

A57 Link Roads

TR010034

**9.63 Comments on Keith Buchan's
submission REP4-031**

Rule 8(1)(b)

Planning Act 2008

Infrastructure Planning (Examination Procedure) Rules 2010

March 2022

Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Examination Procedure) Rules 2010

A57 Link Roads Development Consent Order 202[x]

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Author:	A57 Link Roads Project Team, National Highways and Atkins

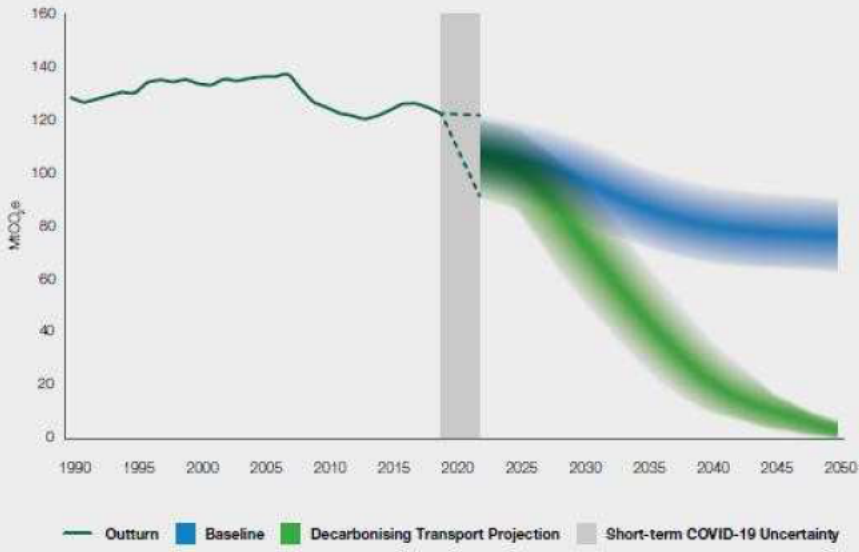
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1. REP4-031 Keith Buchan on behalf of CPRE Peak District and South Yorkshire Branch - Written Summary of oral submissions at hearings and post-hearing written submissions requested by the Examining Authority

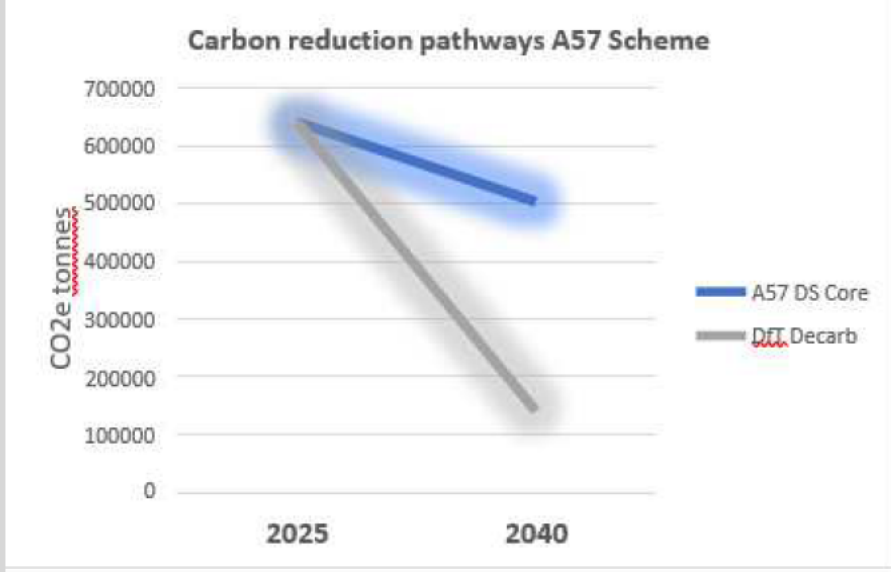
Ref.	Question	National Highways Response
	<p>There is no doubt that policies on carbon emissions affecting this scheme have changed very significantly in the last few years. This includes legislation, such as net zero and parliamentary acceptance of the Committee on Climate Change 6th Budget, policy statements such as the DfT Decarbonisation Strategy, and ongoing work revising guidance, for example the commitment in the Decarbonisation Strategy for a review of NPS and the Secretary of State's statement to Parliament on 22nd July 2021 with a similar commitment. Meanwhile the existing NPS is in force. This Examination therefore is taking place immediately following a period of major change. It has to dealwith that in the context of what is in legislation and policy but not yet necessarily in habitual use by practitioners or clearly set out in fresh guidance. This submission seeks to clarify the position referring to the new legislative and policy context while still being guided by the NPS, in particular paragraph 5.17, which states:</p> <p>“It is very unlikely that the impact of a road project will, in isolation, affect the ability of Governmentto meet its carbon reduction plan targets. However, for road projects applicants should provide evidence of the carbon impact of the project and an assessment against the Government's carbon budgets.”</p> <p>In relation to that statement there are five important questions considered in this submission:</p>	

Ref.	Question	National Highways Response
	<p>Which carbon should be counted and costed?</p> <p>What is the real “Do Minimum”?</p> <p>What is the cost of undermining Government and local policy?</p> <p>What is significant?</p> <p>What about the De Minimis argument and the NPS?</p>	
	<p>1) Which carbon should be counted and costed?</p> <p>In the current system, a marginal change is assumed between a Do Minimum and a Do Something future. To assess this, the appraisal must calculate how much carbon will be produced by the forecast levels of traffic. This is done in a simplified way by the DfT programme TUBA, and in a more complex way using DMRB guidance. The latter is used for the carbon cost calculations. TUBA covers a shorter time period than the DMRB method so is an underestimate. Despite this, the figures show that the total amount of carbon being emitted in a year is far higher than the marginal change in carbon over 60 years. The reduction in carbon from electrification is clear, although it does not reach zero in 2051.</p> <p>The question considered here is how much of that total carbon is in excess of the amount required to meet the net zero/6th Carbon Budget requirements.</p>	<p>This alternative method of assessment is not compliant with DMRB LA 114.</p> <p>DMRB LA 114 has been developed as a standard for all highways projects to provide a consistent approach for decision making and to demonstrate their contribution to reduced GHG emissions in line with the EIA Directive 2011/92/EU and the Climate Change Act 2008.</p> <p>For operational emissions, the baseline scenario (do-minimum) is the GHG emissions without the project, which have been identified for the current and future baseline using the traffic modelling for the Scheme has been undertaken in line with Transport Appraisal Guidance published by the Department for Transport (DfT).</p>

Ref.	Question	National Highways Response												
	<p>Table 1</p> <p>Carbon emissions A 57 Do Something Core forecast</p> <table border="1" data-bbox="253 405 1126 632"> <thead> <tr> <th data-bbox="253 405 745 501">CO2e emissions based on TUBA(tonnes) per year</th> <th data-bbox="757 405 943 501">DM</th> <th data-bbox="954 405 1126 501">DS</th> </tr> </thead> <tbody> <tr> <td data-bbox="253 509 745 544">2025</td> <td data-bbox="757 509 943 544">641379</td> <td data-bbox="954 509 1126 544">641842</td> </tr> <tr> <td data-bbox="253 552 745 587">2040</td> <td data-bbox="757 552 943 587">503272</td> <td data-bbox="954 552 1126 587">503643</td> </tr> <tr> <td data-bbox="253 595 745 630">2051</td> <td data-bbox="757 595 943 630">480538</td> <td data-bbox="954 595 1126 630">480650</td> </tr> </tbody> </table>	CO2e emissions based on TUBA(tonnes) per year	DM	DS	2025	641379	641842	2040	503272	503643	2051	480538	480650	
CO2e emissions based on TUBA(tonnes) per year	DM	DS												
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	<p>Thus the cost of the Do Something in carbon terms should be tested against what the Government considers is essential to meet its climate change obligations. If the Do Minimum is assumed to fail to meet Government commitments it cannot be considered to be realistic. The key assumption is that nothing would be done by central or local Government in response and this cannot be the correct basis for comparison. To test this, carbon emission data for the DM and DS were requested from NH. Only TUBA data was available but at least provides a minimum guide.</p> <p>From the table above, the Do Something presented in this case shows clearly that there will be, after allowing for some electrification of the car fleet up to 2050, insufficient decrease in carbon to meet Government requirements. These are reflected in the chart in Figure 2 (page 45) of the Decarbonisation Strategy, shown below.</p> <p>Translating the current scheme data from TUBA in Table 1 gives the chart below</p>	<p>Please refer to the 'Applicant's response to Issue Specific Hearing 2 Item 6 c) and d) Cumulative Carbon Assessment' (REP5-026).</p> <p>Table 1 of this response includes the results of a sensitivity test for operational emissions, which is based on the rate of improvement shown in the chart in Figure 2 of the Decarbonisation Strategy. The DFT have approved this test.</p>												

Ref.	Question	National Highways Response
	<p data-bbox="248 363 1059 416">Figure 2: Decarbonising Transport domestic transport GHG emission projections, versus the baseline*</p>  <p data-bbox="302 965 1075 997">— Outturn ■ Baseline ■ Decarbonising Transport Projection ■ Short-term COVID-19 Uncertainty</p>	

Ref.	Question	National Highways Response
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Obviously we only have the data supplied by NH but the key point is that the NH best estimate shows the scheme as presented is delivering a huge amount of carbon in excess of the Government legally confirmed targets. Our serious reservations on this are included after Table 5 below.

Of course, a more aggressive electrification programme could deliver further reductions, together with HGV electrification, for example through catenaries. However, some demand reduction will be required even in this instance. This is clear in the Committee on Climate Change (CCC) 6th Budget.

The table below is extracted from the CCC transport sector document published with the 6th Carbon Budget.

Ref.	Question	National Highways Response																												
	<p>Table 2 Range of car traffic reductions from different measures</p> <table border="1"> <thead> <tr> <th></th> <th colspan="2">Traffic</th> <th colspan="2">Trips</th> </tr> <tr> <th></th> <th>Tech (e.g. home working)</th> <th>Car occupancy</th> <th>Walk and cycle</th> <th>Bus</th> </tr> </thead> <tbody> <tr> <td>2030</td> <td>-1 to -4%</td> <td>-6%</td> <td>-5 to -7% <i>(-1 to -2%)</i></td> <td>-9 to -12% <i>(-5 to -7%)</i></td> </tr> <tr> <td>2050</td> <td>-4 to -12%</td> <td>-19%</td> <td>-9 to -14% <i>(-3 to -4%)</i></td> <td>-17 to -24% <i>(-10 to -14%)</i></td> </tr> </tbody> </table> <p>It is important to note that the trip reductions for sustainable modes are higher than the traffic reductions would be because of lower trip lengths¹. Using the standard NTS data for average trip length which CCC uses the trips have been converted to traffic (vehicle kilometres) in the figures in italics. The extensive work by CCC is used for the final central requirements in Table 3 below. These are reductions on the baseline – i.e. in real terms traffic is predicted to grow (as in the A57 NH appraisal) but the CCC identifies the required reduction on that figure.</p> <p>Table 3</p> <p>6th Carbon Budget combined demand management required</p> <table border="1"> <thead> <tr> <th></th> <th>Combined impact: car traffic reduction on baseline (as vehicle kilometres)</th> </tr> </thead> <tbody> <tr> <td>2030</td> <td>-6%</td> </tr> <tr> <td>2040</td> <td>-12%</td> </tr> <tr> <td>2050</td> <td>-17%</td> </tr> </tbody> </table> <p><i>Note: 2040 is derived from CCC table as a half way point</i></p>		Traffic		Trips			Tech (e.g. home working)	Car occupancy	Walk and cycle	Bus	2030	-1 to -4%	-6%	-5 to -7% <i>(-1 to -2%)</i>	-9 to -12% <i>(-5 to -7%)</i>	2050	-4 to -12%	-19%	-9 to -14% <i>(-3 to -4%)</i>	-17 to -24% <i>(-10 to -14%)</i>		Combined impact: car traffic reduction on baseline (as vehicle kilometres)	2030	-6%	2040	-12%	2050	-17%	<p>It is not clear how the data within Table 5 has been used to derive a cost of £223 million. Reference is made to a “carbon cost toolkit”, which is thought to be the DfT Transport Appraisal Guidance greenhouse gases workbook. The cost of £120 million for a 2051 cut off appears to have been derived from the data in the column “difference in tCO₂e” which is the difference in emissions for the Without scheme (DM) low growth compared to With Scheme (DS) under central growth (as reported in the Case for the Scheme). This comparison is not in accordance with the DfT Transport Appraisal Guidance. The comparison of With Scheme (DS) and Without Scheme (DM) should be under consistent growth assumptions in both scenarios.</p>
	Traffic		Trips																											
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	<p>This does not appear to be taken into account in the NH traffic forecasts. What should happen is that a future scenario which achieves these reductions should be the one which is compared to the Do Something scheme, which is clearly part of a future which encourages driving rather than the modes and behaviour change in the CCC 6th Budget.</p> <p>There is a lack of basic data for this scheme which has been a source of ongoing frustration. This makes it hard to assess how much additional carbon over the level required to meet the 6th Carbon Budget is being produced. The best indicator supplied so far is the NH “Low” forecast. This has carbon emissions in the TUBA table for a Do Minimum which can be compared to the Core (baseline) forecast for the Do Something. This reveals reductions as below.</p> <p>Table 4</p> <p>Carbon emissions A 57 Do Something Core compared to Do Minimum Low</p> <table border="1" data-bbox="255 1054 1079 1206"> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td>2030</td> <td>-6.3%</td> </tr> <tr> <td>2040</td> <td>-9.2%</td> </tr> <tr> <td>2050</td> <td>-10.9%</td> </tr> </tbody> </table> <p>While 2030 Low is close to the 2030 CCC requirement, the Low forecast increasingly underperforms at the required level. Despite this it is possible to use the Low forecast to indicate the</p>			2030	-6.3%	2040	-9.2%	2050	-10.9%	
2030	-6.3%									
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2050	-10.9%									

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	<p>missing amount of carbon reduction and, most importantly, its cost.</p> <p>The TUBA table supplied by NH is shown below, with the carbon emission differences calculated by MTRU.</p> <p>Table 5 NH TUBA carbon outputs</p> <table border="1" data-bbox="250 582 1164 1295"> <thead> <tr> <th data-bbox="250 582 421 662"></th> <th data-bbox="421 582 712 662">Core Scenario</th> <th data-bbox="712 582 1012 662">Low Growth Scenario</th> </tr> </thead> <tbody> <tr> <td data-bbox="250 662 421 805">GHG Benefit from DMRB</td> <td data-bbox="421 662 712 805" rowspan="2">-17.45</td> <td data-bbox="712 662 1012 805" rowspan="2">Not assessed</td> </tr> <tr> <td data-bbox="250 805 421 917">(£m, 2010 PV)</td> </tr> <tr> <td data-bbox="250 917 421 1061">GHG Benefit from TUBA</td> <td data-bbox="421 917 712 1061" rowspan="2">-0.46</td> <td data-bbox="712 917 1012 1061" rowspan="2">-0.79</td> </tr> <tr> <td data-bbox="250 1061 421 1220">(£m, 2010 PV)</td> </tr> <tr> <td data-bbox="250 1220 421 1295"></td> <td data-bbox="421 1220 712 1295"></td> <td data-bbox="712 1220 1012 1295"></td> </tr> </tbody> </table>		Core Scenario	Low Growth Scenario	GHG Benefit from DMRB	-17.45	Not assessed	(£m, 2010 PV)	GHG Benefit from TUBA	-0.46	-0.79	(£m, 2010 PV)				
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	CO2e emissions based on TUBA (tonnes)	DM	DS	DS-DM	DM	DS	DS -DM	Difference tCO2e	
	2025	6413 79	6418 42	462	60134 1	6020 11	668	40,501	
	2040	5032 72	5036 43	371	45710 1	4574 33	330	46,542	
	2051	4805 38	4806 50	113	428,3 25	4286 10	286	52,325	
	<p>The differences between the two can be annualised from the point years assuming a straight line. These can then be put through the carbon cost toolkit to provide an estimate.</p> <p>This produces a cost of £223million over the 60 year appraisal period and would turn the BCR negative</p> <p>As a test of whether the carbon deficit is robust the carbon toolkit was run against a cut off date of 2051 (on the optimistic assumption that everything is net zero by then). This still produced a carbon cost of over £120million.</p> <p>At this stage we wish to say that there must be serious concerns over the way in which carbon has been treated overall for this scheme. Our view is that the modelling includes some electrification but apparently not the latest commitments in 2030 and 2035. For this reason much of the NH work must be considered with a high level of uncertainty. However, at the</p>								

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	<p>moment everything done for this submission has followed the same procedures as NH so can be directly compared.</p>	
	<p>What is the real “Do Minimum”?</p> <p>This issue is familiar to transport practitioners and is directly related to the previous section. In the current system, a marginal change is measured between a Do Minimum and a Do Something. This approach was justifiable when comparing futures in which the existence of the Do Something was totally disconnected from the Do Minimum, in this case building more road capacity in Greater Manchester has no impact on what the future without would be. Hence the same core forecast is used for both in the NH analysis. This is fundamentally wrong.</p> <p>In fact, there are two different futures being considered, the first is one in which there is less traffic, which requires a shift in competitive advantage toward sustainable modes. The other is one in which driving is given sufficient encouragement that traffic will continue to rise. The latter is the core forecast. However, DfT has moved to what it calls “scenario” forecasts which allow for different assumptions about the future. It has also published the uncertainty toolkit, which suggests that the modelling and forecasting parameters should be considered, including the impact of demand management and behaviour change. This was set out in our previous submission so is not repeated here. However this package is not the same as the old “low, central, high” forecast.</p> <p>It is also important to say that this is not dealt with by modest adjustments to trip making in the modelling through the Diadem software. This starts with the same base forecast and has only minor impacts, as shown clearly in the NH documentation.</p>	

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	<p>Evidence of the widespread understanding and acceptance by the profession of the approaches set out in questions 1 and 2 can be found in the PTRC paper submitted with this submission and the TPS Annual Review extract in the Annex.</p>	
	<p>What is the cost of undermining Government and local policy?</p> <p>The second is the Strategic fit of the scheme with relevant national and regional policies on carbon, including how it fits with Committee on Climate Change budgets. It is clear that encouraging people to use alternatives to the car needs to make them relatively more attractive. This can be done by making them faster or cheaper or more convenient (in the case of buses more frequent as well). The other method is to make car use less convenient or costly. Such approaches are well known and often referred to as “stick and carrot”. Clearly anything which makes car journeys faster will move that balance of competition against sustainable travel, i.e. creates a carrot in the wrong direction.</p> <p>At the moment Government policy is focussed on travel in towns and cities and there are clear targets for changes in the mode share for walking and cycling, and indications that mode switch is desired for public transport.</p> <p>Using the information now obtained from NH it has been possible to assess how much of the economic advantage is provided to car use reasonably considered to fall within the scope of those targets. This information is not in the original submissions to the Examination. It is covered in more detail in the submission on the A57 scheme and negative impact on Government and local policies for sustainable travel.</p>	<p>With respect to the comment that ‘<i>Government policy is focussed on travel in towns and cities and there are clear targets for changes in the mode share for walking and cycling, and indications that mode switch is desired for public transport</i>’, it should be noted that the Scheme is not located in the vicinity of a group of towns and villages that are currently as well served by public transport as larger towns and cities, therefore the policies that will impact on the switch to public transport and sustainable travel are less effective or will take longer to put into place for the area surrounding the Scheme. The existing public transport infrastructure is more costly and less convenient than it is in larger towns and cities.</p> <p>The TDP identifies that, while public transport, cycling and walking should be the first choice for those who can take it, it also states that (page 5) ‘<i>Our ambitious roads programme...will continue to reflect that in any imaginable circumstances the clear majority of longer journeys, passenger and freight, will be made by road; and that rural, remote areas will always depend more heavily on roads.</i>’</p> <p>The first objective of the Scheme is ‘<i>reducing congestion and improving the reliability of people’s journeys through Mottram-in-Longdendale, Hollingworth and Tintwistle and also between the Manchester and Sheffield city regions</i>’. By directing traffic travelling longer journeys, including freight,</p>

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	<p>Another approach to this has been suggested by Professor Greg Marsden from the DecarboN8 partnership. This includes academia and local authorities (including Manchester and Sheffield) and runs a number of innovative projects. He proposes that schemes which have forecasts in excess of the CCC required reductions should identify specific additional reductions elsewhere and count the cost in the appraisal.</p>	<p>onto the SRN and away from local roads, it will help to make local journeys, including those by public transport, more reliable. Walking and cycling options will also become more attractive. The Scheme will therefore help promote the switch to sustainable travel.</p>
	<p>What is significant?</p> <p>In this submission the question of whether NH has counted the amount of additional carbon correctly is considered in a later section. However, it is important to note that there is an issue over the significance of the amount estimated by NH and used for its carbon assessment. During the Issue Specific Hearing it was clear that a straightforward and widely accepted definition of what was a significant amount of additional carbon was not available. There are two critical aspects to this specific issue:</p> <p>is the amount calculated by NH significant?</p> <p>should the significance of amount used by NH be viewed “in isolation”?</p> <p>In relation to the first, the 401,000 tonnes of CO₂e calculated by NH can be judged against published emission reductions which are part of the net zero strategy and 6th Carbon Budget. For example, the Committee on Climate Change estimates that an average battery electric vehicle (BEV) bought today will “save more than 35 tonnes of CO₂ over their lifecycle versus a conventional equivalent”.² Thus to compensate for the A57 NH carbon deficit an extra 11,457 BEVs would have to be bought this year, above what would otherwise be the case. This number rises over time because</p>	<p>Please refer to the Applicant’s response to question 8.3c of the ExA’s second written questions, which refers to significance thresholds (TR010034/EXAM/9.60). This has been submitted at Deadline 6.</p> <p>Please also refer to the document ‘Applicant’s response to Issue Specific Hearing 2 Item 6 c) and d) Cumulative Carbon Assessment’ (REP5-026) which refers to significance.</p>

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	<p>conventional vehicles are getting more efficient, for example if they had to be bought in 2025 the number would be higher.</p> <p>An alternative would be to consider the Government's urban policies for walking and cycling, these are estimated to save between 1million and 6million tonnes CO2e by 2050, clearly displaying a high level of uncertainty. The A57 NH carbon deficit (over a longer timescale) would be 40% of the lower figure and 7% of the higher level of achievement. The cost of the measures to achieve the 1-6million tonnes reduction is £2billion over the first 5 years. Despite the wide range in estimated impact, using extra measures of this type to compensate for the A57 NH carbon deficit would be in the hundreds of millions of pounds.</p>	
	<p>What about the De Minimis argument and the NPS?</p> <p>The final issue is probably the best known - the "de minimis" argument – where the amounts of carbon from an individual action (or scheme) are considered too small on their own to undermine carbon reduction.</p> <p>This has been argued over extensively and to summarise: if this scheme were an isolated occurrence with no accompanying or associated actions or schemes this might apply. This might be the case if there was only one road scheme in RIS2 or elsewhere in the UK. Clearly this condition does not hold true. A further issue is that the existence of a number of schemes to increase road capacity underpins the road traffic forecasts (and has done since the 1997).</p>	<p>Please refer to the section under the heading 'The appropriate geographical scale of assessment of greenhouse gas emissions' (section 2.2.10 to 2.2.20) in 'Applicant's response to Issue Specific Hearing 2 Item 6 c) and d) Cumulative Carbon Assessment' (REP5-026). This presents the case for there being no legal requirement to assess the impact of an individual project against the total carbon emissions from RIS 1 and RIS 2.</p> <p>In section 2.2.7 it is argued that the traffic model for the Scheme is inherently cumulative. This is backed up by IEMA's updated GHG emission assessment guidance¹, which states: '<i>Effects of GHG emissions from specific cumulative projects therefore in general should not be individually assessed, as there is no basis for selecting any particular (or more than one) cumulative project that has</i></p>

¹ IEMA, Assessing Greenhouse Gas Emissions and Evaluating their Significance, 2nd edition (February 2022)

Ref.	Question	National Highways Response
	<p>The amount of carbon increase suggested by NH is an isolated figure. It assumes that there is no relationship between this scheme and RIS2 as a whole. A more realistic question in this context would be: what would the position be if every scheme in RIS2 produced as much carbon as the A57 proposal?</p> <p>In the A57 case there is capital expenditure of about £180million in today's prices. RIS2 is valued at £24.5billion but about £14billion is on capital schemes. If all of them produced as much carbon as the A57, it would amount to over 31million tonnes of CO₂e. This is approaching the estimate for the total impact of electrifying the whole bus and coach fleet in the Decarbonisation Strategy (35-37million tCO₂e). The total impact of electrification of all cars, taxis and vans is 620-850million tCO₂e.</p> <p>RIS2 should not allow schemes which produce carbon on this scale to remain in the programme if the Government target is to be met.</p>	<p><i>GHG emissions for assessment over any other'</i>. The guidance goes on to explain that cumulative contributions of other GHG sources which make up that context should be incorporated. In this case the contextualisation is sector bound (e.g. a sector level net zero carbon roadmap), and so consideration of cumulative contributions to that context will be within that boundary.</p> <p>The Applicant cannot comment on the robustness of these calculations.</p>

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