



Environmental Audit Committee

Oral evidence: [HS2 and the Environment](#), HC 1076

Wednesday 26 March 2014

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Written evidence from witnesses:

— [Department for Transport](#)

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Members present: Joan Walley (Chair), Peter Aldous, Martin Caton, Zac Goldsmith, Mike Kane, Mark Lazarowicz, Caroline Nokes, Dr Matthew Offord, Caroline Spelman, Dr Alan Whitehead, Simon Wright.

Questions 99–168

Witnesses: **Robert Goodwill MP**, Parliamentary Under-Secretary of State, Department for Transport, **Peter Miller**, Head of Environment and Planning, HS2 Ltd, **Sara Eppel**, Head of the Rural Communities Policy Unit, Defra, **Dave Buttery**, Deputy Director of High Speed Rail Legislation, Department for Transport, gave evidence.

Q99 Chair: I would like to give a very warm welcome to you, Minister, which for the Environmental Audit Select Committee is the second of our two part inquiry into environmental aspects of High Speed 2. To start off with, you want to introduce your colleagues and I understand that you wish to make a very brief statement to the Committee, which we will be very happy to receive.

Robert Goodwill: Yes. I am joined by Peter Miller, David Buttery and Sara Eppel who is from DEFRA, to assist me.

Chair: You are very welcome.

Robert Goodwill: I am Robert Goodwill the Parliamentary Under-Secretary of State with responsibility for the first phase of HS2 from London to Birmingham.

In opening statement, Madam Chairman, I would like to thank the Committee for undertaking this inquiry. HS2 is a project that is vital for the country's economic future and growth, and we all recognise that constructing a project of this scale is clearly not possible without some environmental impacts. However, by planning this project sensibly we have sought to reduce adverse environment effects as far as possible.

Environmental mitigation is something that has been considered from the very beginning of the project, meaning that reducing environmental effects is hardwired into the railway and it is not just something that has been bolted on at the end.

From a personal perspective, having a degree level qualification in agriculture as well as a lifetime's experience of rural land management, I know that I am well placed to understand some of the environmental and ecological issues concerning HS2. Having spent five years on the Environment Committee of the European Parliament, I also understand our legal obligations under the various applicable directives, so I look forward to the Committee's questions.

Q100 Chair: Thank you very much indeed for that and for the brevity as well. It is exactly those environmental aspects of it that we want to try to home in on in our session this afternoon. Perhaps our starting point is that we are going to be having a Hybrid Bill and we are very clear that Strategic Environmental Assessments and Environmental Impact Assessments are not legally required under the House's Standing Orders and the Hybrid Bill procedure. Therefore, the question to ask is: how much of the work that has been done on the Environmental Statement covers what would have been required had the House been in the position to carry out to the letter of the law the Strategic Environmental Impact Assessments that would normally be required on a scheme of this kind?

Robert Goodwill: Thank you. Perhaps if I could go back one stage further because obviously we carried out a consultation on the initial route and received a large number of representations from not only local authorities and individuals but also colleagues here from the House of Commons. We responded to those in a very positive way, and, indeed, one of the criticisms that is sometimes made against us is about the cost of the project. I make no excuses, whatsoever, for investing in tunnelling, in cuttings and in other environmental mitigation that does lessen the impact of the project, not only on the environment and the ecological situation down the line of route but also in terms of local people living nearby. I am not sure whether that is an environmental issue as well, but people do not like looking at a railway and they consider it might have an effect on the value of their house. So I think there are two separate aspects there. Then, as we moved on to the next stage obviously we produced a very, very comprehensive environmental report, which I think will be the subject of a number of petitions.

In terms of how the Committee deals with this when it gets into the Hybrid Bill Committee, for very good reasons that is not something that I as a Minister could get involved with and it is up to the Committee themselves to order their business. I think the challenge facing them would be to distinguish between some of the petitions that will be laid possibly for vexatious reasons, for reasons of trying to gum up the process, trying to delay the project, and other petitions that I think would have very real environmental benefits to the project and should be considered in as much detail as possible. I think the Committee do face a big challenge in trying to separate the wheat from the chaff to make sure that they do not get gummed up by petitions that are there purely to gum up the process—in the same way we have seen a number of legal challenges and judicial reviews that I suspect were there to gum up the process—and the genuine type of considerations that the Committee will need to consider and then bring forward their recommendations at the end of the process.

Q101 Chair: That is precisely the area this Select Committee is wishing to look at, particularly as conscious as we are of the duties that the Liaison Committee puts on us to make sure that the work of the House is linked to the legislative policy-making. Going back to what you just said, you talked about the environment report and I assume by that you meant the Environment Statement.

Robert Goodwill: Yes.

Q102 Chair: I am still not exactly clear how the work that is included in that has differentiated between what would be expected of a strategic nature, i.e. should the route be here or should it be there? Aspects of that strategic nature as opposed to when you start to dig down on the very specific environmental impacts, which are two different things.

Peter Miller: What is important to understand is the pre-Environmental Statement work that was carried out from 2009. That work was an Appraisal of Sustainability. The project looked at a large number of route options, all sorts of different permutations of route alignment between London and the West Midlands and the connection on to the West Coast Main Line further north. Through 2009 and 2010 our approach to the environment, the approach that was embedded into our thinking and the decision-making for the route optioneering, that was considered through the Appraisal of Sustainability process. You can imagine that we went at this from a blue sky's thinking perspective. We had a long list of options and we applied a variety of criteria, environment being one of those broad criteria to an appraisal process. Through time we narrowed options to determine a route. It was certainly a rounded approach to determine a number of feasible route options, and then onwards from that to determine a preferred route option. That is what we consulted on in 2011.

The Appraisal of Sustainability process that we prepared—and we applied a lot of environmental factors, all the sorts of things that have come forward as issues of concern to this inquiry—as we narrowed options we applied a greater level of criteria, in fact, to make it more difficult to make decisions about those route options that we were narrowing. That Appraisal of Sustainability process took into account the Department's web TEG analysis, and that is partly wrapped up with the economic analysis for the project but includes environmental matters. It took cognisance of the SEA Directive and the sort of things that you would see through SEA. It was also thinking forward about the sorts of environmental effects that you might see through a forthcoming Environmental Impact Assessment.

Q103 Chair: Two points stemming on from that, if I may? The list of things that you said that you looked at, where environment was included as one of them, is not quite the same thing as having a Strategic Environmental Assessment where you look at it from the perspective of the environment in its totality, is it?

Peter Miller: The way we came about it we were looking at it sub-regionally, I suppose. My view on that is the large number of route options took into account a good number of county authorities to join up the two urban areas. In my view the coverage of the Appraisal of Sustainability was comprehensive and what we were looking at were the range of sustainability issues that you would otherwise see through SEA, albeit that that was not through an SEA process itself. It wasn't leading towards a plan or a programme, in the sense that a local development plan or a programme would come forward that you would see ordinarily through SEA.

Q104 Chair: Just one further question on this. Given the Government statement this week, in response to the Higgins report, made the two issues, one about Euston station and one about the link with High Speed 1. It also put forward the idea that the linked crew would go forward more quickly than had previously been considered. How does that latter change, in terms of the connectivity between High Speed 2 first phase and High Speed 2 second phase, fit in with this wider Environmental Strategic Assessment?

Robert Goodwill: If I just come on to that briefly. In terms of the Crewe line being considered earlier we are still considering the Higgins proposals. It makes no difference to the current Hybrid Bill proposal, which covers the first phase, but there is no doubt that pursuing the link to Crewe more quickly, and also putting in a hub station in Crewe, means that there will be much better connectivity with the existing classic network and will allow much more availability of the High Speed network to people coming in from places such as North Wales or Liverpool.

In terms of the Euston connection to High Speed 1 and High Speed 2, although we did have a lot of representations from people in Camden who were concerned about the impact that that may have, not least the impact in terms of existing services and existing freight paths through that particular very congested piece of railway. The other consideration was in terms of the market for trains from Leeds or Manchester through to the continent, and also complications in connection with the customs and security implications. There was even a suggestion made that you would have to get all the passengers off at Euston before you re-boarded them because of the need to have proper security checks. The argument for that was quite an easy one to take on board. In fact, the Secretary of State immediately responded to that.

Q105 Chair: If I can pursue that a little bit more and look at the routes that go forward from where HS2 phase 1 ends to HS2 phase 2. I have to declare a constituency interest here because I do know that there is an alternative proposal being put forward that relates to a different route to Crewe. Leaving that aside, where is the Strategic Environmental Assessment of where the different routes could be before they have been narrowed down into what is then within the confines of the principles of the Bill?

Robert Goodwill: Before I bring in Mr Miller, I am very well aware of the case that is made by Stoke and the very well prepared dossier that they have presented to make that case. That is why I made it clear that, while we are looking at the Crewe option, no decision has been made on that. Indeed, this has to be part of the second phase. We cannot suddenly change the whole basis of the Phase 1 Hybrid Bill and the parliamentary process by trying to tack that on at this stage, so I think the people in Stoke can be reassured that we have not made any decisions on that yet. I will pass on to Mr Miller in terms of the environmental question.

Q106 Chair: Yes. My question was about the Strategic Environmental Assessment obviously. Mr Miller?

Peter Miller: There are two aspects. Firstly, on the route to Crewe, at the moment on Phase 2 we have been undertaking a consultation on the Appraisal of Sustainability work, the route optioneering and the preferred route options that we have so far determined. This is obviously a departure but I would reassure this Committee, in the sense that the information that would have to be brought forward, through an Environmental Impact Assessment process, would have to bring forward what were the main alternatives that were considered and the environmental reasons why this particular option was to be

pursued. That would have to be rightly put forward and fairly heard. You will have seen for the Phase 1 Hybrid Bill that there is an Environmental Statement consultation that I think has just drawn to a close. That is a parliamentary consultation and that gives everyone the opportunity to come forward on those plans. So there is an Appraisal of Sustainability and the EIA process would have to take all of this into account.

For the potential changes to the High Speed 1 and High Speed 2 connection, there is obviously a policy point around what actually happens with the Hybrid Bill. I am not entirely sure about what actually happens with the Hybrid Bill in these particular circumstances.

Chair: Is anybody?

Robert Goodwill: In terms of the Environmental Impact Assessment, we would have to review that de-scoping of the scheme and think about what the implications are. On the face of it, you would think that the environmental effects would reduce to some considerable degree. For example, it would take out a length of tunnel and that is where there is a lot of embedded carbon in the construction of concrete and use of materials. We would have to then think about the balance of that and what was the replacement for the HS1/HS2 connection. Again, that would come into the alternatives realm, what we would consider, and then ultimately we would have to report the environmental effect.

Q107 Mrs Spelman: One of the environmental benefits of high speed rail is to reduce the volume of short haul flights. The announcement of dropping the High Speed 2 to High Speed 1 link, therefore, makes it more difficult for passengers flying into Birmingham Airport—which will be 31 minutes from Euston on present estimations—to be able to get a through train to the continent to make those carbon savings. Did the original Environmental Statement take account of the potential for saving carbon from through trains from Birmingham Airport?

Peter Miller: Yes. I would have to check back through on the Economic Case because that is how we derive the assumptions for the assessment.

Dave Buttery: In both the ES and the Economic Case there is no assumption about carbon savings for international aviation. The only carbon savings that have gone on in terms of aviation are about domestic aviation savings, so the removal of the HS2/HS1 link does not affect the figures in the ES or the figures in the Economic Case. Not to ignore the fact that, yes, that journey would be easier if there were potential additional carbon savings that are not currently captured.

Q108 Chair: Let me go back to a previous part of my initial questioning. That was about how the work that was done in the earlier consultations influenced the proposals that you came up with. The Environmental Statement that you consulted on in November, does say that the responses you received did influence the drafting? It would be very helpful to our Select Committee to have an indication of where that consultation did make a difference and what changes there were as a result of it.

Peter Miller: It is important that this Committee understands that consultation and engagement has been a feature of this project from the outset. The work that we undertook through the Appraisal of Sustainability amounted to about 14 changes, from memory. Those sorts of changes featured in the decisions and next steps document in 2012.

Q109 Chair: But in the final Environmental Statement as well, what changes did you make in the final Environmental Statement as a result of that sounding that you did initially?

Peter Miller: There were two major changes; the Northolt corridor tunnel was extended, the tunnel going out from London, and the extent of the tunnel in Birmingham. They were the two major changes.

Q110 Chair: Which of those were you considering but ruled out? Sorry, not those two examples but were there other things that came up that required mitigation, which you thought, “No, we are not going to go along with that”?

Peter Miller: Yes, in the Environmental Statement. The community forum types of events that took place throughout the time of the preparation of the ES. We had a large number of schemes and ideas come forward from local communities, and those ideas are set out in the Environmental Statement and the reasons why certain things were not considered. I think that people would understand through the mitigation plan, which then featured in the final Environmental Statement from the draft Environmental Statement consultation that we carried out, that people would understand what we put in by way of noise barriers, earth bunding, the planting for visual mitigation and that sort of thing. All of that would have featured and that was all part of that debate.

Q111 Chair: Those are all very specific things on the impact, isn’t it? It is not the strategic side of things.

Peter Miller: On the strategic side of things that was largely dealt with through the Appraisal of Sustainability, in the way that we were narrowing down the route options and how we considered the environmental and sustainability issues at that stage, where we decided on the positioning of the route in the environment. Even at that stage there were a range of changes that were incorporated. There was a great deal of work that was undertaken to move the alignment laterally away from communities, for example. There was a lot more tunnelling put into the design. There were green tunnels put in and that sort of thing. Strategically at that sort of level I think that you are talking about, the SEA, that is what was being carried out at the time.

Q112 Chair: Just finally from me now, given what we were saying earlier on about Euston St Pancras and about the Euston station redevelopment, after the Higgins review, can I ask in the light of the Environmental Statement, is it going to be revised to reflect all of that? I want to check that you are not asking the House to approve HS2 on the basis of partial Environmental Impact Assessments and information.

Peter Miller: All of those changes will have to be reviewed and—

Q113 Chair: Reviewed by whom?

Peter Miller: Reviewed by the project and where there are changes we will have to decide—

Chair: When you say “reviewed by the project” are you talking there specifically about the environmental aspects of it?

Peter Miller: Yes.

Chair: Mr Buttery?

Dave Buttery: The process for making changes to the project during the parliamentary process is set out in Standing Orders. If we come forward with a different Euston proposal, and that leads to a different environmental effect in that area, we will have to provide what is called the supplementary environmental information. That will then be subject to a consultation of a minimum of 42 days, in the same way as the ES consultation was tackled.

Q114 Chair: That will be outside the scope of the Hybrid Bill will it, prior to the Hybrid Bill?

Dave Buttery: Once we have decided that we want to make an amendment we will table what is called an additional provision, so that there will be a motion in the House to agree that this additional provision can be made. As part of that process we will provide essentially the ES for the change. That will be subject to a public consultation with those views fed back to the House, and then that change will also be subject to people who are directly and especially affected being able to petition. This will all happen during the Commons Select Committee part of the Hybrid Bill process.

Q115 Chair: Finally, finally, what expertise do you envisage the Select Committee having on environmental matters in order to equip them to be able to deal with this assessment?

Dave Buttery: In the same way as the current ES consultation parliamentary authorities will appoint an independent assessor, whose role will be to take those consultation responses and produce a summary that the committee and the House can consider and use. That is the way that Standing Orders imagine it happening.

Q116 Chair: I am just looking at what is going to be available to parliamentarians who are on that committee to have that expertise and guidance embedded.

Dave Buttery: In terms of the way that the process works in terms of hearing petitions, the promoter will obviously have expert witnesses available that the Committee can use. Clearly petitioners will put forward their own views and their own expertise. Ultimately, the way the process works is it is up to that committee to weigh the information that it has provided and come to what it believes to be the right judgment on the information provided.

Chair: Thank you. We must move on.

Q117 Zac Goldsmith: Last week the Committee heard that if you go with the 360 kph train that that necessarily precludes various design route options. The most obvious one being following existing transport corridors, which it would be logical to imagine that that would have a lesser environmental impact and, also, a lower impact in terms of stimulating the kind of protest we have seen along the existing proposed tracks. First of all, do you agree with that; and, secondly, if you believe that that is correct, have there been any departmental assessment or cost benefit analysis into the possible benefits of reducing the speed in order to follow a different route, have a more meandering track?

Robert Goodwill: It is quite true we could have built another piece of Victorian infrastructure. We could even have built it down the side of the West Coast Main Line. It could have caused a degree of disruption. I think the view was taken that although primarily HS2 is about capacity, it is about addressing the demand that is already there for journeys between the north and the south, most notably from Birmingham to London. It is

also about relieving pressure on the existing railway network, where we would like to get more freight on to the rail. We would like to serve more additional stations with the existing network, and of course, if we can get the freight from the road on to the existing classic rail network, we can then free up more space on the motorways to enable better reliability of journey times there.

Of course, if you build a high speed line it has to be pretty straight and it doesn't stop in many places, which is precisely the project. There are no stops between Old Oak Common and Birmingham, which is the whole point of the system. Of course, by having a fast line you are also then in a much better position to displace existing aviation routes. For example, I would confidently predict that when the second phase is completed to Leeds there will no longer be a need for a connection from Heathrow Airport, which I know is dear to the honourable gentleman's heart and Leeds Bradford Airport.

If you look at a country like Germany you do not have these short domestic air routes because they have a high speed line between most of their major cities.

Q118 Zac Goldsmith: I accept all of that but was there modelling done looking at some of the existing transport corridors? Some of the arguments we have heard—and I do not think we heard it in the last session—I have heard were you to make use more of the existing transport corridors, road routes and so on, you would potentially lose between five and eight minutes on journey time but you would gain considerably in terms of reduced need for tunnelling, reduced compulsory purchase and you would have fewer battles on your hands. It obviously depends on the A to B route, but has that modelling been done and is there anything that you could show the Committee in terms of the work that has been done on that, the potential to follow other routes?

Peter Miller: Back in 2011 in fact through the consultation similar questions came forward. We re-examined speed and different transport corridors. In fact, in the Appraisal of Sustainability process, through 2009 and 2010, in that route optioneering process all the different permutations that we looked at, we looked at a good number of route corridors alongside existing rail and motorway corridors. It isn't simple and straightforward putting railways alongside railways and roads. If you have a new transport corridor that is being built—and this was the case on High Speed 1 where the M20 had been upgraded and then High Speed 1 came into effect and then the A2/M2 widening came into effect in conjunction with High Speed 1—that works very well. When you have mature transport corridors, be it rail or road, people live alongside those transport corridors. Communities grow up around those junctions, and what we found was that there was a high degree of disruption to people and places where they lived. It wasn't straightforward by any means by putting railways alongside railways.

Q119 Zac Goldsmith: Were you able to quantify that, in terms of disruption? We looking more at the environmental impacts now but it would be interesting to know if that was quantified in terms of the impact on people and communities.

Peter Miller: We set out a report, which I think was published in 2012, and we published our data on that.

Q120 Chair: It is not the same as quantifying, is it?

Peter Miller: Sorry, in the sense of what?

Chair: Setting out a report is not the same as quantifying something.

Peter Miller: It was a similar Appraisal of Sustainability type of report. Our report was a similar type of report that we put back to Government, which we had prepared overall for the Appraisal of Sustainability that was made ready for the consultation so that information was there.

In terms of the route alignment, the route alignment is designed for a 400 kph railway. It is fairly straight. It does not have the opportunity to bend round, as you say. It has to be fairly flat as well. It has to go with the grain of the landscape and we have to take into account a variety of environmental features. For example, we would have to get over flood plains and that sort of thing, and tunnelling is not straightforward in all circumstances.

What we found was that if you get to a lower design speed, yes, you could change the lateral curvature but you would not change it to any great extent or to the extent where you could perhaps skirt around an individual woodland or that sort of thing. What you might see from a road, where you can have that much more certain time flexibility, you do not get that from the railway.

Q121 Zac Goldsmith: How much time would you lose and how much would you have to reduce the speed from the 360 kph if you were to have a more meandering route? How much time would you potentially lose on the journey?

Peter Miller: I am not sure I am best placed to answer that because the question is about the Economic Case overall for the railway, and speed is important. Speed in broad terms—

Dave Buttery: Can I come in on that point?

Peter Miller: Yes, sorry.

Dave Buttery: One thing that the Committee might find useful is a part of the Environmental Statement which is called the Alternatives Report, which looks at some of the strategic issues about comparing to road, comparing to aviation, comparing to upgrades to existing, but also looks at what are the impacts of alternative speeds in terms of environmental impacts but also a little bit about what the impact is on the BCR. Within that it sets out that if you were to look at a route with a lower speed of 300 kph following the M1 in this case—so round by Milton Keynes—you would have a BCR that was 25% lower. You would lose a quarter of your BCR. You would also have more demolitions and more severance as Peter was saying, because communities have grown up along that route. As Peter was saying, you would have to reduce the speed even lower to be able to do a route that could avoid lots of things.

Robert Goodwill: To add to that, there would be no shortage of people wanting you to deviate the route for a whole variety of reasons, so I do not think it would be possible to draw a curved line between Birmingham and London that failed to hit any environmentally important locations or any communities that might feel they should be moved. The parallel that I like to draw is that if the Royal Navy are building a new battleship they do not go and cut down oak trees. I think it is important that if we are going to build new infrastructure that we do it to the absolute cutting edge of railway technology, we build a high speed line that will in effect make our country smaller, will bring the prosperity to the cities of the north and eventually to Scotland in a way that I think shows that we are availing ourselves of the best technology.

It is interesting that the bad weather we had over the winter, the High Speed 1 line is built to the standard that did not have any disruption at all because a modern 21st century railway

is built to withstand the type of weather conditions and anything else that can be thrown at it. As we have seen from our creaking Victorian infrastructure, a lot of the embankments, a lot of the track is in a location that is quite vulnerable, so it gives us better resilience as well to build this line. I do not think we need to make any excuses for building a high speed line and building it as straight as possible and then ensuring that we minimise the environmental impact. In fact, I think the ambition of having no net lost to biodiversity is probably the most ambitious standard we have set ourselves, and we are confident that we can deliver on that. It is important that you separate the biodiversity environmental type of issues from the issues of people who live near the line and do not want to look at it. They are two separate things.

Q122 Zac Goldsmith: I am pretty sure someone else is going to be talking about the biodiversity, the no net loss issue in a second, but one question on that. I know Natural England put a lot of pressure on you to avoid some of the sites of special scientific interest. Obviously there are a lot of local wildlife sites that will be affected. It is possible and we have been told even that, by shifting away from the SSSIs, there is a potentially disproportionate number of local sites that are affected. I think the number is 89. Do you think you have the balance right, in terms of weighing up the pressure from Natural England and trying to avoid too much damage to the local wildlife sites?

Robert Goodwill: In terms of biodiversity and wildlife, there are no Natura 2000 sites affected. There are two SSSIs affected. That is the Mid Colne Valley SSSI and the Helmdon disused railway SSSI. There are 41 habitats of principal importance directly affected—I won't list those—and 19 ancient woodlands. We have endeavoured to ensure that we have the minimum possible impact. Indeed, in terms of the ancient woodland, 32 hectares of ancient woodland will be affected by this. It is important that we take the steps to replace that habitat and do what we can to ensure that replacement habitats are quickly established to ensure that those species that live there at the moment can continue. It is important that we take the mitigation that we can to ensure that we replace what we are taking away, but unfortunately we are a very densely populated country. We have lots of sites of interest of various ecological and historical importance. We have lots of settlements around the country. It would be impossible to draw that dream line that missed all the important areas, so we need to make sure that we do address the issues that we have. We have a big opportunity, in terms of this corridor that we are procuring, to ensure that what we put there is something that does replace much of what we have unfortunately had to disturb.

Of course, in many areas we are not destroying important habitats. We are going through fairly mono-cultural fields of wheat and oilseed rape, which do not bring a great deal to the environment. In those situations I think there could be very much a net gain in terms of the planting that is carried out along the corridor.

Q123 Zac Goldsmith: Thank you. Can I ask one slightly predictable and perhaps self-indulgent question? The Airports Review is not going to report back until sometime mid-2015, after the election. Whatever outcome is identified there would then be a process of the Government having to choose whether or not to go with the recommendations of the report. Whatever their choice there would then be a very long period of time, in terms of securing permissions, planning permissions, and statutory instruments being put in place and so on. We are looking at a considerable period of time before there is any certainty at all around whatever airport option a future Government gives a green light to. Given that,

is there not a danger that by ploughing ahead with HS2 and by securing parliamentary backing for a particular version, a particular set of proposals, that those proposals could be rendered redundant, depending on the solution favoured by the next Government in relation to airports? A very long winded way of saying should there not be better co-ordination between this project and the airports project?

Robert Goodwill: The first phase of HS2 does incorporate the provision of the Heathrow spur. Indeed, the cutting at that location will need to be constructed in a way that allows that spur to be constructed if that goes ahead. We already have a very good provision for Heathrow connectivity through Old Oak Common, where there is a Crossrail connection with eight trains an hour with I think an 11 minute connection time to Heathrow. It is either 11 or 14 minutes. But there will be a good connection via the HS2, via Old Oak Common, to Heathrow.

I think the decision on which of the options to go to—or if to go with them at all for that matter—is separate to this, but I think either the option in phase 1, which is to use Old Oak Common as a primary connection through to Heathrow or, as part of the phase 2 situation with the Heathrow spur, either of those would be able to be developed in isolation without necessarily the other one happening. So, by building the line with the provision for the possible Heathrow spur, I do not think we are painting ourselves into a corner and making it a fait accompli that we have to then go on and build a Heathrow spur.

Chair: If I can bring Mike Kane in on that point?

Q124 Mike Kane: Forgive me, Chair, for being late. Sorry, the phase 1 does not have a Heathrow spur, does it? It goes directly to Old Oak Common with existing—

Robert Goodwill: The phase 1 makes provision for the construction of the spur, so it is necessary to have the necessary width in the cutting where the Heathrow spur would come out, to ensure that it could be constructed. By putting it in a narrow cutting it would be disruptive at the very least and possibly prohibitively expensive to go in and do that, but Mr Miller is going to make that point.

Peter Miller: What is in phase 1 of High Speed 2 is what you might call a passive provision. There is enough room in there to provide your connections into that spur so you can get into Heathrow.

Robert Goodwill: Personally I think that, as somebody who lives in the north of England who wanted to come down to London, I would be perfectly content to change at Old Oak Common and connect through to Heathrow that way rather than perhaps wait for the train that does go straight through to Heathrow. Of course, we need to look at the market for direct services to Heathrow from places like Leeds. It may be that at the time when that is considered as part of the second phase, there may be some representations made that it is not necessary to do that, particularly in the light of which option is finally taken. If the airport is built in the estuary then of course Heathrow would possibly have to close, in which case the Heathrow spur certainly would not be needed. I think we are in the realms of speculation there that perhaps as a Minister I should not have even got anywhere near.

The current phase 1 does offer very good connectivity not only to Heathrow via Crossrail but also to a lot of other locations across the Capital. Old Oak Common will be as well known as Kings Cross and Victoria and St Pancras as a major hub station, and the development that will go on around Old Oak Common will also be transformational to the local economy there.

Q125 Dr Offord: In previous evidence sessions some of our witnesses have criticised the role of HS2 Limited, particularly in regard to their decision-making processes and the way that local people, local organisations and local businesses have been included in that process. Some have even gone as far to talk about lack of transparency and even lack of decision-making involving local people. How do you respond to those kinds of accusations?

Robert Goodwill: When I arrived in the Department in October one of the first meetings I had in connection with the high speed railway project was to get the local authority leaders from all the authorities, starting in Camden and going up to Birmingham. We sat round the table. We went down the line of route and I got the feedback from the issues that concerned them, whether they be issues of biodiversity, whether it be issues of how we deal with the excavated material that may be laid on to land and then reinstated, issues to do with construction vehicles during the period of construction, which could cause disruption to local roads, issues of compensation, which we are currently considering our options on. So I have certainly engaged with local authorities. Indeed, the consultation process that went up and down the line before I arrived in the Department, in village halls and meetings to engage with people, there was an unprecedented level of engagement with people and the feedback that came in I think was something that we valued and responded to, in terms of many of the environmental mitigations that took place.

On the second phase, on the Y section, we are currently in that stage where we are going round with road shows, where we are allowing people to listen to what the noise will be like, to show them the way that the line will be delivered and how we will do our very best to ensure that their disruption is minimised. I think we have probably learned from the first phase and we are making sure that we do an even better job in the second phase.

Q126 Dr Offord: Mr Miller, you want to come in?

Peter Miller: Yes. I was involved with High Speed 1 and the planning of that particular railway. I think, if I was to compare what we did on High Speed 2 to the type of consultation that we had for High Speed 1, I think that there is a step change between that project and this particular project. Consultation—and there is consultation in its formal sense and there is engagement in perhaps a less formal sense—has taken place and it has been very wide-ranging for a whole variety of reasons.

One of the early issues was getting to grips with the route optioneering. In the very early days with British Rail when they were planning the Channel Tunnel rail link, they made the unfortunate mistake of presenting a good number of route options, which basically blighted Kent for a good number of years. We had to take the view at that stage, with opening up all these different route options, that there was a high degree of risk that you could have blighted a good part of the country. It simply was not right to do that. It wasn't in the project's gift to do that. So I can understand where some suspicions might come from but I am not sure that that is well founded. It certainly wasn't in my view but well founded at that stage.

When we brought forward the information in 2011 for the consultation the main route options that we had considered did form part of that consultation. We did have a preferred route. The rest of the engagement I think has been transparent, and we have had non-governmental organisations, for example, come forward. They came forward back in late 2010 under the guise of the Right Lines Charter, so organisations like CPRE, Campaign for

Better Transport, the Wildlife Trust, the Woodland Trust and the National Trust came forward. That eventually led to a forum meeting with HS2, what we call the NGO forum, which meets regularly. There was an additional meeting to that. It was the Ministerial Environmental Roundtable, which the Minister now chairs. Every other month we had a community forum event through the period of the production of the Bill plans and the Environmental Statement. I think that was mentioned at the last hearing. On this four weekly or eight weekly cycle, at 26 community forum locations events took place.

Those were variously received. There is no doubt about that. But we provided information and I think in some places it worked better than others. So we have been open, we have been transparent and where we have been able to provide the information in good time we have provided that information.

Robert Goodwill: We have made some mistakes. The first one was when the engineers were drawing up artists' impressions of the line they used a cut and paste viaduct, which was the most ugly viaduct I have ever seen. I cannot promise you the Ribbleshead Viaduct, but I think it was something that had not occurred to people that we should try to produce something that will look like the line is going to look, rather than just the tool they had in their design computer programme that allowed them to do that.

I think another mistake we made was just designating areas for the sustainable placement of excavated material, which I have been told I have to call it rather than disposal spoil. We did not make it clear how that material would be managed, how the topsoil would be preserved, how the land would be reinstated. It was just designated, "That is where we are going to dump the rubbish" and people had this mental picture of big heaps of brown soil festering and being there in perpetuity. That was a mistake that I think we should have learned from.

Thirdly, and this is perhaps something we could not do as much about, is that some of the letters that we had to send to people had to be written in a particular legal way to ensure that we were not challenged through judicial review or anything else, because a lot of people out there were waiting to pounce on HS2 the moment we made the slightest mistake that will be seen as breaking the legal requirements we should go through. So some people we have access across their land for a short period to do a little bit of work on, in some cases just to move an electricity supply, they got a letter that made them much more concerned than they needed to have been.

Therefore, I think there are a number of ways that we could have done it better and I think it is important as we move forward on to the second phase, or future projects in the country, that we actually learn from some of those ways that I think we unduly worried people about some of the implications and the impact it may have had.

Q127 Dr Offord: I am sure the Minister agrees with me, having been in politics for many years, that there is a difference between engagement and consultation. I remember the former Mayor of London said he consulted. He would tell people what he was going to do. If they came forward with some good ideas he would take them and do them as well, but if they did not come forward with anything else he would just carry on and undertake the actions he always intended to do. Bearing that in mind, what I want to ask you is there are still some aspects of the route that still need to be elaborated on. Specifically, I give you examples: the environmental minimum requirements and the Code of Construction Practice. Minister, you said that you wished to do some things differently in the future, so how do you see your consultation around those areas changing as a result

of your experience in the past, bearing in mind our objective in this Committee is to look at some of the environmental issues and standards surrounding HS2 rather than whether the line should be constructed or not?

Robert Goodwill: Yes. We have responded to the points that were made to us during the course of the consultations. That is why, for example, there are 79 miles of tunnels and cuttings, which is just over half the route that will be lowered into the ground in way or another, and there are 63 miles of noise barriers that we will put there to mitigate noise. So I think we have responded very much so but, yes, as we move into the construction phase, I think we need to make sure that we do ensure that we minimise the impact on local communities. Certainly construction traffic is one of the issues that has been raised with me. Whether in some cases we use local roads or construct temporary roads, because obviously the construction of a temporary road does have an impact on the environment where that is, and how we can endeavour to use the line of route more in terms of the construction traffic that we need. That is something I have discussed with officials recently, how we can use the corridor that we are constructing along to transport materials in the construction of that particular line.

I think we are very aware that we need to be good neighbours to the people that we are constructing through. Also then moving on as to how we can make sure that the mitigation we put in place ensures that we leave something there that does have this concept of no net loss to biodiversity and that people will see the benefits to communities, whether that be a woodland that belongs to a local woodland trust, or whether it be the access along the line of route for cycling, walking and other provisions. So I think we do need to leave something behind that is not just a track down the countryside, it is something that people can look at and think, “Well, it is great that we have this mitigation in place”; that we have these 4 million trees that we are planting; that we endeavour to recreate the, I think, 32 hectares of ancient woodland that will be affected; that we can recreate that in a way that ensures that, as quickly as possible, it establishes itself, at least for the species that use it, and over a longer period establishes itself as what could be described again as an ancient woodland.

Peter Miller: Can I come back on your point about the consultation and whether that delivers on results, do we actually listen to that consultation? I think the answer to that is, yes, because of the way that scheme changes have come about. In the very early stages we had delegations from Leatherhead, Southey and Stoneleigh, that sort of area. That resulted in a really good alignment change. Our alignment at Ladbroke we had on a viaduct and it was quite close to that village. In the fullness of time when we looked at the designs we moved the railway away from the village, equidistant between Southey and Ladbroke. That got the railway into a place where we could take it off a viaduct. It could be much lower and going with the grain of the landscape, a much easier thing to ultimately provide noise barriers and mitigation and that sort of thing. That is the sort of response we now see in the Environmental Statement.

There are numerous examples of this along the line of route where communities come forward. So the consultation has had teeth. We have taken that into account and that is reflected in the design, and the consultation we had last year is reflected in the mitigation plans in the design.

You mentioned the environmental minimum requirements. I think this came up at the previous inquiry last week. What this is about is affording the right level of protection for

people. Of course, we are looking to create a piece of legislation to enable this railway to happen. Within that certain aspects of the law have to be disapplied because those aspects of the law simply cannot work if we have our own piece of legislation there. I think you heard last week that—certainly in the water environment, for example, the sort of things that we have been talking with the Environment Agency about—there are protective provisions within that, which build back those provisions that were otherwise disapplied in the ordinary legislative framework. There are environmental minimum requirements. That ultimately is an offer or a commitment that the Secretary of State will make before Parliament. Within that that the Code of Construction Practice, among other things, offers up protection and further consideration, a way of working with those knowledgeable others, statutory authorities—like Natural England, the Environment Agency and English Heritage—that we are safeguarding that environment in the right way.

The Code of Construction Practice features a wide range of protection in one package. That will ultimately find its way into construction contracts and we will be preparing local environmental management plans. We are doing that at the moment. We do not have them all published at the moment. That will say how we are going to approach the local protection as the construction works take place. You need to understand that that does not preclude law like the Control of Pollution Act. It does not exclude the Environmental Protection Act for things like noise, and there are other consenting regimes that we will have to go through, and that we will have to put forward plans to local planning authorities to ensure that best practicable means are applied to that construction to afford protection to local communities.

There are a wide range of factors in that, not just the hard sort of construction things like air quality and noise. There are issues about agricultural soils handling. There is stuff in there about biodiversity. That will all flow through into our contract and, ultimately, will be discharged by our contractors.

Q128 Dr Offord: I will be very brief on my final point. It is interesting, Minister, you mentioned noise barriers because there was a gentleman last week and it is my recollection that he felt there should be more noise barriers. While I understand that you cannot satisfy some people, they want more and more and more, it does raise an issue of someone saying that a certain barrier, for example, needs to be introduced, and HS2 Limited might say, “It does not”. Do you have any kind of mechanism to resolve those kinds of disputes between local people and organisations and HS2, rather than going down the judicial review route?

Peter Miller: On the noise front, if you are talking about noise barriers, the process of assessment is well known. We have applied a great deal of rail expertise, looking at the assessment itself and then looking at the results and how you might respond to those results.

Q129 Dr Offord: Sorry, can I interrupt you. I understand that. It is just when there is a dispute between you, HS2 and others, what kind of mechanism is there to resolve disputes?

Peter Miller: The Hybrid Bill process will be one avenue of resolving those disputes as petitioners come forward. I would expect a lot of that sort of business to be taken care of through that parliamentary process. In construction we have provision for a Complaints Commissioner and, ultimately, if there is no resolution even with the Complaints Commissioner, it would go back to the Secretary of State. I do not suppose he would thank us very much for coming back often, and we do not have any intention of coming back at

all. I would also say that these other mechanisms, if you have a consent regime, if we have water quality consents, water discharges and that sort of thing, noise consents, if we are in breach of those consents then the law comes into effect. As with construction things happen. It doesn't go right all of the time. It goes right most of the time but then you do get occasional disputes.

We have provision in the Code of Construction Practice for working with the community, so that they get informed about what is going on, and our contractors will talk to those people and resolve those sorts of minor things as they arise.

Chair: I suspect our next question might be interrupted by the division bell, but nonetheless I will turn now to Peter Aldous.

Q130 Peter Aldous: I want to look at the question of carbon emission reductions from HS2. Minister, how significant do you think this will be?

Robert Goodwill: HS2 has been a transport project and it has never been promoted primarily to reduce carbon. However, we are serious about carbon and that is why we have produced a carbon footprint for the project far earlier than any other project of this scale and complexity. I am sure members of the Committee are aware that rail is a more carbon efficient form of transport than road or aviation and that the majority of the carbon emissions associated with HS2 will be regulated via the European Union Emissions Trading Scheme, ETS. This will mean that the majority of emissions associated with HS2 will not lead to an increase in overall EU carbon emissions.

There are two aspects to the carbon footprint of the project. The first, of course, is on the construction side. Much of the environmental mitigation, in terms of tunnelling will increase the amount of carbon embedded in the project, concrete tunnelling sections use up a lot of energy. Similarly, steel used in viaducts and other structures do use a lot of energy. Therefore, we have had to have a balance between the environmental mitigation to reduce the effect on the environment in terms of the appearance of the rails running across the beautiful British countryside with the effect of tunnelling.

The second important aspect to look at is in terms of the energy consumed by the railway system. Rail does take up a very small proportion of the overall energy consumption but, as we move to green our electricity generation by more sustainable generation, wind farms and the rest, by a new fleet of nuclear power stations, then at least we can demonstrate how high speed electric trains, as well as the conventional trains. We have announced 850 miles of electrification, which I think is probably 842 miles more than the previous Government. So we are committed to greening our transport infrastructure. Therefore, as we deliver a more sustainable electricity generating system in the country, High Speed 2 will become increasingly more sustainable.

Q131 Peter Aldous: Thank you for that answer. Much of the carbon impact of HS2 hinges on when it is operational after construction. It hinges on the actual number of passengers using the line. How sensitive is that? If you do not get the numbers you are looking for are the carbon emissions going to go up dramatically? How sensitive is that and what sort of timetable have you been looking at in assessing those passenger demands?

Robert Goodwill: In terms of the operational emissions in 2030, we estimate that 0.06% of UK projected transport emissions will be from the high speed rail network. But it is the case with cars with one person in rather than four. It is the case with empty buses. The

most sustainable train is a full train. We already have full trains on the West Coast Line. I think there are 4,000 people standing every morning into Birmingham New Street, 5,000 standing every morning into Euston. The increase in train ridership and passenger numbers has been phenomenal since privatisation. It has risen from 750 million to 1.5 billion and there is no indication that this is likely to ease up. This is primarily a capacity issue. We need more capacity on the railways. I often get asked, “How much will the tickets be?” The tickets will have to be competitive and people will be using this railway line.

Q132 Peter Aldous: You are anticipating full trains more or less from the start?

Robert Goodwill: Full trains are green, empty trains are not green. Simple as that. The projections are we are building this railway line because the existing trains are full and these trains will also be able to address that demand and there will be large numbers—

Q133 Peter Aldous: Have you carried out any sensitivity analysis that if you do not get full trains as to what the impact on carbon emissions will be?

Peter Miller: I am trying to find the figure and I might have to come back on the figure. I am sorry; I do not have it in my note.

Q134 Chair: Send it to us. It would be acceptable to do that as well.

Peter Miller: Yes, okay. From my memory, I think the passenger loading is based on 70% and there is sensitivity analysis around that, but I am sorry I do not have that in my note and I will have to come back to you on it.

In a way this is a function of the attractiveness of high speed rail. Clearly with a high capacity railway and it being attractive, because speed helps you shrink the country in a different way, that leads to high loading factors. We are expecting high loading on this railway.

Robert Goodwill: What is interesting is that all those who predicted that the advent of the internet and better communications, teleconferencing and so on, would obviate the need to travel have not been borne out. Indeed, if anything the opposite is the case because people now with access to the internet can find a hotel in Penzance on Thursday of this week that has a room available. They can go online and book a ticket on a train or an aeroplane to get there. If anything, the technology that was predicted to reduce the need to travel has actually promoting more travel, both international travel and travel within the UK.

Q135 Peter Aldous: I think I am right in saying a lot of these forecasts have been based on a 120 year period, and would you agree with me that it is a stab in the dark to anticipate what might be happening in 120 years?

Peter Miller: We have looked at it on a 60 year period and—

Chair: I will postpone the sitting, order, order.

Sitting suspended.

On resuming—

Q136 Chair: Order, order. I think, in the interests of reaching our destination by the time of the next vote, I should recommence our session and hopefully we will be going at a higher speed than we have done up until now. If I can ask for both the Committee members and witnesses to speed up a little bit that would be helpful.

My colleague, Peter Aldous, is still on his way back but can I just ask very quickly what consideration has been given to reducing emissions from HS2 by making the trains operate at lower speeds until electricity generation has been largely decarbonised? Has that been considered?

Peter Miller: It has not been considered as part of our proposals to date.

Q137 Chair: Why not?

Peter Miller: The mix of high speed and capacity I think is a complex one. We have looked at our remit and we have worked up our proposals on that basis.

Q138 Chair: Can I just ask the Minister for comments on that? You did say at the outset of the response to Mr Aldous' question that this was very much a transport initiative, but you wanted to do what you could. Bearing in mind the commitments of the Climate Change Committee and the outputs that we have to have, would it not have been sensible to give some consideration to reduced train speeds?

Robert Goodwill: I made it clear that the project would be regulated via the Emissions Trading Scheme, so the participation within that scheme will enable different market measures to be used to bear down on the emissions.

Over 60 years it is forecast that the first phase of HS2 will create between 2.1 and 2.6 megatonnes of CO₂ equivalent, and indeed over 120 years—and I would take this forecast with a big pinch of salt—it is forecast it will either generate a small surplus or a small carbon saving, but obviously the energy mix within our electricity generating system is one that would be the primary consideration.

In terms of speed, the benefits that can be gained through modal shift from air to rail would certainly indicate that having a train system that can compete with air in terms of speed would be one that encourages a reduction. Although there are mechanisms within aviation that can be used to reduce CO₂ emissions, it is much easier to do that. There is much more low-hanging fruit in terms of electric railways than there is with aviation.

Q139 Chair: My specific question was about whether or not there could be provision built in for lower speeds should the need be there to meet carbon emission targets.

Peter Miller: The other issue with this is just how the energy goes into the train and how we power the trains up to the point of that high speed.

The greatest expenditure of energy is when you are moving from a standing start to get yourself up to a speed, and there would be a fractional difference between, for instance, a speed of 330 compared to 360. It is the point about getting up to speed, and then when you are at your cruising speed you are that much more energy efficient. Yes, you will be using more energy at a higher speed, but you are getting the overall benefits of moving that large number of passengers around from place to place as a result. The trade is between what you get from a transport benefit and what the carbon outcome might be. That overall for electric rail is very small.

Robert Goodwill: Just on that point, we have not specified the trains as yet but technology would indicate we could have, for example, regenerative braking so that, although the trains expend energy getting up to speed, as they brake they can feed energy back down the line. Similarly, as the latest generation of Japanese trains have shown, the aerodynamics of trains is improving all the time, not least the design of the pantographs

that not only by being designed in a more aerodynamic way can reduce energy consumption but also reduce noise. I think there is a challenge there for the industry to come up with rolling stock that will perform efficiently, even at the high speeds that we are specifying.

Chair: On that point just very quickly Mark Lazarowicz.

Q140 Mark Lazarowicz: Not on pantographs but on the other point, about emissions more generally. How far do collations on emissions take into account services, both passenger and freight, and effect a mobile shift further north, North England, Scotland and further, west into Wales and so on? I know there comes a point at which it is going to be difficult and you have to draw a line somewhere when you make this calculation, but how far do the calculations go because of the impact of HS2 on services, both on the line but also on freight diversion as well?

Robert Goodwill: It is certainly the case that—as I think I have mentioned already—that by freeing up capacity on the existing classic network we can get more freight off the roads and on to rail. Indeed, the further north you go up the country the less congestion becomes a problem, and we are constructing freight lines to enable us to get more freight from ports like Felixstowe and ensure that we do not have to have that London block.

The rail freight group have estimated that 500,000 tonnes per annum of CO₂ could be displaced by this project by taking 200 trucks per hour off the M40, M1 or other parallel route, so there is good potential there for getting freight off the roads, on to the rail and delivering more carbon neutral or even reducing carbon emissions.

Certainly, once you get the freight on to a railway train the distance is not really an object so certainly Scotland would benefit from that, assuming of course that Scotland is still part of the United Kingdom and would want to participate in that sort of project.

Chair: We must move on.

Q141 Mrs Spelman: I am going to have to bring DEFRA into the discussion a little bit, so in the *Natural Environment White Paper* the Government stated it wanted this generation to, “leave the natural environment of England in a better state than it inherited” so how does that square with the ambition of High Speed 2 for no net biodiversity loss?

Robert Goodwill: No net biodiversity loss is what it says on the can. We aim to build the railway in a way that, with mitigation and the environmental tree planting and the efforts to try to regenerate some of the ancient woodland—I know that we cannot replace it immediately, but we can do what we can to make sure that we at least replace the habitat and in time replace what we can of that particular aspect—in a way that down the corridor that we are procuring means that there is no net loss. I do not know if Sara from DEFRA would want to add to that?

Sara Eppel: This is a huge project, so 140 miles with a no net loss.

Chair: Could you just move the microphone closer, please?

Sara Eppel: Sorry. Yes, it is a huge project. It is 140 miles, so it is quite challenging to achieve no net loss in that context, but it is very good that HS2 have that ambition and are working to achieve that. The detail of how they will get there would have to be developed as we get better access to the sites. At the moment we just do not have the detailed access. We only have what is available to the company at this stage.

Q142 Mrs Spelman: The Minister described no net loss as the most ambitious standard. Would it not be true to say that net gain would in fact be the most ambitious standard, which is what the *Natural Environment White Paper* set out to achieve?

Sara Eppel: There is no other international infrastructure project this large that does a no net loss. Well, it does a no net loss but it does not go further than that, so to achieve no net loss is in itself challenging. Whether they can go beyond, and achieve net gain, is something we will have to wait and see, but that would be above any other international standard.

Q143 Mrs Spelman: It might be possible for sections of the route to achieve net gain, would it not? The overall outcome might be no net loss but in some places the restoration of degraded sites would give you significant net gain.

Sara Eppel: Yes.

Q144 Mrs Spelman: Who do you propose should monitor and audit that there has been no net loss and what tools does the Government have at its disposal to achieve that?

Sara Eppel: We have a metric at the moment that is being tested in the six biodiversity offsetting pilots, but they are only being tested. We have not analysed the results yet and it is too early to say. What we want to be able to do is achieve some kind of a baseline this year and next year so that, beyond that, we will be able to say against that baseline we have progressed one way or another, but this is further work for us and HS2 and DfT to develop and our agencies, National England and Environment Agency.

Robert Goodwill: To add to that, in terms of what we can do, we can only really do it in the area defined by the Bill. It might be interesting if this Committee might look at perhaps where other environmental mitigation might be further afield from the line where there are perhaps brown field sites that could be restored. That is not something that is specifically within our remit. Of course, in terms of some of the other offsetting, there is a multiplying up factor, so in terms of the area that is handed to perhaps local community groups, or environmental groups, there will be a net gain of area because some of the very important areas that unfortunately we have to sacrifice will be replaced by bigger areas.

Bearing in mind there is always a conflict with agricultural land and that, for every acre of land we take to plant trees on or to do some other environmental enhancement, we have a farmer there complaining. Also we could have opportunities from some of the remnants of land—bits of land that are cut off by the line, perhaps between the road and the line—and that will also give us opportunities to do some interesting and exciting environmental projects that will, overall, ensure that the project gives us no net loss but also a net gain as well.

Chair: Have you finished, Caroline?

Q145 Mrs Spelman: No, what I was going to say was that was exactly in evidence what the Country Landowners' Association was pushing hard for last week, where the sacrifice of Grade 1 or Grade 2 agricultural land would be required to build the line, but that from a biodiversity loss or natural capital loss point of view just planting that area with trees might not be the right answer. I think the Minister's response, informed by his own farming background, is useful for the Committee to hear.

Robert Goodwill: Of course the other point that follows on from that—and one that I would be interested to read the Committee's report on—is what do we do about public access? On the one hand we have communities affected by the line who are going to have access to land that they can use for recreation, walking and cycling, but on the other hand

we quite like to promote more ground nesting birds. Although ramblers are told to keep their dogs on the lead they do not all do that, so to what extent should we have land that is set aside as habitat and to which the public have no access? There is a balance to be had there between the natural aspirations of the general public to enjoy some of this land, and the environmental objectives that would indicate people not going anywhere near it because of the disruption that might cause.

Chair: I hope this is not opening up into a right of way access debate, but I think we must move on to Dr Whitehead.

Q146 Dr Whitehead: One of the problems of no net loss is the extent to which you can get an accurate baseline to start with, in order to ascertain what no net loss may consist of. Are you clear in your mind that the work has been done in order to establish an accurate baseline to work that no net loss out from?

Robert Goodwill: We have the baseline in terms of the designated sites and the habitats that we have surveyed. As my colleague from DEFRA pointed out, we have not had access to all this land to fully assess what is there. Certainly, in terms of hedgerows and other habitats, I think it is important that we do ensure that we try to replace as far as possible like-with-like and that we are replacing well-established hedgerow. We log the species in that hedgerow so we can introduce the same hedge species along there to try to replace as much as we can, that we look at issues affecting for example bats. I know that we have on part of the line an area where the female bats nest in one place. They nest or roost in one place and the males in another place and they feed in another place, and because bats tend to follow hedge lines, we look at how we can have a continuous hedge line going over the railway so that the bats will not be prevented from their normal feeding cycles. There is a whole variety of ways, once we get possession of the land, that we can assess what is there to ensure that we protect as much as possible but also enhance.

There will of course be a number of areas where we are going across pretty sterile monocultural agricultural land where whatever we do will be a net gain.

Q147 Dr Whitehead: We heard last week that, for example, not all ancient woodlands on the route have been surveyed, that there are a number of assumptions that have been made about sites that do not appear to have been backed up by any sort of on the ground examination. It may well indeed be that the number of ancient woodlands affected has been underestimated. Perhaps I could address that to HS2. Do you think that is a fair criticism or is that perhaps rather harsh on what has been happening?

Peter Miller: We have not been able to get full access all the way along the line. We do not enjoy a right of access in these circumstances. I think it is around 60% access that we have been able to gain through the production of the Environmental Statement.

The surveys are one thing and the available information is another, and over the years there has been a better database generally available to not only us but the general public. We have looked at the ancient woodland inventory and it is true to say that that inventory picks up on sites of two hectares or more, so there may well be occasions where there are small remnant sites that could well have been surveyed.

We think they are likely to be few and far between. We have looked at sites of special scientific interest; we have looked at local records as well. We brought that all to bear together with good aerial photography and that sort of thing, and we have indeed taken a

precautionary approach in our assessment. Where we have not been able to get access to land or the record is not full, as it is in perhaps other areas, our specialists have taken a precautionary approach in the assessment and, in a way, overestimated or brought forward a reasonable worst case assessment of the likely effects.

We have to rely on our specialists and they come from a very broad background of expertise. We have a great deal of expertise in biodiversity brought to bear on the project, so I am confident that what we have put into the Environmental Statement is good. It may go one way or the other. You can go out and survey a site and you might find that it is not ancient woodland at all. On another occasion you might find something that crops up. Overall, in the balance, I think we have it right.

Q148 Dr Whitehead: Are you continuing with any further surveys or studies in terms of those areas that have been assumed to be of a certain type that you do not know?

Peter Miller: Indeed we are, and the most important thing for us in the surveys that we are continuing with is the protected species surveys. We have a programme in place at the moment to obtain further access from landowners, and I think generally we are getting a good response from those landowners we are already dealing with. As I understand it, we are starting to get an even better response from those landowners who previously have not engaged with us.

If there is any further information that comes forward, then we would bring that forward in the way of supplementary information that Dave Buttery spoke about a little earlier on. We are not trying to hide this information. We are trying to get this information out there and to inform this process. In particular, for protected species, that is clearly highly relevant because of the way in which we will ultimately have to come forward and get licences for the translocation of those species to find those species new homes and that is part of our plan.

Q149 Dr Whitehead: Does that supplementary information then go into the Environmental Statement and how might it do that? Would there need to be any further consultations if that supplementary information proves to be significantly different from what there was before?

Peter Miller: If there was a significant difference—and we do not anticipate that—and a good deal of new significant effect were to come forward, in terms of the Environmental Statement, I think that would have to come forward as a different provision within the Bill, and that would have to be made known. Then I think the same sort of practice would prevail.

Dave Buttery: Yes, so if the survey data identified a new significant environmental effect that is not in the Environmental Statement we would have to deposit what is called supplementary environmental information. That would be subject to the minimum of 42 days' public consultation. The consultation responses would then be summarised by a technical assessor appointed by Parliament, so the whole process would ensure that that information is fully aware to Parliament when it is making its decision about this project.

I think it is also worth noting on the issue of land access that the Hybrid Bill, which is before the House, seeks to address that issue by giving promoters of the Hybrid Bill access to land to do the environmental surveys, so that we are not in a situation where we are being criticised for not being able to get on land when we just have not been able to do it.

Q150 Dr Whitehead: That suggests that supplementary information might appear in front of the House as the Bill progresses. Would you be confident that that is going to be there at the right stage for the right bit of the Bill to be discussed with that information in front of it?

Dave Buttery: It will appear as the Bill progresses. I think HS2 Limited is doing a programme of repeat surveys that should, hopefully, provide the information at the right point. The other thing to note is that if the Bill is given Royal Assent and it becomes an Act, the way that the Bill is constructed and the way that the environmental minimum requirements and commitments that the Secretary of State gives to the House effectively means that the railway needs to be built within the scope of the Environmental Statement, or it does not have planning permission, or further consent has to be sought. If there is an additional environmental effect that is not identified until after Royal Assent, the nominated undertaker—the organisation building the railway—would be required to get planning permission via the local authority, so there is always a check and a balance. It is not that once the Act is an Act there is carte blanche to do what the nominated undertaker wants. There are inbuilt controls to protect the environment.

Peter Miller: A final comment on that, if I may. The petitioning process itself, you heard from the Woodland Trust last week and I think they brought forward their concern about the smaller remnants of ancient woodland. In the fullness of time their petition will come forward, no doubt. We have already had conversations with them and those conversations will continue. If there is new evidence that comes forward then we will take it into account.

Q151 Chair: Can I go back to what you were just saying about access for surveying? It strikes me that there is a timeline that is not quite right. If there is not some permission for that access to be given for that surveying to take place, therefore it cannot be done prior to the detailed consideration in the Hybrid Bill. How would you get over that one? How would you make sure that there is that access in order that whatever needs to be accessed, and therefore put into place, is done before it is too late?

Peter Miller: At the moment there are some areas of land that we may never get access to. That does not preclude an environmental assessment being carried out. We have done that. We have used our expertise, we have used all of the available information and brought that forward. If there is a stage where, say, a landowner has not granted us access to land and then comes forward and says, “There is ancient woodland on my land” and we simply do not know about it, it will come forward at that stage. We expect those petitions to come forward early in the process.

I think overall—and this is me speculating a little bit—with the process that is going to come forward we will have sight of that at the very earliest part of the parliamentary Select Committee proceedings.

Dave Buttery: Peter is right, that while surveying data is an important part of the baseline for an Environmental Statement, it is not the be all and end all. There is a lot of existing information held by local authorities and held by other groups, which HS2 Limited has used to ensure that the access is as robust as it can be.

It is also the fact that with safeguarding in place, and with properties starting to be purchased earlier, we will be getting access to an increasing amount of land before Royal Assent but, as Peter says, there will be areas of land where—because the landowner is not

allowing access—we will not have physical access to that land until we have the power to compulsorily acquire it. Clearly at that point a key first step is the kind of surveys that you might want to do to make sure that our assumptions about what was on that land are correct, and if they are not, then we are back to being triggered into the process where we either need to think about how we can change our project to avoid a significant effect, and so live within the Environmental Statement as considered by Parliament, or go down a route where we need to get further consent.

Q152 Chair: Surely, though, there will be an expectation that it will be possible to resolve that within the Hybrid Bill during that parliamentary stage of the process?

Dave Buttery: That is the hope, but clearly it is ultimately up to the landowner to decide whether they want to give access to the land or not. HS2 Limited have had a process of engaging with landowners, a kind of series of commercial payments to allow access to land, and that has only been successful to a certain point.

If, clearly, during the passage of the Hybrid Bill more landowners give access to their land those surveys will happen, but at the moment it is impossible to speculate how comprehensive that extra access will be.

Q153 Simon Wright: I have a few questions about the proposed metrics for assessing biodiversity offsetting in HS2. To start with, it would be really helpful to get a clearer idea from the Department what discussions took place between DfT and DEFRA, which led to the conclusion that an HS2 metric specifically was required for this purpose, rather than simply taking the one in DEFRA's own *Green Paper*.

Sara Eppel: Yes, the pilots that we are doing at the moment started at a point of time where they were looking at those particular projects. None of those projects are the size of HS2, so it is quite difficult to do a pilot that is going to be comprehensively useful for HS2 in the round. There is almost certainly going to have to be some sort of adjustments.

The metric that we have, as I said we will develop depending on what comes out of the pilots. It means a lot more analysis; we need to see the results. HS2 had to do its work within its timetable and within the timetable of this Bill, and the two are not perfectly aligned. You could say, "Why did DEFRA not do some biodiversity offsetting pilot six or seven years ago?" Well, we did not, so we do not have something off the shelf that we can just hand over to a very large infrastructure project like HS2 and say, "Here it is".

What HS2 have done is taken the essential parts of that and adapted it. They are also screening it against the ecosystem service assessment to see if there is anything that we need to add in, but so far their approach seems reasonably sensible.

Robert Goodwill: This is not a new science. All over the country there are farmers on high level stewardship schemes that are developing habitats to introduce certain species. There is all sorts of stuff going on around the country already, nothing to do with HS2, which demonstrate how landowners can improve the environment and generally give us a more diverse countryside.

Q154 Simon Wright: Is it right that the Government's response to the pilots will be coming in the summer? I think that is what we have heard.

Sara Eppel: Yes, the pilots are due to finish this summer but it will take some time to analyse them, because they are all different and it is not necessarily going to give us very clear cut answers to how the metrics might need to be adjusted or changed over time. All

we want to do is use it to help inform the work that is being done, looking across at HS2 standards to see if there are any changes that are needed over the longer term.

The other thing to bear in mind is we are trying to get a baseline for this project, so if we establish that then we want to measure beyond it. That is not to say that there will not be changes, there are always changes to these sorts of things over time and it is a very long-term project.

Q155 Simon Wright: So the HS2 metrics you would expect would possibly be subject to change based on the outcomes from the pilots?

Sara Eppel: It is difficult to say at the moment. I am not sure. Possibly not.

Q156 Simon Wright: Is the HS2 metric specific for HS2 or would the Department for Transport potentially use the final HS2 metrics for a whole range of other similar big transport projects in future?

Dave Buttery: As it has been developed it has been developed for HS2. We are all, both Departments, learning the lessons. No decision has yet been made about whether we would apply the metric in the same way to say a road scheme or a conventional rail scheme. At the moment we just need to understand how it works and what it shows us.

In terms of the changes that we have made to the metric, what we have tried to do is build on the existing metric to take account of some of the specific effects of HS2. The metric that DEFRA have developed does not have a value in it associated with ancient woodland, because the expectation is that the smaller developments that the pilots are doing would not go anywhere near any ancient woodlands. Clearly, unfortunately, we do take ancient woodlands and so we need some way of valuing that in the calculation. One of the changes is a much higher multiplier for ancient woodlands than for other types of woodland.

The other main change that we have introduced—Peter can correct me if I get this wrong as he knows more about it—is that we have added a value for connectivity. So, for example, where we are taking a piece of habitat that has a valuable role in connecting similar habitats, that will be valued much more highly, and similarly where we are putting in mitigation that links habitats that will get a higher score. If you are not putting in mitigation that gets connectivity that has a lower score.

What we are trying to do is sensibly build on what DEFRA already has to make sure that we are getting the full gambit of a project, a very long, linear project where you have much more scope for things like connectivity than you do if you are dealing with a small individual project.

Chair: We are coming up to a vote, and we have a series of very quick, short sharp questions.

Q157 Peter Aldous: The decision to provide offsets along the track and secure land for them for compulsory purchase has been criticised. Could you explain to us why you adopted the approach that you have?

Peter Miller: I think the principal issue is proximity to the habitat that is affected. I know there has been quite a bit of debate about offsetting in this Committee and in the offsetting debate. We have taken the view that the Environmental Statement delivers results, those are the Significant Environmental Effects, and it is right for the project to respond to those significant effects and provide that response in a secure way with the limits of land that are expected to be gained through the Hybrid Bill process, rather than relying on any other offsetting process.

Q158 Peter Aldous: In doing that, have you factored into account and guarded against acquiring high value farmland that is productive farmland that would normally remain in that use but will now be used for biodiversity compensation?

Peter Miller: Third parties might argue differently, but we did take that into account. The evidence is that we do not affect Grade 1 agricultural land. There is some high grade agricultural land that we do affect, but it is a balance of what is the right effect and response in our view to tackle the biodiversity issue. Agricultural land in a number of instances is taken up in that response, but overall we have looked at the effects on agricultural land, we have looked at the biodiversity effects and we have looked at the overall effect in the round, and we brought that forward.

Dave Buttery: It is probably worth noting that in terms of agricultural land, we take a final construction footprint of 0.03% of the available agricultural land, so our end impact on the national resource of agricultural land is very small.

Q159 Peter Aldous: Finally, with these new offset sites, just looking to the future, the future management arrangements, who will be managing them and how long are those arrangements going to be for and probably, most importantly, is there funding for them?

Peter Miller: The way we have looked at the mitigation, if you consider that as being an offset, we have made plans for ancient woodland translocation of soils. We have been looking at the Cottington Woods, which is an example on the A2/M2 widening. I do not think we have finally settled our plans for the maintenance and monitoring regime.

On that particular project—and I know it is not HS2—there was a 10-year maintenance and monitoring period. We visited the site last week, and that is 15 years since the translocation of soils. That seems to be doing very well. There was a report at the 10-year point on the Cottington Woods' job that a monitoring period up to 20 years ought to be carried out and we are thinking about that at the moment.

In terms of the cost, our cost build takes into account all aspects of modern projects and how they come forward, so the sort of mitigation and compensation response that came out of High Speed 1, came out of the Olympics, has come out of Crossrail, that overall is factored into the overall cost equation for the project. While I cannot pinpoint any particular pounds, shillings and pence for the monitoring overall it is included in the cost build.

Robert Goodwill: Can I just add that the conversations that I have had with officials would indicate after the initial high maintenance period when, if you are planting up woodland, you need to be pretty much on top of it all the time, but as time goes on maintenance reduces. Then I think it would be a useful aspiration to look at whether local Wildlife or Woodland Trusts would be able to take over the management of those and they become much more of a community asset. That is certainly the way I would like to move if it was possible to do that within the constraints of the scheme.

Peter Miller: There may well be other ways of looking at how maintenance monitoring comes about. If you think about the woodland, you might put woodland into a coppice, and you might get a crop out of that. You might have something that has a payback and maintains the natural environment as a result. It might not be a no cost option but it might be a low cost option that might serve very well on the public purse.

Q160 Mrs Spelman: I have a quick question for you. The Environmental Statement sets out indicative times for assumptions to be an offsetting calculation, so for example rather optimistically it suggests that an equivalent biodiversity offset value could

be established for ancient woodland in 10 years. We had evidence last week that there was a view from the Woodland Trust that it would take substantially longer than that. Can I ask DEFRA whether it has been consulted on these timelines?

Sara Eppel: I think the answer to that is “no”, but I am not totally sure. I would have to check with my team. I certainly was not, but my team may have been involved. I can let you know in writing.

Mrs Spelman: That would be great. Thank you.

Robert Goodwill: The timescale for re-establishing ancient woodland is centuries. It is whether you can establish the habitat that will support the species that were in the ancient woodland, and establish the habitat that would develop over time into the sort of ancient woodland that was there before, and what degree of management would be needed to do that. It is a long-term project that we need to ensure continues to be managed in a way that will ensure that we get to that final location.

Things like the translocation of soil with the seeds in it, moving stumps so that they can become coppice, there are a lot of things that can be done to try to accelerate that process. I am in no doubt at all, ancient woodland is ancient and you cannot replace it, but what we can do is put in place the best option as an alternative to ensure that those species can continue to have a habitat to survive in.

Mrs Spelman: Perhaps having in mind the threats and tree diseases that threaten the ancient woodland. Thank you anyway. That was a good clarification.

Q161 Chair: Would DEFRA not have expected to have been consulted about that? Particularly when you are talking about ancient woodland, there is a long time needed to recreate what is happening.

Sara Eppel: We would probably ask our statutory agencies because they are the ecologists and the experts and that is why I need to check. It is quite possible that Natural England has discussed it, but I do not know whether they have had meetings and talked specifically about this aspect.

Peter Miller: Our view on that is that we took this up as part of the conversation that we had around the metrics. We are all agreed that ancient woodland needs careful treatment and there is evidence in the Cottington Woods example. I think we need to continue talking about that and to get this right.

Q162 Dr Offord: I will be very brief. The compensation metric indicates or suggests that ancient woodland can be compensated for, so what was the rationale for including ancient woodland within the metric?

Robert Goodwill: I am just going to say that what we can do is put in a factor. The advice I received was an eight times factor, so it means that for every acre of ancient woodland you take out you have to have eight acres of something else in its place, which contributes towards the net gain. Certainly this is not an exact science and is a reasonably new concept to the UK. Countries like Germany have had this idea of environmental planning gain for quite a long time, but it is something quite new to the UK and one that we—yes, go on.

Peter Miller: I want to be absolutely clear that the ancient woodland lost is irreplaceable. Our response to that is twofold. It is to make sure that we take care of the ancient woodland soils—and that comes back to the example I have been using—and collecting

seeds and that sort of thing, growing on forest transplants, whips and that sort of thing, so that you maintain the genetics of the stock. You move your soils, you move your root balls, but you have to unfortunately cut the trees down. Those trees that can readily come up as coppice, and that is what we see in this particular example I am referring to, seem to do well over a 10-year period, although the maintenance for a further period is recommended. We are doing all of that for ancient woodland to try to make sure that we take advantage of the habitat overall that might be lost, but you cannot reproduce the ancient woodland itself.

Dr Offord: I understand that.

Peter Miller: The metric is an unusual departure and, as Dave has said, this is something that we have to face up to and we have faced up to it. There is merit in the way we are taking this on and facing up to it. We have applied a factor of eight times for the biodiversity offsetting units, which I think you are familiar with, and there are a couple of other factors involved with it. We talked about connectivity being one of them. The other factor is the condition of ancient woodland plays a part in that as well, so there are further factors in this. I think it is a one, two, three type additional factor, so if it is in good condition it is lost, you get the eight times plus the three times and you are looking at something that is a big response, overall, to encourage biodiversity as a result of the impact, but it does not replace the impact in terms of ancient woodland and I want to make sure that we are clear about that.

Q163 Dr Offord: Okay. I understand you can relocate and transplant soils and other things as well, but as you say the ancient woodland cannot be replaced, so why not just leave it out entirely, not even take it into account through the metric?

Robert Goodwill: I think that would be irresponsible and it would send out all the wrong signals in terms of our intentions. We are in new territory. We have built motorways in this country for many years and done nothing like this at all. To try to say that we are not stepping up to the post to deliver on this, we need to demonstrate from the most valuable ancient woodland right down to the arable land or the urban areas that we are going through that we do mean what we say. I think that if we did not do what we could to ensure that the ancient woodland was not replaced but was compensated for, if we are not prepared to do that then we are not prepared to do anything. It is totemic that we can do whatever we can to try to replace that.

With ash and elm dieback there will be tremendous potential to do what we can to try to establish some of those more traditional woodland trees that we are losing around the country. It is a good opportunity to not just try to replace what is there but to move back to what we had 100 years ago.

Chair: Three very quick final questions.

Q164 Simon Wright: I would just like to go back to some of the environmental monitoring issues. Perhaps you could just say briefly what monitoring, enforcement and management measures are currently envisaged for HS2?

Chair: In wildlife and environmental sites.

Peter Miller: As I mentioned, the way that it would get packaged up, in the overall consideration of the project and the overall cost of the project, is taken into account, and through looking back at some of these other more recent large-scale projects. From a

funding point of view it is there. In terms of the monitoring for protected species, for example—and we have the Bechstein’s bats along the line of the route—we have been looking carefully at what the monitoring regime would look like, to in part satisfy the licensing arrangements that we would have to enter into with Natural England for that particular species, but to look at how well the mitigation response is that we have provided within and have set out in the ES. That response in that example is including green bridges, so that we can take up the flight paths of the bat itself, increasing woodland and increasing connectivity through ancient woodlands and in that instance sites of special scientific interest.

Those plans are being set out, the merits of each case are being considered and they are being considered as we speak. That is being carried out and we are talking that sort of thing through with Natural England.

Q165 Simon Wright: You have mentioned Natural England. What about local councils? What role would you expect them to play?

Peter Miller: I think the answer for local councils is their role will be as far as they have biodiversity officers available within the local authority officer mix, and a lot of local authorities now are turning to the Woodland and Wildlife Trusts throughout the country to assist. Where we might end up handing over sites away from the lines—albeit, in part of the Bill consideration at this stage—if there is a covenant over land, for example, and the arrangements would then be handed over to a landowner, or perhaps that land being handed on to Wildlife or Woodland Trusts, I think they will have a role and responsibility to ensure that that biodiversity is assured and they will monitor it. They do this sort of thing very well.

Q166 Chair: With funding transferred over?

Peter Miller: That comes back to the covenant or how that arrangement comes about. That could be a simple funding, it could be an arrangement. As I say, I think there might be opportunities to offer it up and so you might have a crop that then has some sort of payback that has a relationship to the biodiversity. We do not have a full plan of that at the moment, and we won’t until we have heard the debate with local landowners and those who have interest in that land and those agreements are set out, but those will be set out. It is the sort of thing that happened in High Speed Line and other projects.

Robert Goodwill: I will just add I think we will be in a better place to engage with local authorities once the Hybrid Bill process has been completed. At the moment we have a number of local authorities on line of route who are vehemently opposed to the project and will do nothing to co-operate with us in any way, in a way that would ensure that the project was delivered. That will change once they realise it is going to happen, that the Hybrid Bill has been considered and the recommendations have come from the Committee that we will be able to act on appropriately. Then I think we are going to have much better engagement with local authorities to ensure that we deliver this in a way that meets their requirements, but it is very difficult at the moment. We have some local authorities who are very keen and in favour of it, the closer you get to Birmingham the keener they are. I can understand that there are local authority areas that have no real benefit from the line itself because it just goes through them, and they may get benefits from the freed up capacity, but they are representing their constituents and their communities, and they are

difficult to engage with. I do engage with them, but I think we are not at the stage yet where we will be having these conversations.

Q167 Peter Aldous: With regard to environmental mitigation and compensation, is there funding in place for monitoring and enforcement?

Peter Miller: I think my answer in the round is yes. The way that we go about the cost build it is difficult to point to a particular figure. There is no particular line in our budget for monitoring but in the round and in the way that we build up our costs it relates back to the projects that have taken these things into account already. There are some special circumstances, the Bechstein's bats that I have mentioned where there has been some special consideration around that. We look at the merits of each case, so the simple answer is yes; it is included within our funding arrangements.

Robert Goodwill: There are three key documents that make up the environmental minimum requirements. That is the environmental memorandum, the planning memorandum and the heritage memorandum and those three set out the framework within which the nominated undertaker will work with the statutory environmental bodies, with the local planning authorities and the statutory heritage bodies to control the environmental output. That structure will be there and all the bodies that normally engage in these processes, whether you are building a railway line or a new house, will be there to make sure that is complied with.

Peter Miller: Sorry to interrupt you. The important thing there is you might envisage circumstances where, say, something failed, the woodland failed for any reason, and I think there was an example on High Speed 1 where they went through a drought period and the planting failed. The response was you have to provide that mitigation and you make sure that maintenance or whatever was agreed, normally the maintenance period will take it up to a point of maturity and then you hand it on, and that is what I would expect out of this project.

Sara Eppel: On the protected species, Natural England is the statutory agency and once you have established that there is a species on a site they are responsible for making sure that it is protected. That is built into their role.

Q168 Peter Aldous: The Minister referred to the environmental memorandum. I think I am right in saying that does state that any measures will have to be reasonable and practical. Who decides that reasonableness test?

Peter Miller: I think in the first instance it has to be Parliament, because there is a balance to be struck. You can well imagine that if you have a small farm holding and our plan is to put a lot of biodiversity mitigation on to that farm holding, there may well be a debate around the viability of that farm holding. That needs to be rightly heard, and the balance between biodiversity and the effect on the landholding in the way that we put it forward in the Environmental Statement we said, "where it is practicable". We have to say that because we cannot pre-empt that particular debate, so those sorts of tensions in the first instance come through that parliamentary process, I believe.

Chair: All right. I am conscious that it has been a marathon session and you have been really generous with your time. I think you will appreciate that we wish to try to have an inquiry that could be completed as quickly as possible in order to be in the position, hopefully, to be able to pass this into effect in the Hybrid Bill. Can I thank all four of you,

particularly you, Minister, for coming along and answering our questions this afternoon?
Thank you.