious; in contrast, the NFU considered the limits to be at the limit of technical feasibility. What is your view on the matter?

Rory Stewart: My view is that we have got to about the right place. I am pleased with where the United Kingdom got with that, and that is because our agriculture is a little bit different from modern European agriculture. One of the challenges for the ammonia and methane targets that were being proposed by other member states is that they were proposed on the assumption that we would be keeping the majority of our livestock indoors. That is one problem.

The second problem is that they were proposed on the assumption that our dairy herd would not increase. If we wanted to grow our dairy industry by another 500,000 cows, as seems perfectly legitimate, that would pose a serious challenge. Something that matters to me, partly because I come from Cumbria, where we have a lot of New Zealand grass-fed systems, is that there is a great deal to be said for having cows outdoors. It is not the only way to do it, but that is a wonderful, free, environmentally-friendly resource you have there: rain and grass. You are not having to put in a great deal of artificial inputs. You are not very dependent on oil to keep it going. We are producing very high quality milk, and it would be a great pity if we imposed national emissions ceilings targets that forced every farmer to keep their dairy herds indoors, rather than being able to exploit the great benefits of fresh grass.

Q351 Chair: What is DEFRA doing to encourage farmers to have their slurry stores covered, making sure they can store their manure so that they can spread them at the best time? I know biodigesters and energy is for the Energy Committee, not necessarily for DEFRA, but what are we doing to encourage all those things?

Rory Stewart: We are doing an enormous amount. As you know, Chair, we have increasingly clear views on this. In relation to nitrate vulnerables, as you are aware, we have particular seasons where you can spread the slurry. That is a difficult balance; farmers can get a little bit agitated, as you can imagine, if they feel they have a good, dry moment and they are being prevented from spreading because we happen to have a closed season. Of course, in relation to spreading slurry, you have to predict weather for the next three weeks ahead, which we cannot do, and therefore we have to set these closed seasons in place.

We have made that, we think, the right balance between the flexibility of farmers and meeting our responsibilities toward nitrogen going into rivers. In relation to slurry tanks, again, we are increasing amounts of training, guidance, NE staff, EA staff, and increasingly people like the rivers trusts—we have 50 rivers trusts around the country—are engaging directly with farmers on these issues.

Q352 Chair: It is always good to encourage farmers in the pocket, so they are not spending so much. It always appeals; I speak as a farmer myself. Seriously, if you have less ammonium nitrate, or you are using less ammonium nitrate, you can use your slurries more. There is a very good argument for making sure that not only less pollution goes into the air,

but that it is also much more economic to grow your crop or your grass. Do we need to give more advice on that?

Rory Stewart: If we are not communicating that, we definitely should do more on that, Chair. We can push to continue to do that. There are some very good examples going on around the country of different ways of both reducing production and encouraging reuse. If you were to go to Newton Rigg, for example, at the moment, they are coming up with fantastic methods, both for generating energy and creating green bedding for dairy cows off the back of slurry. If you are coming across examples where farmers are not getting that information, or Natural England is not communicating it well enough, we can definitely work to do that.

Q353 Chris Davies: With the rate of reductions from the agricultural sector levelling off, farmers could double their share of UK greenhouse gas emissions by 2050. Is it time for the Government to set out a clear policy direction for reducing greenhouse gas emissions from agriculture?

Rory Stewart: The Government's responsibility is to make sure that we are compliant with our overall ceilings. At the moment, it is true: the emissions that can potentially come from agriculture will go up, but agriculture is still a relatively small amount of the overall emissions. I believe that we have hit the right balance, particularly in the current negotiations on the National Emission Ceilings Directive; that we have the right kind of figures, where the UK will be able to hold its head up, and we have had agreement from other member states on the deal that we have reached. I do not think we need to do so in a way that particularly punishes farmers.

Q354 Ms Ritchie: Why was the issue of greenhouse gas reduction not given more prominence in DEFRA's 25-year plan for food and farming?

Rory Stewart: The 25-year plan for food and farming is, essentially, a plan about exports; about driving British food abroad. It is very much focused on issues like that, exports and apprenticeships; it is not a full environmental plan. That will come within our 25-year environment plan, and I would expect that issues related to agriculture that have an environmental component, such as the one you have raised, would be covered within the 25-year environment plan, rather than within the food and farming plan.

Q355 Ms Ritchie: What assistance can be given to smaller farmers with smaller farms to reduce greenhouse gases? As my colleague, Mr Simpson, has already said, farmers and farming have faced very difficult economic and financial circumstances, and adding this pressure on them can cause some difficulties.

Rory Stewart: The answer is that the biggest amount of flexible additional funding, in addition to the Basic Payment Scheme, is going to come through our countryside stewardship scheme, and tackling emissions of carbon dioxide would come through the countryside stewardship scheme—not directly, but indirectly; there are, for example, grants available for peatland restoration, and there are grants available for woodland. All these things contribute to carbon capture. There are also grants available for farming

practices which would reduce the carbon emissions, but the basic instrument we have, Ms Ritchie, to operate there, is the countryside stewardship scheme through pillar 2.

Q356 Chair: I am going to go on to methane gas now. I agree with you: it is great to have the animals grazing outside, and I want to see more cattle and sheep doing so. However, as they do and they ruminate and they produce good protein from low-quality forage sometimes, they also give off quite a lot of methane gas. What are we going to do about that?

Rory Stewart: It is a really good question. Sometimes, we need to be honest with the public about the fact that we are having to balance difficult things. We are trying to balance methane emissions, which, of course, are a real problem for global warming; we are trying to balance the viability of small farms; we are trying to balance a landscape that we love—in my particular area, we are getting 40 million visitors a year coming up to the Lake District, and a lot of them are coming up to see exactly the sheep-grazed pastures that we have taken pride in since Wordsworth, and they like seeing lambs in the field—and, finally, we have animal welfare issues. People disagree on how this works, but there certainly are a lot of people in our country who would prefer to see animals outside. We have to balance these things out.

The answer may be through some of the experiments that are happening in places like Japan, where they appear to be coming up with cunning equivalents of the kinds of pills that you or I, Chair, might take when our tummies are not functioning for the animals, to make them process these things better. There are breeds of animals that emit less methane, but I would be very, very sad if we ended up with a blanket policy that prevented us from keeping livestock outdoors.

Q357 Chair: I know the New Zealanders are doing quite a lot of work on the types of grasses and the forage. At one time, the previous Labour Government was going to introduce a methane gas tax in New Zealand. That was nicknamed the "fart tax", as you can imagine, but it did not actually happen. They have done quite a lot of work on growing different types of grasses. You are quite right; the better the digestion within the animal, the less methane gas it emits.

Rory Stewart: You can reduce the amount of emissions by 50% or 60% if you get the right combination of inputs and other things.

Q358 Chair: Are we doing enough to guide farmers, if they were re-seeding their pastures, to put the type of grass down so that, when the sheep and the cattle grazed it, they would give off less methane gas?

Rory Stewart: Good questions, Chair. That is more Mr Eustice's bit than mine, but I am very happy to follow up with him and write back to you on that.

Q359 Chair: While you are here, can I beg your indulgence and ask you a couple of questions on flooding? We are about to do a major inquiry on flooding. I think we are all largely on the same page on this: there is quite a lot to do with land management, as you have

been talking about, Mr Stewart, but it is also about how we compensate those farmers and landowners for not just a loss of profit, but also provide an income for managing that land in a slightly different way, perhaps planting trees or re-wetting. At the moment, there is not necessarily enough incentive, and some of the schemes of tree planting might mean there is not enough income for the farmers to involve themselves in those schemes. Are we looking beyond the stewardship schemes, or increasing the stewardship schemes? It is much better to use a carrot, rather than a stick.

Rory Stewart: Chair, on behalf of myself and the Chancellor, we would be extremely grateful to give you the answers on this now, rather than coming back in front of you again on the flooding.

Chair: You will have to come back. You are not going to get away that easily, but please continue.

Rory Stewart: In which case, I will give you a shorter answer, and a longer answer when you get us back. You are of course right. Countryside stewardship will be able to do some of it; it will not be able to do all of it. Countryside stewardship would be a mechanism that we would use if we were doing anything from planting up-stream to what we call "offline reservoirs"—in other words, pasture that will be grazed 11 months a year, but could, in an exceptional event, be flooded for one month a year—right the way through down to letting rivers meander or restoring blanket bog. We can do some of these things through countryside stewardship, but you are absolutely right: those schemes tend to be 10-year or 15-year schemes at most. If you were to plant woodland there, and the idea was for those trees to remain in perpetuity for 50 or 100 years, there would be a serious challenge.

We would have to combine that with the money we have within the Environment Agency for flood defences, and money, potentially, from the water companies for water quality. If you put those together, we have a fair degree of money, and if we can occasionally combine that with money from LEPs and from local authorities, then we are beginning to get a package together. Two things are key: first, having the plan from the top of the catchment to the bottom; and secondly, understanding that countryside stewardship can play an important role in that—and, indeed, we are going to be adjusting countryside stewardship in specific areas to make it a bit easier to do this—but it will not provide the total answer. But if, Chair, you are dragging the two of us back again for a long session, that will be the end of my answer.

Q360 Chair: We would not like you to escape too easily yet. Seriously, you have areas upstream; there is probably a need to slow down the water and absorb more onto the land. Then, if you have rivers that are heading to the sea, it is probably a good idea to dredge some of those and get the water out faster, as long as it is not going to get into another town to flood that. We had the situation in Somerset where the Prime Minister quite rightly came down and those rivers were dredged, but I am very suspicious that the Environment Agency regroup after a little while, and decide that there is not going to be any more dredging. I seek those reassurances. I see that Mr Letwin is shaking his head there.

Rory Stewart: The Chancellor has firm views; I will give 30 seconds, and then hand over. Of course, you are right: we need a combination of the two. In very blunt terms, if I am

the town at the bottom of the catchment and you are the top of the catchment, if you simply dredge the whole lot, the water will just get down to me eight hours faster. If you simply dam the whole lot, the water gets down to me eight hours slower, but it is still the same volume of water arriving. Effectively, what we need to do is spread that out; in really blunt terms, you need to dredge half of it and slow up half of it, in order to make sure the amount of water hitting me—in this case, Carlisle or Appleby—is smoothed out over that period, rather than all hitting at the same time.

We certainly do dredging. We certainly need to look at more sustainable ways of doing that, whether it is working with drainage boards or with farmers to make that easier. For certain kinds of land, it makes a lot of difference: Somerset would be a good example. In big, steep, flashy catchments like the Lake District and the Peak District, there would be perhaps less difference on the upper catchments. It certainly makes a big difference under bridges, where if you do not dredge under the bridge, you are going to have a dam effect, but on that, I am going to hand over to the Chancellor.

Q361 Chair: Before I bring Mr Letwin in, if you look at the pattern of funding on floods, you will see that in 2005 and 2006, there was low funding. We then had quite a lot of floods in 2007 and 2008, and that increases. The weather then got a bit drier, and it seemed to fall off the edge, and then the same happened a bit with the coalition Government: we were fairly low to start with, and then we had the floods and it rises. Is there not a need to have a long-term plan of flooding with proper funding, and enough funding? I know we need partnership funding; I know all the things we need to do, but we need to have a plan, and I am not quite convinced we have, necessarily. I am sure, Mr Letwin, you can reassure me on these matters.

Mr Letwin: I will try to reassure you now, briefly, but I am conscious that you are going to have us back to talk about these things in awesome detail.

Ms Ritchie: Do not let that stop you.

Chair: Yes, do not let that stop you.

Mr Letwin: We are currently engaged in two parallel but very connected exercises, which are systematic. One is the 25-year environment plan that Rory was just describing. A large part, though by no means the whole, of this has to do with this unified approach to catchment management, from source to sea, which has the ambition—while producing a whole series of ecological spin-off benefits—of slowing the cycle, and then dealing better with the water at the bottom end.

We can go into much more detail when we come back to you about how that is being executed: the pilot projects; the appointment of new catchment directors; the way that the Environment Agency, Natural England and Defra are being brought together; and the way that we are working with a group of local authorities, NGOs, farmers and others to create a unified, catchment-based method that will stand the test of time, become the norm, and remove us from these absurd pro-dredging/anti-dredging dichotomies that are dreamt up by the tabloids. You need dredging in some places and not others, as Rory was saying.

When Liz Truss and I were wandering around in boots in the Christmas to New Year period with James Bevan, the very excellent Chief Executive of the Environment Agency, at one point he said to me, "I just want to point out that the Environment Agency has changed its ideology. We are not any longer anti-dredging; we are pro-dredging where it makes sense, and not where it does not." That is a profound and welcome shift, and, incidentally, paralleled by Natural England. I have no doubt you will interview them; you will find that the Chairman and Chief Executive share that. That is half of the process: the natural environment, 25-year plan and the rural catchment parts of that.

The other half is a systematic review of, if you like, the harder side of flood defence, in the sense of hard objects rather than natural country, where Liz and Rory are deeply involved, along with a range of others: the Government Chief Scientist, Natural England, the Environment Agency, and a range of other Departments, including DECC, DFT, DCMS, and so on and so forth. We are trying to avoid precisely the problem that you were describing, and look at this as a long-term proposition. We have already established a £2.3 billion investment programme for the flood defences, but we are looking much beyond that. We are looking right out into the future, and also much more immediately than that: what do we need to do right now to ensure that in the reasonable worst-case scenario, we nevertheless assure our people that their telecoms are going to work, their electricity is going to stay on, their water treatment plants will work, and so on?

What we have been discovering is that things that were said to be likely to occur only one year in 100, or one year in 1,000, are occurring with alarming frequency. We have given up on the old view that you could relax when something was only going to happen with frequency X, and instead asked ourselves, "If things are significantly worse than they were this last year, or a couple of years before that—which they might be—are we properly defended with the immediate and temporary defences that we could marshal pretty easily to make sure that the lights do not go off for 5,000 people, and telecom does not stop?" as it did in Leeds, and so on. As a very short-term, very immediate thing, we are hoping and intending to produce a report on that by the summer and then to implement the findings of that between the summer and the winter, so that next winter, we are better-protected in that respect.

As the second stream, we are looking at the core cities and comparing them with the level of protection in London to try to see what we need to do within and beyond our £2.3 billion programme to find means of raising the defence levels in those cities so that they parallel that for London. Third, which interacts with the second, we are looking at the question, "How far can we move beyond the model"—which has too frequently been the case in the UK, and which they have moved beyond in the Netherlands and parts of America—"when you are not talking about the river catchments or temporary defence, the natural default is to go and build a big earth bund of some kind, and treat that as a cost". That may have benefits, not only in terms of preventing flooding under many circumstances but also enabling further housing to be built, or something like that, but generally it has been treated as a cost.

In the Netherlands and in parts of America, people are beginning to realise that if one conceives these things more imaginatively, it is often possible to combine that with revenue and capital gain. It is possible to construct things so that, where you would have a nasty wall or bund, you actually end up with a nice marina, some hotels, and some extra

houses, and your flood defence becomes a feature that the local community is brought into and wants to have, rather than one they resist, and that pays for itself, rather than having to be paid for. There has been a lazy assumption over the last 30 or 40 years that this is a cost; therefore, you have to meet the cost; therefore, you have to get tax expenditure, and you will never get a return. We have to challenge that assumption, and in many cases, I think we will find we can get returns.

That may enable us to do things, both for the core cities and for rural areas, and indeed other towns and cities around Britain, that are highly advantageous from every point of view. If you combine that with the natural capital concern, moving on a different timescale, we are beginning to see the evolution of a 20 or 30-year strategy for this country in addressing what is clearly going to be, over that time and probably beyond that, a very serious issue, in a way that the country can afford and that enhances things and produces biodiversity advantages and economic advantages, rather than just being an enormous millstone around all of our necks that we have to deal with somehow. I am very excited about all of this, but it is a big work in progress, and I am sure you will, unfortunately, want to get us to come and address you as we progress through.

Chair: We are going to try and get to the Netherlands; we are going to try to do quite a big inquiry, so we are looking forward to that.

Q362 Ms Ritchie: Minister Letwin, we understand that the terms of reference for the National Flood Resilience Review is for England only, but what contact have you had with the devolved administrations, bearing in mind I represent a constituency in Northern Ireland, and that the large storms swept over the northern part of the UK and left devastation in terms of floods and other damaged property? Water does not recognise borders, so have you had consultation with the devolved administrations, and if so, what was the nature? If not, will you be?

Mr Letwin: We have thought about this. This is a devolved matter in the devolved administrations, so it would be an impertinence for us to extend the scope of what we do beyond England. However, our intention is that once we have done the analytical work—the first tranche of which is the question of mapping reasonable worst cases and looking at how they affect this wide range of infrastructure, which should be complete by the end of April, or well underway by then—my intention is that we should share that with the devolved administrations.

We should explain to them exactly what we are up to, and make the offer—but it is only an offer; it is not something we would in any way wish to impose—that, whatever they want to see of what we are doing, we will make available to them; whatever discussions they want to have with our technical experts and our modellers, we will make available to them; and whatever use they might want to make of models and methods that we are using, we will make freely available to them. Basically, we will do this on a totally co-operative basis, but without in any way determining how they decide to use any of this, because that is up to them and not us.

Jim Fitzpatrick: I just wanted to take the opportunity to appreciate Rory's offer to engage over the cruise terminal, with two very brief observations. Accepting the comment that 0.0006% is the contribution from shipping to emissions overall, if you are living next to the Thames, it could be significantly more. The recent presentation by the Port of London

Authority gave the vision that, whereas most people think that the glory days of the Thames were between the 20s and the 50s, in actual fact the Thames is doing more tonnage now than it ever was in those decades.

With the increase in using it for construction traffic—the Thames Tideway Tunnel is a classic example; Canary Wharf and the Olympic sites are another—the increased use of the Thames for commuter traffic, which is growing all the time, and tourism with the cruise terminal, which will represent a step change, then the contribution is only going to increase. The time to really deal with that, I would respectfully suggest, is now, and then we can prevent the impact increasing in the future. I am grateful for the opportunity to put that on record, and I look forward to the chance to talk more fully in due course, Chair.

Q363 Chris Davies: I had two questions, if I may. The first goes to Minister Letwin. You very kindly say that you would allow the devolved nations and Governments to see the results of what you have looked into, but realistically, in constituencies like mine, for example—in Brecon and Radnorshire—we have a great catchment on our hills, and vast open hills, but yet the water tends to run down into Herefordshire and Shropshire. It is not just a case of making your findings available; it is actually working with those devolved nations to make sure that we can solve the problems of flooding. In Wales, it is going to take the natural resources of Wales to work with you to get the results that we want.

Mr Letwin: May I just respond to that first? I may have engendered a misunderstanding. I thought that the question about the devolved administrations was about the second of the two reviews, which is the hard items, the defence works, as opposed to natural capital, where we will make available everything, but it is entirely up to the devolved administrations. If you are referring, instead, to river catchment management, manifestly river catchments do not respect national boundaries, and therefore, under the 25-year plan, there will certainly have to be co-operative working between the devolved administrations and Defra and its agencies. I did not mean in any way to suggest that was not the case.

Q364 Chris Davies: Going back to the Chair's point earlier, if we can make sure that farmers are compensated so they feel they are not missing out, I am sure we will have a lot more forestry and woodland, and more uptake in the uplands. Can I ask you to think about something while you are formulating your plans, as well? We are looking at timber coming in to help us stop the flooding, or slow down the flooding. To have a fracking application nowadays, if one is going down that route, it takes 16 weeks to go through a local authority. If you are looking to plant a forest, it takes 16 months to get planning through. We really need to look at that, and go through all the conservation projects and all the rest of it. It is something that we need to really tackle.

Rory Stewart: I agree, and that is why we have just made £1 million available to help people do the planning application, work this through, and work out what on earth is going wrong, but you are right: that is far too long. We need to speed it up, and that is exactly what this fund is designed to do.

Chair: Thank you both very much. We have had a very interesting afternoon; we have gone on quite a long journey, one way or another. It has been very good evidence; thank you, and we very much appreciate you coming, but do not think you are not coming back again for floods, because you will be, all being well. Thank you very much.