

From: [Andrew Boswell](#)
To: [A57 Link Roads](#)
Subject: Corrigenda: Submission of D8 submitted (update)
Date: 12 April 2022 14:30:12

Dear Edwin

Re: my D8 Submission

This sentence on page 2 on the submission (at end of "Summary") is potential confusing.

"The technical details are now laid out in my main submission. "

It would clearer as follows:

"The technical details are now laid out in the main sections of this submission below. "

Please can you publish this email as a Corrigenda notice. I am off-grid and not with my computer this week! Many thanks.

Dr Andrew Boswell

± SCIENCE ± POLICY ± LAW ±

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DEADLINE D8 SUBMISSION

I am an independent scientist and environmental consultant, working at the intersection of science, policy, and law, particularly relating to ecology and climate change. I work as a consultancy called Climate Emergency Policy and Planning (CEPP).

In so far as the facts in this statement are within my knowledge, they are true. In so far as the facts in this statement are not within my direct knowledge, they are true to the best of my knowledge and belief.

SUMMARY

This submission combines my summary for the ISH3, and my response to what purports to be a “cumulative carbon assessment” [REP5-026]. It does **not** contain a cumulative carbon assessment, nor show where one exists, and the Environmental Statement still does not comply with the EIA regulations.

There is a lack of the full details of the assumptions, data and computer modelling of the traffic models and the carbon data extracted, across the Environmental statement and the “cumulative carbon assessment” document. This has been identified by other interested parties, and proportionate disclosure, which would enable IPs to interrogate the data and arguments, has been systemically denied by the applicant. This has led to a serious data and algorithmic transparency issue. New data and methodology (the “TDP Sensitivity test”) has been introduced in REP5-026 but has not been explained, nor even interpreted: it is presented as a “black box”. There is now a large amount of data requested, and questions needing resolution, and this submission adds to that.

It should be emphasised that interested parties are requesting this information for very serious reasons including:

- ensuring that the SoS can be satisfied that the material provided by the applicant is sufficient for him to reach a reasoned conclusion on the significant effects of the proposed development on the environment;
- ensuring that the Environmental Statement is compliant with the EIA regulations and the NN NPS.

The ExA has proposed a Rule 17 letter late in the examination. Given the volume of data and methodological information now outstanding, I respectfully suggest that consideration should now be given to the EIA Regulation 20 process. This would facilitate suspending the examination so that an adequate Environmental Statement can be made published by the applicant. The technical details are now laid out in my main submission.

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1 INTRODUCTION

1.1 *Deadline 8 (D8)*

1 This is my submission for Deadline 8. It follows a preliminary written representations at REP2-064, and attendance at the ISH2 on February 10th. I apologise to the ExA, and the parties, that I have been absent from the examination since then until the ISH3. Between December and February, I was involved providing care, with my family, to my dying father, who subsequently died in February, and I am only just returning to some normal life following these three months.

2 I will comment on:

- A. A57/REP5-026, “9.59 Applicant’s response to Issue Specific Hearing 2 Item 6 c) and d)”, “Cumulative Carbon Assessment”
- B. Matters raised at the ISH3 hearings, April 5th and April 6th. This D8 submission will cover:
 - a. summarising my own comments at the hearings; and
 - b. my comments on the Applicant’s verbal submissions under Item 2 on “Transport Networks and Traffic Policy” and Item 6 on “Climate Change”.

These sections are interlaced into the main narrative and will be identified “ISH3” in the section title.

- C. With reference to the Applicant’s response of February 9th, 2022, to the Secretary of State Consultation letter on the **A38 Derby Junctions** scheme, I **provide it in Appendix B** and will make passing reference to it. I refer to it as A38/RESP-8.122.

1.2 *Definitions*

3 I refer to ExA to my submission at REP2-064 for discussion on definition and usage of “cumulative” and my definitions of “absolute emissions” and “differential emissions”, as applied to carbon emissions.

2 LACK OF TRANSPARENCY OF DATA AND COMPUTER MODELLING

- 4 The “Cumulative Carbon Assessment” [A57/REP5-026] contains new data including **two** new sets of data for operational carbon emissions at Table 1:
- changes due to changing the DEFRA Emission Factor Toolkit versions and possibly the BEIS carbon factors (see later); and
 - the application of a nationally conglomerated “rate of improvement” based on TDP, Figure 2 (referred to by the applicant as “the TDP Sensitivity test”).
- 5 In all cases, the full details of the assumptions, data and computer modelling leading to these data changes has not been provided. Further, the modelling behind TDP, Figure 2 has not been published. Consequently, the nationally conglomerated “rate of improvement” based on it, and as applied to the data figures in Table 1, have been applied as a black-box calculation. (More details on this are explained in later sections).
- 6 As such, I am deeply concerned about the lack of transparency regarding the information and data about the traffic models on which the operational carbon emissions assessment is based. This undermines the current examination process which seeks to ensure that the SoS is satisfied that the material provided by the applicant is sufficient for him to reach a reasoned conclusion on the significant effects of the proposed development on the environment.
- 7 This lack of information also limits the public’s involvement in the EIA process which is important not just to ensure compliance with the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (“EIA Regs”), which seek to ensure a process by which the public is given an opportunity to express their opinion on environmental matters¹, but also the Aarhus Convention in respect of public participation².
- 8 In short, the public can only participate and give a reasonable opinion on environmental matters if sufficient background data on projected environmental effects is provided. The applicant in this case has not done this. In order to comply with the EIA Regs, the further information which I highlight is not only reasonably required to facilitate meaningful public engagement in the examination but to ensure that the SoS is able to satisfy his duties under the EIA Regs.
- 9 The requirements of EIA regulation 14(2) include the information set out in Schedule 4 which states at (6):

“A description of the forecasting methods or evidence, used to identify and assess the significant effects on the environment, including details of difficulties (for

¹ (see Berkeley v SSE [2001] 2 AC 603 (section 8 of Lord Hoffmann’s speech) and Commission of the European Communities v Federal Republic of Germany (Case C-431/92) at [35])

² in particular Article 6 on public participation in decisions on specific activities, sub-paragraph (6) which requires public access to relevant information about a proposed project, including at least a “description of the significant effects of the proposed activity on the environment”

example technical deficiencies or lack of knowledge) encountered compiling the required information and the main uncertainties involved.”

There are clearly numerous issues raised by myself and other interested parties, relating to insufficient explanations and data from “forecasting methods”, which indicate that the Environmental Statement does not comply with this schedule under the EIA Regulations.

- 10 Further, I would note that the Government recently announced an "Algorithmic Transparency Standard" at <https://www.gov.uk/government/collections/algorithmic-transparency-standard> under the Central Digital and Data Office in the Cabinet Office. Under the new approach, government departments and public sector bodies will be required to explain where an algorithm was used, why it was used and whether it achieved its aim. There will also be an obligation to reveal the architecture behind the algorithm. Although, currently being piloted, it indicates the direction of travel for transparency on data, algorithms and modelling architectures. The current presentation of material by the applicant falls far short of any standard of transparency. More details are provided at Appendix A.
- 11 The lack of transparent information and data about the traffic models from which operational carbon emissions are calculated **places severe limitations on any independent review and scrutiny**, by interested parties, of the high-level figures published in the Environmental Statement. It is, therefore, not possible to fully respond to REP5-026, without publication of the full details of the assumptions, data and computer modelling involved. The applicant must provide the additional information required and it is respectfully suggested that the ExA should consider it for the Rule 17 letter, or the EIA Regulation 20 process, if it has not been provided by then.

3 EIA REGULATION 20

- 12 This section is provided because I respectfully suggest that EIA Regulation 20 may be considered as an alternative to a Rule 17 letter to provide the necessary additional information to the examination.
- 13 Regulation 20 of the EIA Regulations provides for a set procedure to be followed in cases where an “*applicant has submitted a statement that the applicant refers to as an environmental statement*” (Regulation 20(2)(a)) and “*the Examining authority is of the view that it is necessary for the statement to contain further information*” (Regulation 20(2)(b)).
- 14 “Further information” is defined in Reg 3 as meaning:

“additional information which, in the view of the Examining authority, the Secretary of State or the relevant authority, is directly relevant to reaching a reasoned conclusion on the significant effects of the development on the environment and which it is necessary to include in an environmental statement or updated environmental statement in order for it to satisfy the requirements of regulation 14(2)”.

15 Regulation 20(1) and (3) essentially requires that – where further information is considered necessary (under Regulation 20(2)) - the applicant must provide that “further information”. Under Regulation 20(1)(c), “*consideration of the application would be suspended*”, and, subsequently, there must be a new public notification and consultation process, which allows interested parties (not limited to those interested parties who have already been involved in the examination process) to consider and comment on the environmental statement and “further information”.

4 **UPDATED IEMA GUIDANCE ASSESSING GREENHOUSE GAS EMISSIONS AND EVALUATING THEIR SIGNIFICANCE**

16 In February 2022, IEMA released version 2 of their “Assessing greenhouse gas emissions and evaluating their significance” guidance, supplied at Appendix D. Although this is not a statutory document, the applicant has referred to it as relevant and valuable at the ISH3 hearing. The Institute of Environmental Management & Assessment (IEMA) state that they are the professional home of over 18,000 environment and sustainability professionals from around the globe.

17 The guidance is geared towards EIA compliance:

“The aim of this guidance is to assist greenhouse gas (GHG) practitioners (hereinafter referred to as ‘practitioners’) with addressing GHG emissions assessment, mitigation and reporting in statutory and non-statutory Environmental Impact Assessment (EIA).” [from the Introduction]

18 The IEMA guidance supports several broad issues which I have highlighted as missing in the applicant’s Environmental Statement, as follows:

4.1 IEMA: Contextualising a project’s carbon footprint

19 In REP2-064, section 3, I laid out how local, national and regional assessment of carbon emissions is supported by the guidance documents to the EIA Regulations. The IEMA guidance provides further support for this. The relevant section in this guide is section 6.4, “Contextualising a project’s carbon footprint”.

20 With respect to the applicant’s Environmental Statement where only an assessment is made against the carbon budget for the entire UK economy, IEMA say:

*“The **starting** point for context is therefore the percentage contribution to the national or devolved administration carbon budget as advised by the CCC. However, the contribution of most individual projects to national-level budgets will be small and so **this context will have limited value.**”* [my emphasis]

21 The guide goes on to state:

“It is good practice to draw on multiple sources of evidence when evaluating the context of GHG emissions associated with a project.”

And identifies “local or regional carbon budgets developed by local authorities and researchers (e.g.the Tyndall Centre at the University of Manchester)” as “**a more pertinent scale for individual projects** and local decision-making”, and reflective of “regional factors such as concentration of industry”). [my emphasis]

4.2 ISH3: Item 6a) - 6d): Local policies

22 The applicant has only undertaken the “starting point” in the IEMA guidance – assessment against national carbon budgets.

23 The ExA has stated that he is minded to consider local policies as “important and relevant” matters in determining the application, which is consistent with the IEMA guidance. Therefore, local policies and carbon budgets should be considered, and assessment of carbon impacts made against them. when they exist. IEMA provide helpful elaboration as below in the diagram clipped below:

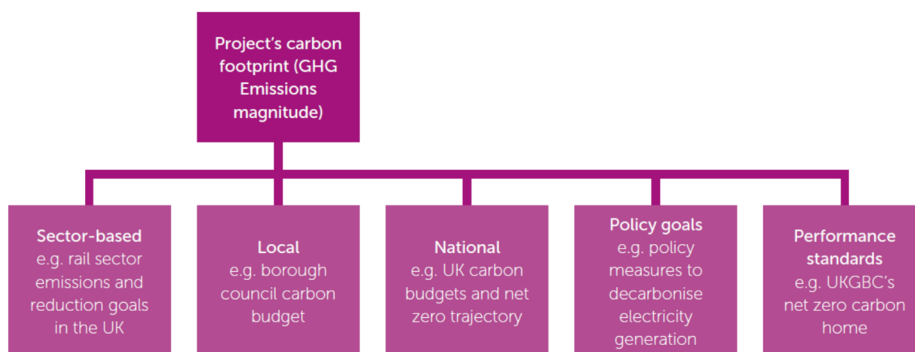


Figure 6: Good practice approaches for contextualising a project's GHG emissions

4.3 ISH3: Item 7 comments

24 At my Item 7 “General oral submission”, I raised concern about a potential confusion on what had been said by the applicant at ISH3, Item 6c in the discussion on local and regional policies and targets.

25 The confusion was between the environment impacts themselves (in this case global GHG emissions) and the measurement of them, and assessment against budgets or thresholds. With GHGs, the environmental receptor is the global atmosphere and there is no local receptor in that sense. I agree with that, and indeed the IEMA guidance makes this clear.

26 However, that does not mean that quantified budgets, targets or thresholds at local and regional levels are not important. As the guidance says it is good practice to have multiple sources of evidence to contextualise a scheme’s carbon footprint, and local or regional carbon

budgets provide a more pertinent scale for individual projects. Clearly assessment against local targets and budgets is also more precise – first, numerically, in essence the signal is less “hidden in the noise”, and second, that unique local transport characteristics and policies may be considered as part of the assessment process. The applicant has failed to grasp this, and to provide this more precise benchmarking, despite the IEMA guidance on this for EIA practitioners.

- 27 Just as point of clarification, I inadvertently quoted the version 1 of the IEMA guidance (2017) itself at the hearing. The quote, see below, is still completely relevant but is actually from the 2017 guidance rather than the latest guidance. The latest guidance, as above, expands on this principle of local and regional GHG assessment as part of good EIA practice.

“However, this quantitative approach provides a good indicator of significance and could be used in EIA to calculate a project’s carbon budget. This budget can then be compared against an existing carbon budget (global, national, sectoral, regional, or local - as available), to identify the percentage impact the project will contribute to climate change.”

5 NET ZERO STRATEGY

5.1 Additional information on the Net Zero Strategy

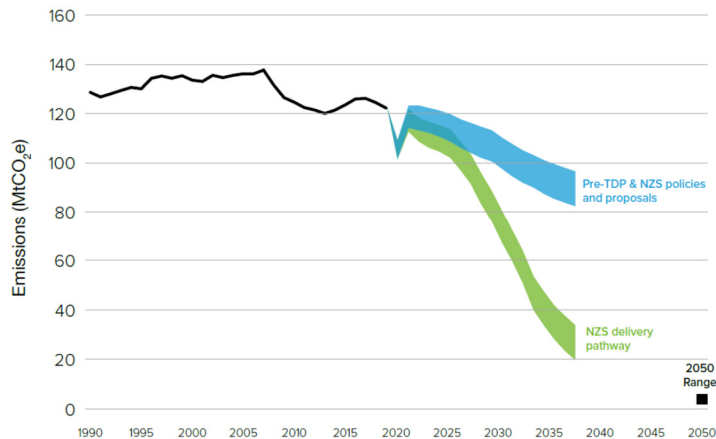
- 28 Further to section 2.2 of [REP2-064], I wish to provide further information on how the Net Zero Strategy fits in to the legal and policy framework, and the decarbonisation targets set within it.

5.2 Surface transport decarbonisation targets in the Net Zero Strategy and the Transport Decarbonisation Plan

- 29 Figure 21 of the NZS, reproduced below, is a refined version of TDP, Figure 2, also reproduced below. The NZS also provides numerical lower and upper bounds for the emission reductions in the indicative domestic transport emissions pathway to 2037 in the narrative for Figure 21. These are a fall in residual emissions from domestic transport emissions (excluding aviation and shipping) by around 34-45% by 2030 and 65-76% by 2035, **relative to 2019 levels.**

NZS

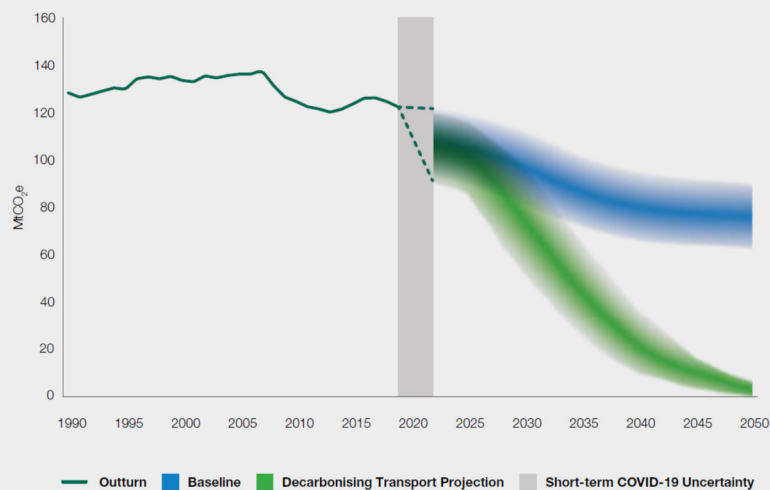
Figure 21: Indicative domestic transport emissions pathway to 2037



Source: BEIS analysis

TDP

Figure 2: Decarbonising Transport domestic transport GHG emission projections, versus the baseline*



* Historic emissions are from published Her Majesty's Government (HMG) GHG statistics. Our projections are produced using a range of models, including the National Transport Model (road transport), and Traction Decarbonisation Network Strategy (rail), and Aviation model, adjusted for decarbonising transport measures. The shipping baseline and projections are based on the latest analysis by the CCC (<https://www.thccc.org.uk/publication/sixth-carbon-budget/>), which drew on research commissioned by DfT. Given the emerging nature of zero emission shipping fuels, the projections should be interpreted as possible scenarios for meeting the net zero goal that the government has announced for the UK maritime sector rather than estimates of the impact of specific policies. Baseline forecasts are not consistent with the 2019 BEIS Energy and Emission Projections (EEP), as these use different methodologies. Where feasible, uncertainty in projections reflects uncertainty on policy design, GDP, fuel prices, trip rates, and historic volatility in emissions. The range in the policy line declines as we move out to 2050, due to a higher proportion of zero emission vehicles. Transport emission projections exclude military aircraft and shipping.

5.3 Net Zero Strategy in context of the NN NPS

30 The NN NPS 5.16-5.18 provides guidance on carbon emissions, the legally binding framework under the Climate Change Act, the Applicant’s assessment, and decision making. The document refers to the eleven-year-old Carbon Plan (2011), as the plan for meeting carbon budgets; however, footnote 69 makes it clear that “successor documents” should be

applied. **The NZS is the most up-to-date successor document under section 13 of the Climate Change Act.** Therefore, the NZS, and the related TDP, are government policies to which the SoS must give weight in determining this DCO Application. Currently, the applicant's Environmental Statement, and responses to the SoS' consultations, are not aligned to the NZS or the TDP.

5.4 Net Zero Strategy in context of the Planning System (NPPF), and this DCO application

31 The NZS is the most up-to-date delivery mechanism for the Climate Change Act (CCA). As such it is a legally binding policy document. CCA Section 13 imposes a duty of the Secretary of State to prepare such a document, and the NZS is the document of proposals and policies that the Secretary of State has prepared, and laid before Parliament under CCA Section 14, to meet the UK carbon budgets and targets.

32 The relevant budgets and targets include:

- A. The UK Nationally Determined Contribution under the Paris Agreement of 68% reduction of carbon emissions by 2030
- B. The target of 78% carbon emissions reduction by 2035 under the 6th Carbon Budget
- C. The 4th, 5th and 6th carbon budgets
- D. The net-zero target of net-zero carbon emissions by 2050

33 The planning system is required to take account of the NZS, as the NPPF 152 states that the planning system should “*help to: shape places in ways that contribute to radical reductions in greenhouse gas emissions*” whilst NPPF 153 states:

“Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures ^{<footnote 53>}.”

Where footnote 53 says “*In line with the objectives and provisions of the Climate Change Act 2008.*”

34 The NZS is the most up-to-date policy document which provides Parliament's proposals and policies to meet the objectives and provisions of the Climate Change Act, and therefore, it is of material weight in planning decisions.

35 Further the NZS itself at page 252 says:

“19 We will make sure that the reformed planning system supports our efforts to combat climate change and help bring greenhouse gas emissions to net zero by

2050. For example, as part of our programme of planning reform we intend to review the National Planning Policy Framework to make sure it contributes to climate change mitigation and adaptation as fully as possible.”

- 36 This indicates that further strengthening of the NPPF can be expected on top of the already very clear alignment of the planning system to the Climate Change Act via the extant NPPF, and to the NZS as the delivery mechanism for the CCA.

5.5 *Points, and elaboration of, made at the ISH3 re: the NZS*

- 37 I spoke about the NZS under Item 7 “General oral submissions”. Key points:

- A. The applicant has not assessed the carbon emissions from the scheme against the NZS available, nor made such an assessment available to the examination.
- B. The clear and transparent process for such an assessment needs to be provided to the examination which enables proper scrutiny of the data. The NZS provides upper and lower bounds for carbon reductions at 2030 and 2035. It needs to be clear what carbon quantities, and how they are derived, are being taken forward to see if they fit within the bounds or not. It should also be clear to what extent they are local, regional or national comparisons.
- C. Not fitting within the NZS bounds must be given very high weight in the SoS decision as not complying with the NZS and his own TDP.
- D. The applicant has provided a “TDP Sensitivity test”. As per section 2 above, additional information is required by interested parties and it is respectfully suggested that the ExA should consider it for the Rule 17 letter, or the EIA Regulation 20 process, if it has not been provided by then.

5.6 *Related point, and elaboration of, made at the ISH3 re: the NN NPS*

- 38 I highlighted two things about the NN NPS 5.16 to 5.19 “carbon emissions” section.

- A. NN NPS 5.16 is the introduction on carbon emissions. Footnote 69 refers to the 2011 Carbon Plan, an outdated document, but also refers to successor documents. The successor document under CCA 2008, section 13 is the Net Zero Strategy. Therefore the Secretary of State is required to give weight to the NZS in his decision.
- B. The final sentence of NN NPS 5.18 is “*Therefore, any increase in carbon emissions is not a reason to refuse development consent, unless the increase in carbon emissions resulting from the proposed scheme are so significant that it would have a material impact on the ability of Government to meet its carbon reduction targets.”*

The extant carbon targets are, nationally, from a 1990 baseline:

- i. The UK Nationally Determined Contribution under the Paris Agreement of 68% reduction of carbon emissions by 2030
- ii. The target of 78% carbon emissions reduction by 2035 under the 6th Carbon Budget

And for the road transport sector, from the NZS, and from a 2019 baseline:

- iii. 34-45% by 2030 and 65-76% by 2035

The applicant has not made an assessment against the above national **carbon reduction targets**. It has only made an assessment against carbon budgets (notwithstanding the fact that I do not agree the assessment against the entire national carbon budget is meaningful or reliable).

39 The applicant is therefore required to supply an assessment against these carbon reduction targets.

6 A57/REP5-026 - REQUEST FOR FURTHER INFORMATION FROM THE APPLICANT ON THE CUMULATIVE ASSESSMENT OF CLIMATE IMPACTS

6.1 A57/REP5-026 is not what it claims

40 The front cover of the document claims it is a “Cumulative Carbon Assessment”. It is **not** as I will explain in subsequent sections.

6.2 A57/REP5-026 background

41 Section 1.1.1 correctly states

*“The Agenda for the A57 Link Roads’ Issue Specific Hearing 2 Item 6 Climate Change on Thursday 10 February 2022, noted that the Department for Transport’s letter dated **7 January 2022** on the A38 Derby Junctions project raises matters in relation to cumulative effects that are relevant to the Proposed Development (see Appendix A).”*

although I am unable to identify which Appendix A is referred to.

42 It is worth noting the exact wording of used by the SoS in his letter of January 7th 2022:

*“The Secretary of State **invites** the Applicant to update its response of 31 August 2021 to the Statement of Matters to provide (or, to the extent that it has already been provided, identify) its assessment of the cumulative effects of Greenhouse Gas emissions from the scheme with other existing and/or approved projects on a local, regional and national level on a consistent geographical scale (for example an*

assessment of the cumulative effects of the Road Investment Strategy ('RIS') 1 and RIS 2 at a national level)."

43 Referring to the technical issues listed in the quote under the umbrella of the "assessment", this indicates the SoS was inviting two things:

- A. the extent to which the assessment had already been provided; and
- B. an update to the assessment to fulfil the legal and policy framework requirements.

44 In A57/REP5-026, the applicant has failed to respond in both these respects:

- A. It has not **identified** how it has already provided an assessment of the cumulative effects of Greenhouse Gas emissions from the scheme in all the existing material before the examination. As explained below, it has only identified how a quantification and assessment of the solus effects of Greenhouse Gas emissions from the scheme has been provided. (Note, this is also wrong solus quantification and assessment, which as explained below is a severe underestimate of the real solus effects).
- B. By way of **update(s)**, it has not provided an assessment of the cumulative effects of Greenhouse Gas emissions from the scheme. The updates provided, update the numerical CO₂e data in the context of the original quantification and assessment of the solus effects of Greenhouse Gas emissions from the scheme. This is a key point on the architecture of the traffic modelling and carbon quantification and assessment process, explained in detail below.

For operational emissions³, the new data in REP5-026, Table 1 is actually **two** new sets of data for operational carbon emissions:

- i. changes due to Updated Government Guidance since the publication of the Environmental Statement; and
- ii. the application of a nationally conglomerated "rate of improvement" based on TDP Figure 2 (referred to by the applicant as "the TDP Sensitivity test").

Both new sets of data are based on the same traffic modelling and carbon quantification and assessment process architecture as the Environmental Statement, are solus **only** quantifications.

³ I am noting but then ignoring, here, the new construction emissions calculation using the National Highways Carbon Emissions Calculation Tool v2.4 (2021)

45 The applicant has, therefore, failed to provide the ExA with the information requested. I now provide the evidence for this in detail.

46 I also note a difference between the response to the SoS of A38 Derby and the response here. A38/RESP-8.122 (see Appendix B) states that the latest set of BEIS carbon factors (2021), and accounting for decarbonisation of the national grid using the latest BEIS projected grid factors, are included in the modelling equivalent to i) above. REP5-026 makes no mention of this, and it would be helpful for it to be clarified.

7 A57/REP5-026 – 9.59 APPLICANT’S RESPONSE TO ISSUE SPECIFIC HEARING 2 ITEM 6 C) AND D)

47 The applicant has broken their response down into six constituent part, as listed at 2.2.1, which for clarity I refer to as i) to vi) below (this numbering added by me).

7.1 A57/REP5-026 (i) - Assessment of Cumulative Effects of Greenhouse Gas Emissions from the Scheme with other Existing and/or Approved Projects

48 The applicant describes their traffic model as being “inherently cumulative” [2.2.7] as it contains data about:

“1) The proposed scheme and adjoining Strategic Road Network and local road Network.

2) Other schemes promoted by National Highways in the near vicinity of the proposed scheme with high certainty that they are to be progressed i.e. progressed beyond preferred route announcement stage.

3) They are based on discussions with the relevant planning authority, of foreseeable developments promoted by third parties as likely to be developed in a similar timeline to the proposed National Highways’ scheme. Knowing where the proposed third party development is to be sited, the extents and types of development, and the timescales of when it is to be completed are requirements to ensure that the third party developments can be reasonably described in the traffic model.

4) National government regional growth rates which include a representation of likely growth rates excluding known planning developments already included in the traffic model. This is represented by DfT’s NTEM/TEMPO growth factors for car usage, and growth in freight is derived from DfT’s National Transport Model.”

49 I do not dispute that the applicant’s traffic model contains all these elements.

7.2 Question(s) which I posed at ISH3

50 The problem in the applicant's position is how it then quantifies and assesses the carbon for the scheme via its selection, and extraction, of data from the different possible configurations of the traffic model.

51 At the ISH3, I posed a question, elaborated here as two related questions. **First**, can the applicant's argument at 2.27 and 2.2.8 be summarised in the following notion?

***If** the traffic model contains all known road and land developments in the study, **then** it follows that any combination of data, and any differentiation of that data (eg DS-DM), extracted from the traffic model must also be "inherently cumulative".'*

52 **My answer: "Yes"**. The applicant's entire argument about whether they have performed a cumulative assessment of carbon is summarised by this statement.

53 **Second**, is this notion correct? The applicant presumably answers "Yes" as this is the argument which they have persistently used.

54 **My answer: "No"**. The notion above is a defective, as the latter (ie: then clause) does not universally follow the former (ie: if clause), as I will now demonstrate below. As I explained at the ISH3, paragraph 2.2.8 is the crucial paragraph which demonstrates that the applicant has only performed a solus assessment of carbon emissions.

7.3 A57/REP5-026 (i) – Only a solus assessment is made

55 Having configured a traffic model for the scheme with all the elements listed above within it, the applicant then describes how they quantify the carbon for the scheme as follows at section 2.2.8:

"In terms of operational carbon, the Applicant has evaluated the changes in CO₂e emissions of the proposed Scheme by comparing changes in the road traffic on the Strategic Road Network and local road network between the 'without scheme scenario' and the 'with scheme scenario'."

56 The applicant, here, identifies a single calculation of "the changes in CO₂e emissions of the proposed Scheme" from the many possible calculations available. By the applicant's own advocacy, this is the only calculation which they perform in the Environmental Statement, and the only calculation which they are saying is required.

57 However, this calculation produces a differential quantity of carbon emissions for the scheme which is the difference (DS-DM), **solely**, of all the elements of the network [ie: 1) to 4) above] as the DS case, and all the elements of the network except the scheme as the DM case. This is a solus quantification. Notwithstanding that it is the wrong solus calculation, it is also not the only quantification required; the EIA Regulations also require a cumulative quantification, and the ExA has invited the applicant to provide it.

58 Table 1 below presents a schema of the traffic modelling architecture and shows what the applicant has done.

Model configuration name	Performance-oriented (ie as in APP-185)	
	DM (Perf, baseline)	DS (Perf, all)
2015 Baseline Highway network (1)	✓	✓
A57 Missing Link scheme (1)	✗	✓
Other schemes promoted by National Highways (2)	✓	✓
Foreseeable developments promoted by third parties (3)	✓	✓
National government regional growth rates (4)	✓	✓

Table 1

59 The red ellipse indicates the only change in the configuration between the DM and DS scenarios is the presence, or not, of the A57 scheme in the modelling, as the applicant identifies in the quoted statement above.

60 I note that other land-based and road developments are described in APP-185, and via the Uncertainty Log, and the concerns from other interest parties as to the accuracy and status of the Uncertainty Log. I am only concerned here about the architectural issues, and compliance with the EIA Regulations. “Performance oriented” will be explained below.

61 The important point is that although the DS and DM traffic models in this case may be described as “inherently cumulative”, **the quantification produced by the differentiation (DS-DM) is “solus” in the sense described by Mr Justice Holgate in in Pearce v BEIS [2021] EWHC 326 (Admin)** provided at Appendix C. For the EIA Regulations, it is necessary to clearly distinguish solus and cumulative assessment, as Mr Justice Holgate does: solus⁴ being the impacts of a scheme in isolation. In the Pearce case, Mr Justice Holgate ruled that the evaluation of (onshore) environmental impacts was required **both** for the windfarm in question (under DCO planning application) in isolation (**ie solus**), and the windfarm in combination with another windfarm which was undergoing a parallel DCO planning application (**ie cumulative**).

7.4 A57/REP5-026 (i) – What is the influence of other developments?

62 The applicant continues [2.2.8, second sentence]:

“This takes into account the assessment of the Proposed Development and all other developments likely to have an influence on the Proposed Development and on the area the Proposed Development is likely to influence.”

⁴ Solus means, here, “alone; separate” as in the first definition in the Collins on-line dictionary

63 It is a truism that the presence of all elements of data in the traffic model has an influence on its outputs, but it is not a particularly helpful truism in understanding the carbon impacts of the scheme and how to extract them from the model meaningfully. There are two key issues here:

- A. Fundamentally, the “influence” of all other developments **is not the same** as **quantifying** their environmental impact, in this case on the EIA receptor of global GHG emissions, which is what the EIA Regulations require. The presence of their influence on the data output is not the same as quantifying their environmental impact, as measured in tCO₂e, and is no substitute for it.
- B. The nature and quantification of the “influence” is not addressed. This can be understood by considering another possible **solus** quantification based also on a (DS-DM) differentiation but from different configurations of the traffic model. This is consistent with the applicant’s presentation at REP5-026/2.2.8.

	EIA Regs compliance-oriented (eg: for impact assessment of GHGs)	
	<i>DM (GHG, baseline)</i>	<i>DS (GHG, scheme)</i>
2015 Baseline Highway network (1)	✓	✓
A57 Missing Link scheme (1)	✗	✓
Other schemes promoted by National Highways (2)	✗	✗
Foreseeable developments promoted by third parties (3)	✗	✗
National government regional growth rates (4)	✓	✓

Table 2

64 Here, the quantification is made by considering the scheme when it is added, in isolation or solus, to the current environmental baseline. In this case, there is no influence from other developments which may follow after the scheme’s implementation. This model provides a more accurate description of the journey trips which are attributable to the scheme itself as it quantifies the impact of building out the scheme into the current environmental baseline.

In the applicant’s solus calculation (ie as specified by this document’s Table 1 above), some journey trips attributable to the scheme may actually be accounted for in the DM case. This raises the quantum of the DM, and reduces the DS-DM differential, making it an underestimate of the real solus impacts of the scheme. This shows how the effects of the other developments have an influence which distorts even the solus quantification. Further, the quantification of the tCO₂e associated with the other developments, required for the cumulative assessment, has not been made.

65 This shows that the by-far preferable way to understand the carbon emissions of the scheme, in isolation, is to perform the solus quantification against the current environmental baseline (ie as specified by this document’s Table 2 above), and then perform the applicant’s version (ie as specified by this document’s Table 1 above) as a sensitivity test on the “influence” that results from considering the other developments.

7.5 *A57/REP5-026 (i) – Performance-oriented vs EIA Regs compliance oriented traffic modelling*

- 66 In Table 1 and 2 above, I have referred the two different architectural schemas as “performance-oriented” (Table 1), and “EIA Regs compliance oriented” (Table 2). The reason for this is that in Table 1, the two traffic model configurations (ie: DS and DM) which are deployed are geared to assessing operational performance. Whereas the two models in Table 2 show the effect of placing the scheme in the current environmental situation, and therefore is better for assessing the environmental impacts of the scheme in isolation, or solus.
- 67 Performance is an important design issue, and it is vital to test aspects of the transport network of interest to highways engineering. It is important to test the network with all the other developments, present the configurations in Table 1, to provide value towards that purpose. My submission does not seek to address the success, or not, of this aspect of the transport case. The performance issues that this approach to the modelling is designed to answer are described in APP-185, and elsewhere.
- 68 However, this approach, and the knowledge and skills developed by traffic modellers, pre-date the current time when assessment of carbon emissions has become an important factor in planning policy and law. For carbon emissions, a complementary “EIA Regs compliance oriented” architecture is required, as shown above in Table 2 for solus quantification, and in Table 3 below for cumulative quantification.

7.6 *A57/REP5-026 (i) – Cumulative assessment*

- 69 Returning to the requirements of the EIA regulations, and the fundamental requirement, for **quantifying** the environmental impacts of the scheme with all other developments for cumulative carbon assessment. This is shown in Table 3. The required calculation is *DS (GHG, all) – DM (GHG, baseline)* in my nomenclature which will be explained below. Arrows have been added below this version of the table to make the intended meaning of the two different solus carbon quantifications described above, and the cumulative carbon quantification, required by the EIA Regulations, entirely clear.
- 70 A quick note on nomenclature: in Table 3, I identify five Traffic Model configurations and give each a unique name eg: *DM (Perf, baseline)*. In *DM (GHG, all)* and *DS (Perf, all)*, “all” refers to when all elements of the traffic model as described at REP5-026, section 2.2.7 are present.
- 71 Just for clarity, each of the model configurations would be run at 2025 Opening Year, and 2040 Design Year, in these architectures. So, from the original⁵ ES Chapter 14, Table 14.10, the 2025 value for *DM (Perf, baseline)* is 735,352 tCO₂e, and for 2040 782,909 tCO₂e, whilst Table 14.14 gives the respective *DS (Perf, all)* figures as 740,660 tCO₂e and 789,782 tCO₂e.

⁵ This is for clear illustration of the principle. I note the data is updated in REP5-026, Table 1.

When the differential carbon quantifications are summed into 5-year carbon budgets in Table 14.16, then $DS (Perf, all) - DM (Perf, baseline)$ for the 5th carbon budget is 29,231 tCO₂e. (Note, this latter figure also includes the non road-user operational emissions but these are insignificant compared to the total as the Environmental Statement, chapter 14, 14.3.14 states from a study of three schemes that '0.29% of road user emissions has been applied as a reasonable worst-case operation and maintenance figure'.)

	Performance-oriented (ie as in APP-185)		EIA Regs compliance oriented (for impact assessment of GHGs)		
	<i>DM (Perf, baseline)</i>	<i>DS (Perf, all)</i>	<i>DM (GHG, baseline)</i>	<i>DS (GHG, scheme)</i>	<i>DS (GHG, all)</i>
2015 Baseline Highway network (1)	✓	✓	✓	✓	✓
A57 Missing Link scheme (1)	✗	✓	✗	✓	✓
Other schemes promoted by National Highways (2)	✓	✓	✗	✗	✓
Foreseeable developments promoted by third parties (3)	✓	✓	✗	✗	✓
National government regional growth rates (4)	✓	✓	✓	✓	✓

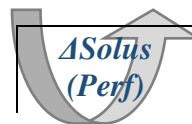


Table 3

72 $DS (Perf, all)$ and $DS (GHG, all)$ are the same configuration. For the cumulative calculation $DS (GHG, all) - DM (GHG, baseline)$, the configuration with the scheme, and all the traffic model elements (ie “with scheme”) is differentiated with a “without scheme” configuration in which the scheme, and also the other road schemes and land-use developments have been removed. This enables an EIA Regs compliant cumulative assessment of the “scheme with other developments” to be made.

7.7 A57/REP5-026 (i) – Summary on cumulative assessment and the EIA Regulations

73 In summary:

- i. The applicant has identified that it has performed a single quantification of carbon at REP5-026, section 2.2.8. **It is a solus quantification**, and any assessment based on comparing it to benchmarks (such as the NZS and TDP delivery pathways, or carbon budgets) is consequently also only a solus assessment.
- ii. The solus quantification, specified at section 2.2.8, is the **wrong** solus quantification for carbon emissions. The carbon emissions of the scheme against

the existing environmental baseline need to be quantified, assessed and understood first (DS-DM as specified by this document's Table 2 above).

The applicant's DS-DM (ie as specified by this document's Table 1 above) could be an interesting sensitivity test (for carbon emissions), but it should not be considered as their primary solus quantification (and assessment) for carbon emissions.

I understand that the modelling architecture expressed in Table 1 is the appropriate modelling architecture for interrogating operational performance issues, and, indeed, that is historically why the modelling community have stratified on this singular approach. As I discussed above, the era of analysing and inspecting how our society uses the extremely scarce resource of remaining usable carbon emissions, which has brought carbon quantification and assessment against climate laws to the fore, requires a complementary architecture. And so do the requirements of the EIA Regulations.

- iii. The ExA invited the applicant to identify its cumulative quantification and assessment of the carbon impacts of the schemes. The applicant has been unable to do so. Therefore, the Environmental Statement remains non-compliant with the EIA Regulations, and further work is still required by the applicant: a cumulative quantification of the carbon impacts of the scheme should be made, and an assessment based upon that. This would be based upon running the traffic model configurations, and calculating $DS (GHG, all) - DM (GHG, baseline)$ as specified by this document's Table 3 above.

74 For absolute clarity, the narrative above applies to all carbon emissions data sets that have been provided by the applicant for the operational road-user emissions, including the new Table at REP5-026, Table1.

7.8 A57/REP5-026 (i) - Assessment of Cumulative Effects – PINS Advice Note 17

75 The applicant continues at REP5-026/2.2.9:

'In essence, as both with and without scheme scenarios already include all likely developments and traffic growth factors, the assessment is inherently cumulative as regards operational carbon emissions. This is recognised in general terms in paragraph 3.4.4 of the Planning Inspectorate's Advice Note 17 ("Cumulative effects assessment relevant to nationally significant infrastructure projects"), the first two sentences of which state that:

"Certain assessments, such as transport and associated operational assessments of vehicular emissions (including air and noise) may inherently be cumulative assessments. This is because they may incorporate modelled traffic data growth for future traffic flows. Where these assessments are

comprehensive and include a worst case within the defined assessment parameters, no additional cumulative assessment of these aspects is required (separate consideration may be required of the accumulation or inter-relationship of these effects on an individual set of receptors e.g. as part of a socio economic assessment).”

- 76 The first sentence is false. As demonstrated above, the quantification and assessment made by the applicant of carbon emissions in the Environmental Statement is simply and purely **a solus one**. I have shown above that it is a defective notion that including all likely developments and traffic growth factors in the traffic model, necessarily generates a cumulative quantification and assessment of carbon impacts.
- 77 PINS Advice note 17 does not address cumulative carbon assessment. There is no reference to it in the quoted section, but furthermore there is no reference to cumulative carbon assessment in the entire document⁶. Whilst the PINS Advice note 17 is part of a suite of general, and often helpful, advice provided by the Planning Inspectorate, it has no statutory status as the website states.
- 78 The writers of PINS Advice Note 17 used the word “may” in the first sentence of paragraph 3.4.4 indicating that they understood that it was not universally true that assessments would be “inherently cumulative” just based on the traffic model “including traffic data growth for future traffic flows”.
- 79 I have unambiguously shown that the distinguishing feature on the applicant’s approach is that it is based on calculating differential emissions, that is DS-DM where DS and DM are absolute carbon emission values output from the traffic model. The quantification and assessment are not inherently cumulative when differential emissions are calculated based on just “with scheme” and “without scheme” models (the inclusion of the scheme, or not, being the only element of difference). The reason is that even if planned changes to the highway network and foreseeable third-party developments are included in each model (input to the calculation), their effects (“influence”) on carbon emissions is lost in the subtraction process. This is also clear by considering Tables 1, 2 and 3 above.
- 80 The applicant appears to have taken this PINS Advice note which does not consider the issue of cumulative carbon assessment, and holds no statutory status and tried to apply it to their case. In referring to its relevance “*in general terms*”, the reality is that the note offers no support for the applicant’s case.
- 81 I conclude that Planning Inspectorate’s Advice Note 17 gives no support to the applicant’s claims in REP5-026, and accordingly the ExA should also inevitably conclude that no weight can be applied to the note in this context.

⁶ <https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-17/>, accessed 18th March 2022. PINS Advice note 17.

7.9 A57/REP5-026 (ii) - The Appropriate Geographical Scale of Assessment of Greenhouse Gas Emissions

82 Assessment against local policies and carbon budgets and targets should be made. This has been covered in REP2-064 where I provided the EIA Guidance documents to the examination, and in the IEMA guidance document as above.

83 The traffic model study area itself may be used as a proxy geographical area (noting, that it does not include all network links, but it largely includes those which are most relevant to carbon emissions) and tested against the NZS (and TDP) targets for 2030 and 2035. This would provide a simple way to gain an assessment at the local and regional level.

84 Assessment should also be performed against the science-based local authority carbon budgets for the world leading Tyndall Centre at the University of Manchester, known as SCATTER budgets.

7.10 A57/REP5-026 (ii) - Transport sector targets

85 The applicant fails to identify that the NZS now provides a sector specific target for surface transport under UK Climate Change legislation. It has also failed to withdraw its repeated assertion that there is no sector specific target for transport.

86 The applicant states:

“Neither Parliament nor Government has identified any sectoral targets for carbon reductions related to transport, or any other sector. There is no requirement in the CCA 2008, or in Government policy, for carbon emissions for all road transport to become net zero.”

and refers to *R(Transport Action Network) v Secretary of State for Transport [2021] EWHC 2095 (Admin)* (“the TAN case”). However, the TAN case judgement was in July 2021 whilst the Net Zero Strategy was published in October 2021. The Net Zero Strategy has been laid before Parliament under section 13 and 14 of the Climate Change Act and provides the up-to-date legal and policy framework to be considered within the context of the NPS NN.

87 The Net Zero Strategy (NZS) and the Transport Decarbonisation Plan (TDP) update the policy framework since the TAN case. Both documents provide the same sector specific decarbonisation pathway, and implied targets, for the surface transport sector, and the NZS is legally binding policy under section 13 of the Climate Change Act 2008 (CCA).

88 The NZS delivery pathway, related to road transport, corresponds to a fall in residual emissions from domestic transport emissions (excluding aviation and shipping) by around 34-45% by 2030 and 65-76% by 2035, **relative to 2019 levels** (see Figure 21 from the NZS reproduced above).

89 The applicant has claimed that there is no sector specific target under UK Climate Change legislation. However, the NZS (and TDP) which is the delivery policy document for achieving the CCA targets and budgets has clearly laid out an indicative delivery pathway for surface transport as one of the 11 sectors under the Climate Change Act budgets. **This is a sector specific target for surface transport under UK Climate Change legislation.**

90 Despite the very clear material relevance of the NZS to appraisal of carbon in road schemes under the NN NPS, as outlined above, the applicant has failed to mention the NZS targets, indicative delivery pathways, for surface transport. Not fitting within the NZS bounds, if indeed the scheme fails this requirement, must be given very high weight in the SoS decision as the scheme would then not be complying with the NZS and his own TDP.

91 As described in the NZS section above, with the NZS, the Climate Change Act is a material consideration for this scheme, and this is supported by NPPF 153, footnote 53, and NN NPS, footnote 69.

7.11 A57/REP5-026 (iii) - How the Assessment Complies with Various Carbon Budgets and Wider Carbon Policies

92 The points made in the above section apply again. In summary, the applicant fails:

- to mention or identify the NZS (and TDP) targets, indicative delivery pathways, for surface transport (and NPPF 153, footnote 53, and NN NPS footnote 69)
- to identify the requirement under NN NPS 5.18 for Carbon quantification and assessment against national carbon reduction targets.

7.12 A57/REP5-026 (iv) - How an Assessment was Undertaken to Evaluate the Impacts of the Scheme Including Consideration of Likely Significance Effects

93 I have already pointed out that two new sets of data have been included without adequate explanation at this section of REP5-026.

94 The TDP Sensitivity test appears to be a new methodology which comes with no explanatory guidance notes. It is not even possible to discern what assessment is made from the test, and what its conclusions are.

95 The only information provided is what A57/REP5-026/2.2.30 states (see the quote below), and the footnotes to Table 1. The section then displays TDP, Figure 2, and then abruptly stops:

“The DfT have advised National Highways that a sensitivity test based on the impact of the policy measures set out in TDP can now be undertaken for schemes. The DfT have approved a sensitivity test based on the rate of improvement shown in Figure 2 of the TDP which can be applied to CO₂e emissions calculated for the Scheme assessment.”

96 The test referred to by the Applicant as the “TDP Sensitivity test” although it is not at all clear that it meets the usual requirements of a sensitivity analysis.

97 This provides a very serious problem to the examination, and to the ExA and SoS. How can the SoS determine the application when this new methodology and data has not been adequately explained? I now present a series of questions which must be answered for the scheme to be even “examinable” at this stage. Further, a full explanation of the methodology is required, along with details of the modelling underlying the test.

- 1) Does “TDP Sensitivity test” use the traffic model study area as a proxy geographical area?
- 2) Sensitivity analysis is the study of how the uncertainty in the output of a mathematical or computer model can be understood and proportioned statistically to different sources of uncertainty in its inputs. How is this done in the TDP Sensitivity test?
- 3) How is the uncertainty of an input to the traffic modelling and carbon quantification reflected in the output of the TDP Sensitivity test? Examples are needed.
- 4) What is meant by “applied” – literally what is being applied in paragraph quoted above (eg: A57/REP5-026/2.2.30)? Full details of data and algorithms should be supplied.
- 5) Is the TDP Sensitivity test being applied within the traffic model (ie is the new methodology integrated into the traffic model framework?), or is its being applied to the carbon quantification output from the traffic model as a post-processing step?
- 6) Does the TDP Sensitivity test quantify the individual policies in the TDP within the study area, and if so, how?
- 7) Does the TDP Sensitivity test quantify local transport policies, and if so, how?
- 8) What work has been done to compare the assumptions in the TDP policies against the assumptions built into the traffic model for the scheme? Has this been quantified?
- 9) As the scheme was designed many years before the TDP was published, what work has been done to test the scheme objectives and assumptions against the TDP policies? Again, has the carbon quantification ramifications of this been determined?

10) Is there double counting between EfT v11 and the TDP sensitivity test? This could be across all policies in the TDP, but the quantification of electric vehicle policy on carbon emissions would be the most obvious example.

98 I made reference to having drawn up these questions at the ISH3 (but no time to present them then).

7.13 A57/REP5-026 (v) - How the Assessment Presented for the Scheme Complies with the Environmental Impact Assessment Regulations

99 I have shown in previous sections that the Applicant has not quantified, nor assessed, the cumulative impacts of the development proposed together with those from other “existing and/or approved projects”.

100 The applicant claims at 2.2.37 that it “can only assess the change in CO₂e emissions from the Scheme in absolute terms”. However, the quantifications that the applicant calculates are differential in nature, being differences (DS-DM) of configurations of the traffic model, **so this statement is misleading**. The differential emission quantities do not reflect the scale of the absolute emissions in the study area with the scheme. The absolute emissions value is the realistic quantification of the transport emissions for the study area, and their impact on the global atmosphere as the environmental receptor, as part of local, regional or national carbon budgets.

101 The NPS NN section 4.15 invokes the EIA Regs and states that the Directive as transposed into UK law “specifically requires an environmental impact assessment to identify, describe and assess effects on ... climate ...”. The EIA Regs Schedule 4 is invoked which requires “the likely significant effects of the proposed project on the environment, covering the **direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects of the project**” to be described in the EIA.

The second highlighted section from NPS NN 4.15 above is directly “cut and paste” from the wording in the EIA Regs themselves, indicating it was the DfT’s intention in the NPS NN that significant effects, impacts or benefits as described are included in the Environmental Statement.

102 Again the EIA Regs are invoked for the assessment of carbon emissions at NPS NN 5.17 which states “any Environmental Statement will need to describe an assessment of any likely significant climate factors in accordance with the requirements in the EIA Directive.”

103 The Applicant’s assessment in the Environmental Statement has not met these requirements of the NPS NN, and has not demonstrated the assessment of **cumulative impacts**.

104I also refer the ExA to my previous submissions on the EIA Regulations and the NN NPS at A57/[REP2-064], section 4.

105 I particularly refer the ExA to A57/[REP2-064], section 4.1, bullets 43-48 including “*The matter here is not about either the EIA Regulations “winning over” the NPS NN, or the reverse of the NPS NN winning over the EIA Regulations. The ExA and SoS are required to take account of, and apply, both pieces of legislation (ie it is an and-and situation).*”

7.14 A57/REP5-026 (vi) - The Assessment was prepared by a Competent Expert

106 Noted.

8 ISH3 ITEM 6 COMMENTS

8.1 Mitigations, Items 6m) – 6s)

107 Issues were concerned during these items about the transparency of the processes involved, and whether the mitigations could be secured. “Would ‘low carbon’ survive the challenge of other issues?”

108 I share these concerns in several respects as below for both construction phase mitigation and operation phase mitigation.

109 I also note that NN NPS, 5.19 states:

“The Secretary of State’s view of the adequacy of the mitigation measures relating to design and construction will be a material factor in the decision making process.”

110 However, I have a deeper concern that as the issue of whether the scheme complies with the legal and policy framework on climate change is still not resolved, **it is premature to consider mitigation at this stage.**

111 “Adequacy” must be measured in terms of whether the scheme can be brought into compliance with the legal and policy framework on climate change by mitigation measures, and then whether the proposed measures can be secured and enforced.

8.2 Mitigations, Items 6m) – 6s): drafting the DCO clause(s) is premature

112 Currently, mitigation is premised as an “add on” to a scheme **which is assumed** to comply with required legislative and policy framework. However, interested parties, including myself, do not agree that this is the case, and it certainly has not been proven. The rest of this submission addresses this very issue.

113 The setting of targets, and the proposals for mitigation, need to be evidenced-based against compliance with climate policy and law. I am concerned that determining adequate levels of carbon emission mitigation will not be possible. But further, I am concerned that, even if they were possible, they would not be able to be summarised into a DCO clause(s) which would secure the outcomes required.

114 Further, there has been no discussion of what an adequate level of mitigation would be in the context of the requirement for the scheme to comply with the Net Zero Strategy. The evidence presented in the rest of this document is that scheme does not comply with the Climate Change Act and Net Zero Strategy, although until the applicant provides the necessary new data to the examination, it is difficult to know the quantum of non-compliance. It would then be necessary to understand what level of mitigation would be required to bring the scheme into compliance with the Net Zero Strategy. **So currently, the authors of the DCO clause do not even know what levels of further carbon reductions they need to achieve by mitigation, both for construction and for operation emissions.**

115 Even if the levels of mitigation could be determined, two further problems remain – robust monitoring, and robust enforcement.

8.3 *Mitigations, Items 6m) – 6s): DCO clause(s), how would reliable monitoring be done?*

116 It is proposed that monitoring is provided by the local authorities. Transparency is required on several issues. How would the monitoring be done so that it was robust? Are the relevant skills available at the local authority? Is the local authority adequately resourced to do the monitoring?

117 Should this proceed, it would be preferable for an independent body who have the necessary skills to be involved in providing independent monitoring. The Transport and Mobility group at CREDS [REDACTED] a wide-ranging academic research centre with many experts on the transition to net zero society including decarbonisation of construction and operation emissions in transport, would be the type of organisation which should be approached to monitor such a DCO clause.

8.4 *Mitigations, Items 6m) – 6s): DCO clause(s), no reliable enforcement mechanism*

118 DCO enforcement is covered by Part 8 of the Planning Act 2008, and breach of terms of order granting development consent is covered by section 161 within that part of the Act⁷.

119 Breaches are a criminal offence under section 161(4) which itself requires that DCO requirements are drafted so that they have very clear conditions.

120 The law places several bodies in potential conflict in carrying out enforcement. These are:

- i. The scheme developers;
- ii. The relevant local planning authority;
- iii. The statutory enforcement and prosecution authority for any breaches under Planning Act 2008, s163-172.

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121 I have observed in other situations that some of these roles are performed by the same bodies, and by bodies which are potentially conflicted. It is, important, **first** that these roles, and the authorities performing them are fully identified to the examination, and that it can be entirely clear that they are not conflicted.

122 However, **second**, there is a serious issue about whether sufficient resources are available for these roles, in local government which has been cut to the bone. Very few, if any⁸, enforcement actions have consequently ever been brought forward.

123 The same concerns apply to all the DCO Requirements.

9 ISH3 ITEM 2 COMMENTS

124 At ISH3, I briefly commented on Item 2l) – 2 m) on the Transport Networks and Traffic Policy. My comments, with further elaboration, were:

- A. The applicant did not adequately respond on “whether the scheme supports the aims of the Greater Manchester Transport Strategy 2040 and / or the Government’s Transport Decarbonisation Plan?” but instead made the claim that these policies supported the scheme.
- B. What is needed is for the applicant to demonstrate for each policy in these documents, how the scheme supports delivery of the policy, for Greater Manchester and national (for the TDP). This has not been done.
- C. The Greater Manchester Combined Authority have been notably absent at the examination, but they would be best placed to answer how the scheme may or may not support each policy in their Transport Strategy 2040. The Transport Strategy dates from 2017, and is being reviewed this year for the Transport Decarbonisation Plan (TDP)⁹.
- D. The “TDP Sensitivity test” introduced in REP5-026 was not mentioned with respect to the TDP. As in other sections of this document, it has not been explained what this test is, what it assesses, and what conclusions can be drawn from it.

⁸ I have looked, but not found an example.

⁹ “Greater Manchester Transport Strategy 2040 Progress Report” to February 18th 2022 meeting of the Greater Manchester Transport Committee including this quote “Following on from the publication of DfT’s Transport Decarbonisation Plan, COP26 and the GM Green Summit in the autumn, it is crucial that GM makes further progress on tackling carbon emissions from transport, alongside plans to clean up the air we breathe.”, (see, <https://democracy.greatermanchester-ca.gov.uk/ieListMeetings.aspx?Act=later&CId=193&D=202107161030&MD=ielistmeetings>, and <https://democracy.greatermanchester-ca.gov.uk/documents/s19222/07%2020220218%20GMTc%20GMTS%202040%20Progress%20Report%20Update.pdf>, section 6.5)

10 RULE 17 LETTER AND EIA REGULATION 20 IMPLICATIONS

125 Further work and additions to the Environmental statement have been identified in this document and these include:

- A. Carbon quantification and assessment against national **carbon reduction targets** as required by NN NPS 5.18.
- B. Cumulative carbon quantification and assessment compliant with the EIA Regulations.
- C. Assessment against local policy, and carbon budgets and targets.
- D. Assessment against the science-based local authority area carbon budgets for the Tyndall Centre at the University of Manchester (SCATTER).
- E. Full explanation of the “TDP Sensitivity test” methodology. Answers to my 10 questions on it above. A full assessment of the scheme using the data against the relevant carbon reduction targets and carbon budgets.
- F. Full data and algorithmic transparency on the modelling behind the TDP policies and the NZS delivery pathways.
- G. Full data and algorithmic transparency with respect to the “TDP Sensitivity test”.

126 The ExA made clear that he would be issuing a Rule 17 letter later in the examination. This clearly would be a way to require the additional work required. However, the scale of the work identified is probably both too much for the applicant to deliver in the last weeks of the examination, and too much for interested parties to respond to with comments before the end of the examination. I respectfully suggest to the ExA that EIA Regulation 20 might serve as a preferable mechanism for ensuring the Environmental Statement is adequate, and which would also be fairer to all parties.

11 CONCLUSIONS

127 The application does not comply with the EIA regulations as laid out above as a cumulative assessment of carbon impacts does not exist in the Environmental statement. In addition, further information is required by myself and other interested parties, and required by EIA Schedule 4(6) and the Aarhus convention.

128 Currently, there is not a viable route to proceed, with the current Environmental Statement, which ensures that the SoS can be satisfied that the material provided by the applicant is sufficient for him to reach a reasoned conclusion on the significant effects of the proposed development on the environment.

129 A Rule 17 letter or suspension of the examination under EIA Regulation 20 are options to obtain the necessary information.

130 If the information cannot be provided, the application should be recommended for refused.



Dr Andrew Boswell,
Climate Emergency Policy and Planning, April 13th, 2022

12 APPENDIX A: DATA AND ALGORITHMIC TRANSPARENCY

12.1 *The Algorithmic Transparency Standard*

131 The Government recently announced an "Algorithmic Transparency Standard" at <https://www.gov.uk/government/collections/algorithmic-transparency-standard> under the Central Digital and Data Office in the Cabinet Office. Under the new approach, government departments and public sector bodies will be required to explain where an algorithm was used, why it was used and whether it achieved its aim. There will also be an obligation to reveal the architecture behind the algorithm.

132 This follows from the debate on computing, AI and data in public bodies where decision may be made by computer or based on computer outputs. It also applies to decision making and one of the scopes is software that "has a potential legal, economic, or similar impact on individuals or populations" which includes transport models used for decision making of carbon in planning.

133 The need for such transparency was foreseen by Supreme Court judge Lord Sales in a 2019 speech¹⁰ "Algorithms, Artificial Intelligence and the Law" which includes the key paragraph:

"The question then arises, how should we provide for ex ante review of code in the public interest? If, say, a government department is going to deploy an algorithmic program, it should conduct an impact assessment, much as it does now in relation to the environmental impacts and equality impacts in relation to the introduction of policy. ...

Therefore, there seems to be a strong argument that a new agency for scrutiny of programs in light of the public interest should be established, which would constitute a public resource for government, Parliament, the courts and the public generally. It would be an expert commission staffed by coding technicians, with lawyers and ethicists to assist them."

134 Whilst the Algorithmic Transparency Standard is at a pilot stage and being currently tested by several government departments and public sector bodies, it will be reviewed again and formally launched later in the year. It is a standard that the Applicant as a public body, or publicly owned company, will be required to comply with in the future.

¹⁰ Supreme Court judge Lord Sales in a 2019 speech "Algorithms, Artificial Intelligence and the Law", [REDACTED]

13 APPENDIX B: A38 DERBY JUNCTIONS [TR010022] Volume 8.122, APPLICANT'S RESPONSES TO THE SECRETARY OF STATE'S CONSULTATION LETTER ISSUED 7TH JANUARY 2022 A38/[RESP-8.122]

Supplied as separate document

14 APPENDIX C: PEARCE V BEIS [2021] EWHC 326 (ADMIN) JUDGEMENT

Supplied as separate document

15 APPENDIX D: IEMA GUIDANCE, ASSESSING GREENHOUSE GAS EMISSIONS AND EVALUATING THEIR SIGNIFICANCE

Version 2, February 2022

Supplied as separate document