preliminaries. This is basically – it was put in by HS2 Ltd quite legitimately if REPA caused the – a one year extension in the project. One way or another that's not going to happen. The REPA tunnel would either be from both ends, or HS2 would get comfortable with doing it from one end. So we take that out. The indirect cost is a percentage of the costs above, so as it goes from a positive to a negative that comes out. The ECP VE goes the other way. HS2 Ltd have ambitions –

441. SIR PETER BOTTOMLEY: You and I may be an expert. ECP VE –

442. MR GRIFFITHS: You're going to have to be the expert, Sir Peter, because I know VE but I don't know ECP.

443. SIR PETER BOTTOMLEY: Give us VE then.

444. MR GRIFFTHS: VE is value engineering.

445. SIR PETER BOTTOMLEY: Thank you.

446. MR GRIFFITHS: Basically, it is another term –

447. SIR PETER BOTTOMLEY: This is a reduction on scheme costs.

448. MR GRIFFITHS: It's reduction on scheme costs, yeah, thank you. And that's how we get to the figure, apart from two other items. HS2 Ltd have allowed for buying land and property. They've put 32.7 in their figure. We believe, and hope, on behalf of the nation, that a bunch of that will be resold and hence we've given them just over a $\pounds 21$ million credit for that to get what we think would be an honest balance.

449. The other thing that we've done on bridges is that they've included for an underbridge, and we haven't been able to find one. Basically on the drawings we don't think that's there, so we've deducted that from the figure as well to give the...

450. SIR PETER BOTTOMLEY: But that's not too important.

451. MR GRIFFITHS: It's not. It's 2.6, yeah. Obviously there's no Promoter cost savings in here; we'll come to that next, I think. Thank you.

452. MS WHARF: Yes. Perhaps if I can just pick up on the next slide, which is the non-Promoter costs, which you've heard. You've heard a lot about these yesterday and

in the previous week, so I'm not going to dwell on them. But to make the point that there is no single, recognised methodology, but nevertheless valuations have been made. And I actually show on that slide the HS2 Ltd SIFT on REPA, because you might see at a very simple level the SIFT had a rating – depended whether it was one star, two stars or three stars – for how they decided that there were values in this area. And here we have the transport, the property blight, tourism and landscape.

453. Now, the end column shows the SQW valuations, and I know that you heard yesterday from SQW. SQW didn't only, in their project, do the long tunnel. They also made assessments of the REPA tunnel. I realise I didn't put in our pack the SQW results because I knew that they would be there yesterday, but nevertheless there is a figure - if you tot those up on the minimum one – of 150 million, which they credit to the REPA proposal, which is of course around about twice actually even what HS2 Ltd say REPA costs. And of course we say actually REPA doesn't cost anything, which was one of the arguments why we say these are all net benefits which come out and aren't costs.

454. We'll come to some of the points later so I think perhaps if we move to the next slide, because I did just want to say something about the property blight one. As Malcolm said this one is actually genuinely all in addition, because we've deducted £20 million from how HS2 Ltd assessed us, because of the fact that they'd put all the properties in that they'd bought, even though they hadn't sold, obviously, yet. So they haven't put the money coming back in to the pot

455. I detected quite an amount of scepticism with the idea that you – that they're real losses to be had. What I would say is that obviously this can be looked at not just in terms of the benefit to housing stock, but also rental income. And I think if you look at it as rental income then it is real money, and basically what we're saying this process that was done is saying that the real amount of pot of rental income is different, depending whether you give a tunnel or don't give a tunnel.

456. And the other point is that yes these are MPVs of benefits. Of course, the big benefit that we all know that HS2 Ltd itself has in the HS2 scheme is the value of business when working on trains. So it is a big underpinning cost in terms of HS2 Ltd is done, in terms of HS2. So it doesn't seem unrealistic to say that one doesn't apply

that also to thinking of the other factors.

457. Perhaps if we move to the other one that we will have mention on, which is transport. And again, these are from the SQW report. They came up with very different figures to what the Peter Brett people did. But it was trying to have a go at the same issue, which was what would be the savings, in terms of having a tunnel, in terms of transport issues in segments. One factor I would just like to say on that, we were given in the materials we received yesterday something about the daily traffic flows under option five, which we were – and the option five is the tunnel we're pursuing to Leather Lane. And it says in it – if anybody can possibly read the key, and it requires a sort of blowing up because it's very fuzzy – but when you get your magnifying glass out it does actually tell you that it's saying on the Chesham Road there's going to be 225 HGVs a day for this extra vent that we're going to have on there. I think the thing that I would say is: how can that be so different to Little Missenden's vent and to Amersham's vent, where you've got figures half or less than half that? So we would – when we get to it, we'd be wanting to ask questions actually about how the traffic has been done in terms of looking at even the additional vent.

458. MR GRIFFITHS: Okay. If we could go forward one slide, please. If you think about your aide-memoire, we're sort of building up the picture of this middle portion here. And this slide shows the sort of environment things that are happening in terms of landscape, community, the noise, the comment that the green tunnel – whilst very much appreciated, is too short – the trucks going down the road.

459. This led us to think, 'Is having a tunnel a matter of national importance?' Without doubt, HS2 is a matter of national importance, and the second reading in the House has established that it will go through an area of outstanding natural beauty. That's fine. Anything that happens on the surface is clearly a matter of national importance. It's an area of outstanding natural beauty, there's a lot of legislation that protects it in that way that's sort of still in place at this five minutes. But actually going underneath is not, per se, a matter of national importance. It's simply a matter of, 'Yes there's some money attached, and there's some benefits attached.' And hence that this particular issue should be dealt with totally in accordance with planning guidance, and arrangements and rules about how you develop that benefit analysis.

460. So if we go on. Doing a normal analysis, the costs – I won't say they're easy, because clearly they're not. But many of the benefits now, the way to calculate them is clearly in the Treasury Green Book, Annex 2, valuing non-market impacts. It's been revised quite considerably over the last few years, but it's there now, it's very clear of the obligations on a promoter. All of the value of time analysis that underpins the business case for HS2 comes from this section of the Treasury Green Book, doesn't come from anywhere else. So what we're looking at here in what's being presented to the Select Committee is analysis from here for time saved on trains, but nothing else has been valued in this way.

461. I might mention a couple of other things. And I do apologise. We've struggled a little bit this morning – I've struggled, in coming to grips with where we can find some of the references in the exhibits, but I think if I explain what I'm going to talk about you'll be very familiar with them anyway. The National Planning Policy Framework 116 sets out the obligations in terms of doing things within an AONB and that's relatively clear. And the Countryside and wayside rates – Rights Act puts clearly the obligations on anyone that's virtually paid for by the Government to give due consideration to all of the issues that we're talking about here when it's in an AONB. So we see quite a lot of evidence for this, and what we don't see is that the duties required of a promoter have been complied with in us sitting here today.

462. Now, if we go to the next slide, what does all of that mean? Well, I want to look at two areas: landscape and dis-amenity. They're in the Annex A. I might just say that the Treasury in Annex A, it's all about their preferred methods, and market based approach and stated preference and revealed preference methods that should be used. And in fact the value of time now – it wasn't like this that long ago, but that now comes from a stated – I think it's stated preference model.

463. So moving to landscape, what the Treasury Green Book would say is that that valuation should be done using contingent valuation, and I'm going to give you an example in a minute as to how that might apply to the REPA tunnel if the work could had been done in accordance with the Treasury Green Book. Now DfT WebTAG is currently – I'm reasonably sure, but someone will tell me if I'm wrong – it's totally a quality based assessment. 'Is this major or minor impact?' DfT have concluded that you can't do some of these things in terms of monetary value, and they've gone for a

qualitative system, and that isn't where the Treasury Green Book is. So most of the SIFT stuff that we've got comes from the WebTAG, looking at these various things.

464. MR MOULD QC (DfT): One thing I can do, just to assist, is to remind Mr Griffiths that the DfT WebTAG methodology is a means of assessing the costs and benefits of a project. And the project in this case is the proposed railway between London Euston, Birmingham Curzon Street, and to make a connection to the West Coast Main Line at Handsacre. We are not promoting a project to run a railway from West Hyde, through the Chilterns, either to Mantle's Wood or to Leather Lane, or to a tunnel portal at Stoke Mandeville. And so there would never have been a WebTAG assessment of a project of the kind that is before you in the petitioner's case. We are promoting a railway from London Euston to Birmingham Curzon Street, with a connection to the West Coast Main Line at Handsacre.

465. MR GRIFFITHS: Thank you, Mr Mould. I take that point; I understand that point. And this is what I was trying to get over with what is in the national importance. I have no issue with you referring in that way to the HS2 project. What I'm saying, the decision to actually go under the ground, taking it out of an area of outstanding natural beauty into the tunnel could be construed – and I'm not asking you to agree – but it could be constructed actually it's just a local project that needs to be dealt with accordingly.

466. SIR PETER BOTTOMLEY: What's actually in front of the Committee, and therefore in front of the Promoters, is whether a 4 km or 5 km extension to tunnelling makes sense, and what are the issues which we take into account. So I think there actually is more agreement than we might have suspected in the last two or three minutes. So if we work on that basis I think we're still on the same –

467. CHAIR: I think we can work – we can move on.

468. MR GRIFFITHS: Okay. I would like to say a little about the DfT / HS2 methodology that's come up with the £1 billion. You're probably aware that HS2 Ltd first did an exercise that came up with £4 billion. And there is a paper – it's a very interesting paper – that is in the exhibits that the DfT did that came up with £1 billion. It is neither in accordance with WebTAG nor with the Green Book. It uses a number of methods and techniques to get to this figure but a large part of the reason... The

£1 billion has not been set out. We actually don't know how much of it applies to the REPA tunnel so it is quite difficult. But one of the big differences between the two exercises was to change lands that had been valued as a category other than intensive farmland to intensive farmland. And that made a substantial difference because basically in this methodology intensive farmland is a very, very small figure.

469. SIR PETER BOTTOMLEY: It's £29,000 and unused land is £1 million.

470. MR GRIFFITHS: Yeah. So I would just like to bring to the Select Committee's attention that we've researched where that low figure came from. I think you probably heard that there were 47 studies that contributed to these valuations but the one for intensive farmland, there were two cases that were looked at: one was in Sweden and one was in Canada. And these are vast areas – they're not the AONB – and there were possible reasons why they came to those figures. So we would contend that they're not really applicable methods to be used in something that is not consistent with other ways of doing things.

471. I'll move on quickly. The disamenity. If you look in the annex A there's a nice case study on looking at disamenity on excavation in national parks and a stated preference exercise of how much people would be prepared to pay to stop that, and it comes up with some interesting figures. I won't take you to the exhibits but it shows this methodology can be used.

472. Okay, if we move to the next slide. Now, I said I'd give you a practical example of how this might work. You know, there's a view that HS2 coming through the area is doing damage to the area and none of us know how to value the extent of that damage. Well, using these techniques, one thing that you could do is to imagine that you had a small housing area and have a stated preference exercise where you get an objective group of people and say 'which does the most damage: is it this housing or is it this line?'. You then change the assumptions until you say 'yeah, that's about the same amount of damage'. You've then got an alternative development that you can value because you've now turned it into building land and at the Chiltern district average rate that would suggest that 25 hectares of land as shown here would be worth £125 million. Now, that is what the Treasury Green Book annex A contingent valuation – that is the sort of technique that would be used. It would clearly need to be done properly, done

objectively in terms of the stated preference modelling; that's what was done for the value of time. It's being done on other projects for other things and we really believe that that's what should have been done here. It hasn't been done. You have heard some other figures where presenters have not been able to explain them. Some of them have come from this technique but I am not saying this is the figure; I don't agree with Chiltern's values or anything else. What I am saying is that this a technique study that could be done. Personally I don't think you need it for the REPA decision but if the longer tunnel's decision is getting difficult this is a study that could be done relatively quickly to bring some objectivity into it.

473. Okay, moving on. Okay, back very quickly then to that sheet, the aide memoir. I think we've been through every box to explain why we are where we are in terms of the difference of view. I don't know whether you've got any further questions on all of that. If not we'll move to the next slide.

474. MS WHARF: Yes, we would have had Cheryl here today. She was to be a witness. Unfortunately she didn't feel well enough to come. She has however written a letter which is at A124(9) and we could read it but we presume that you would like to take it as read.

475. CHAIR: She's written us all letters.

476. MS WHARF: Thank you. But if I just take the message on the bottom there: the case for the REPA tunnel and with 1,200 people is compelling and, as she would put it, the REPA is the minimum solution.

477. So if we move to the last slide and back to your little pyramid. We hope that we've demonstrated that the mitigation currently proposed by HS2 Ltd is well short of reasonable. So obviously we need to strike a new balance with greater mitigation. And it falls to politicians like yourselves to make these difficult calls. Typically, to take the example on the left, it's a delicate balance between costs on one hand and the environment and the community, benefits which are on the other. And this balancing act is always made that much more difficult because of the uncertainty that surrounds the figures. But for REPA we do sincerely believe it's different. We believe that the costs, the community and the environmental benefits actually all favour one outcome and that there is no good reason for not protecting the three communities of Hyde Heath,

of South Heath and Potter Row: the 500 homes and the 1,200 people. And whilst we do remain having our first priority for a long tunnel, we feel there is really nothing that counterbalances the case for REPA. And we have inside the little box, the little pyramid that you're allowed to open, which is the REPA tunnel, the win-win. Thank you.

478. CHAIR: Thank you very much. Can we put up A1238(14) please? Can I ask, when the promoters respond, I would be interested to know: C6, you've got an extension of 2.6 kilometres here costed at £26 million which presumably is to South Heath. To extend it to 4.1 kilometres the cost is £76 million, which is another £50 million for 1.5 kilometres.

479. MR MOULD QC (DfT): That's right.

480. CHAIR: I'd be quite interested to know why the figures change so much because that's quite a big difference in terms of now when you give your response in a moment I'd be quite interested to know why there's a big discrepancy.

481. MR MOULD QC (DfT): Yes.

482. CHAIR: Thank you, Mr Mould.

483. MR MOULD QC (DfT): Thank you. Mr Strachan is going to call Mr Smart.

484. CHAIR: Thank you.

485. MR STRACHAN QC (DfT): Just while he's taking a seat, could I just ask for P7530 to be put on screen? I hope this will assist. Just before I ask Mr Smart to address the main cost point, this is a summary of the costings by HS2 of a number of options. Sorry the text is quite small. It's at the back of a letter which was sent to Mrs Wharf on 17 July. And she has picked up on some of the figures for the option C5 in her presentation. But just by way of introduction to what Mr Smart –

486. SIR PETER BOTTOMLEY: You couldn't possibly have a map just showing us where Liberty Lane and the others are?

487. MR STRACHAN QC (DfT): Yes.

488. MR MOULD QC (DfT): We've got A1258(60). That might be a little bit too

close in for you but try that. A1258(60).

489. MR STRACHAN QC (DfT): This doesn't show that actually. This is Leather Lane. Liberty Lane is further to the right. I think if we show you P7474(38). This is a map of option C5. So here the tunnel portal for C5 is in the proximity of Leather Lane.

490. SIR PETER BOTTOMLEY: And that's the end of the REPA proposal?

491. MR STRACHAN QC (DfT): That's the end of the REPA proposal. Liberty Lane is here. So that was the previous REPA suggestion. And the south portal, which was C6, is broadly speaking in this vicinity.

492. SIR PETER BOTTOMLEY: And the question the Chairman was asking was, in effect, from that position the increase from £26 million to £76 million.

493. MR STRACHAN QC (DfT): Exactly. For that purpose can we just go back to the cost comparison letter that I've just taken you to which was at P7530? And, again, if you just zoom in a bit. Just by way of introduction, Mrs Wharf referred to us assessing a number of costed options, and that's what HS2 has done. There was the original REPA proposal C1 which was to Liberty Lane, which we've just seen. Then option C3 and C4 were considering the possibility of boring from the north as well as from the south. And then C5 is the REPA proposal that they explained today. And then C6 was the boring to the point of the current green tunnel portal. If you just go to the bottom of the page you can see the various net additional costs of each of those options. So the relevant ones for the purposes of the debate we've just had was 76.44 net additional for the REPA tunnel and the 25.78 was the one the Chairman just referred to.

494. SIR PETER BOTTOMLEY: And if you bored to the west end of the green tunnel?

495. MR STRACHAN QC (DfT): Precisely. And the difference in the bored tunnels for the C5 and C6 are shown in that column: 134 versus the 67. And that approximates to about a 1.5 kilometre extension of bored tunnel: the difference between the two. If one calculates using the tunnelling guide or similar, you would end up with I think about a rate of about £40,000 per metre. So the tunnel extension of 1.5 kilometres is coming

out at the cheaper end of a normal bored tunnel. And the reason why one gets to that cost is that above ground one is not saving considerable amounts of money from removing other infrastructure. So to the point you get to the green tunnel, you're replacing the green tunnel costs.

496. CHAIR: So the netted off cost of the green tunnel?

497. MR STRACHAN QC (DfT): Up to the green portal but if you go beyond that, above ground there aren't many structures that you're saving on. There are one or two bridges but there's not much you're saving on, and so the costs of the bored tunnel extension from that point becomes much closer to the normal guide of tunnelling costs where you're paying for literally the costs of boring underground and the distance is 1.5 kilometres. I hope Mr Smart can confirm what I've said is correct but he'll tell you if I haven't.

498. MR SMART: That is correct.

499. SIR PETER BOTTOMLEY: So you're sticking to the tunnelling costs but you're saying that most of the offsets by not having to have the green tunnel and the rest come in that first bit, not in the second.

500. MR STRACHAN QC (DfT): Yes.

501. CHAIR: The first 2.6 kilometres. And then the final 1.5 kilometres the cost rise?

502. MR STRACHAN QC (DfT): Well, the costs become very much standard costs.

503. SIR PETER BOTTOMLEY: Gross and net are the same?

504. MR STRACHAN QC (DfT): It works out pretty close to the tunnelling guide.

505. MR GRIFFITHS: Could I just say that obviously the things that we said overall about boring costs and cutting costs –

506. MR STRACHAN QC (DfT): I'm going to address that now. So can we just go back then to... I want to deal with tunnel boring costs. You'll recall from the aide memoir that the petitioners referred to that the principal element of cost difference relates to tunnel boring. It's about, I think, £90 million but it's a principal difference on