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DEADLINE D7 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

- 1 The Net Zero Strategy (NZS) and the Transport Decarbonisation Plan (TDP) provide new policy background since the Environmental Statement was written. 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). The NZS has weight in assessing the scheme in four ways:
 - compliance with the CCA itself of which it forms a core policy document;
 - compliance with NN NPS and NPS required alignment with the latest Climate policy plans under the CCA;
 - compliance with NPPF 153 and NPPF required alignment with the CCA;
 - and the new requirement from DfT for TDP sensitivity testing in road scheme appraisal.

2 The Applicant provides a response to CEPP at pages 5-9 of [REP3-013] on carbon emissions which is riddled with flaws, including:

- The implied notion that *‘if the traffic model contains all known road and land developments in the study, **then** it follows that all combinations of data, and differentiations of that data (eg DS-DM), extracted from the traffic model must be “inherently cumulative”’*.

This is a defective notion as the latter does not universally follow the former. The flaw is fundamental to the Applicant’s non-compliance with the requirements of the Environmental Impact Assessment Regulations for cumulative assessment of impacts, in this case carbon emissions. **The applicant’s response demonstrates that the Environmental Statement does not comply with the EIA Regulations and is therefore unlawful.**

- Failure to identify the Net Zero Strategy (and Transport Decarbonisation Plan) as Government policy and therefore material consideration for the scheme.
- Use of out-of-date models, data and assessment methods including:
 - A. An out-of-date Emission Factor Toolkit (EFT) which does not model emissions accurately between 2030 and 2050. Also out of date (BEIS) carbon factors and grid factors for assessing electric vehicle carbon emissions.
 - B. No TDP Sensitivity Test assessment despite acknowledging DfT requiring it on other recent schemes (eg A38 Derby)

3 New carbon prices have been released by Government for carbon appraisal. These are substantially different in quanta from the carbon prices used in the Applicant’s 60-year appraisal and economic case for the scheme. The economic case, and the Benefit Cost Ratio (BCR) need to be recalculated against the new carbon price data, and revised traffic modelling which corrects the above flaws. This should include: the construction carbon emissions on the cost side of the BCR; a solus quantification of the carbon emissions associated with the scheme based on the carbon impacts against the current environmental baseline; the full cumulative carbon emissions with other road and land development.

4 A fundamental issue remains that the Environmental Statement does not comply with the EIA Regulations. The Application should be refused on this ground alone.

5 The changes required to make the application viable and legitimate are substantial. The Applicant has unfortunately failed to consider the above points, or respond adequately on them, and make the relevant information available to the Examination. The ExA is not a position to be sure 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.

- 6 There is a lot of information missing from the Environmental Statement. I respectfully suggest that further information, data and modelling required will now need to be obtained under EIA Regulations 20 with further consultations.

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14 APPENDIX E: A57 LINKS ROAD [TR010034] “9.59 APPLICANT’S RESPONSE TO ISSUE SPECIFIC HEARING 2 ITEM 6 C) AND D)” A57/[REP5-026].....27

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1 INTRODUCTION

1.1 *Deadline 7 (D7)*

7 This is my submission for Deadline 7. It follows my written representations at REP2-022, and REP2-020, and the ISH2 in late January. I apologise to the ExA, and parties, that I have not been at the examination since then until now. [REDACTED]

8 I will comment on:

- A. A417/REP3-013, “8.21 Comments on Responses received by Deadline 2”.
- B. With reference to the Applicant’s response of February 9th, 2022, to the Secretary of State Consultation letter on the **A38 Derby Junctions** scheme, provided in Appendix D which I refer to as A38/RESP-8.122.
- C. With reference to another scheme which is still in examination, I refer to the Applicant’s response on the A57 Links Road scheme which I refer to A57/REP5-026 and provided at Appendix E.

1.2 *Recent changes to relevant policy*

9 I previously reported to the ExA at D2:

- (a) [REP2-022]/section 2.1: The Government’s Transport Decarbonisation Plan¹ (TDP) which requires ambitious quantifiable carbon reductions in transport at the local level was published on the 14th July, 2021. **Provided in Appendix B.**
- (b) [REP2-022]/section 2.2: The Government’s Net Zero Strategy² (NZS) backing the urgent need for ambitious quantifiable carbon reductions in transport, at the local level was published on 19th October, 2021. **Provided in Appendix C.**
- (c) [REP2-022]/section 1.3 and section 5: New carbon pricing data from the HM Treasury Green Book supplement on quantifying and valuing emissions of

¹ <https://www.gov.uk/government/speeches/transport-decarbonisation-plan>

² <https://www.gov.uk/government/publications/net-zero-strategy>

GHGs³, as transposed into an updated version of the DfT's WebTAG guidance⁴ and TAG data book (TAG Data Book November 2021 v1.17 (Table A3.4)).

1.3 Definitions

- 10 I refer to ExA to my submission at REP2-022 for discussion on definition and usage of “cumulative” and my definitions of “absolute emissions” and “differential emissions”, as applied to carbon emissions.

2 EIA REGULATION 20

- 11 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.
- 12 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)).
- 13 “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)”.

- 14 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”.

³ “Valuation of energy use and greenhouse gas: Supplementary guidance to the HM Treasury Green Book on Appraisal and Evaluation in Central Government”
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1024054/1.Valuation_of_energy_use_and_greenhouse_gas_emissions_for_appraisal_CLEAN.pdf

⁴ <https://www.gov.uk/government/publications/tag-data-book>

3 UPDATED IEMA GUIDANCE ASSESSING GREENHOUSE GAS EMISSIONS AND EVALUATING THEIR SIGNIFICANCE

In February 2022, IEMA released version 2 of their “Assessing greenhouse gas emissions and evaluating their significance” guidance, supplied at Appendix A. Although this is not a statutory document, it is relevant and valuable guidance on EIA Assessment of GHG emissions. 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.

15 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]

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

3.1 IEMA: Contextualising a project’s carbon footprint

17 In REP2-022, 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”.

18 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]

19 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]

3.2 Local and regional, policies and targets: “Important and relevant” matters

20 The applicant has only undertaken the “starting point” in the IEMA guidance – assessment against national carbon budgets. IEMA provide helpful elaboration as below in the diagram clipped below:

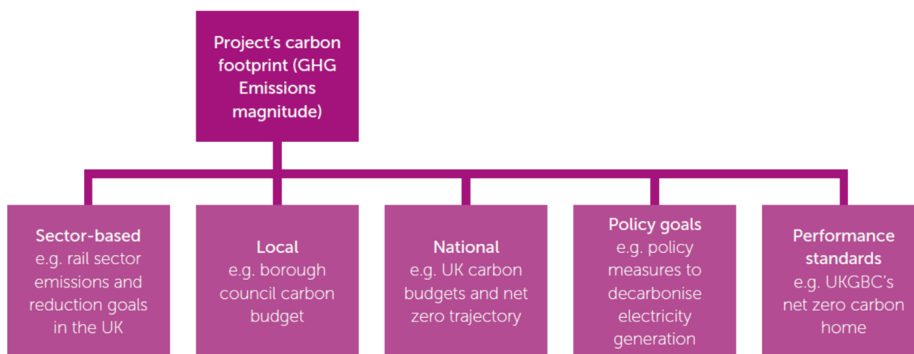


Figure 6: Good practice approaches for contextualising a project's GHG emissions

21 I previously set out possible ways that a carbon assessment test could be done against local or regional carbon budgets. For example, at REP2-022 section 4.4 and 4.5 (“Scaling to the Tewkesbury Borough” and “Local and national assessment based on Tewkesbury Borough (scaled)”). By contrast the applicant has only made a comparison of a figure (the wrong solus figure as above) against the national carbon budgets.

22 As I discussed at the ISH2, and also in REP2-022, the traffic model study area provides a proxy local/regional area which may self-scale, see REP2-022, bullet 53 onwards.

23 I suggest that the ExA should consider local policies and carbon budgets when they exist, or may be derived, or represented by proxies, as “important and relevant” matters in determining the application.

4 NET ZERO STRATEGY

4.1 Additional information on the Net Zero Strategy

24 Further to section 2.2 of [REP2-022], 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.

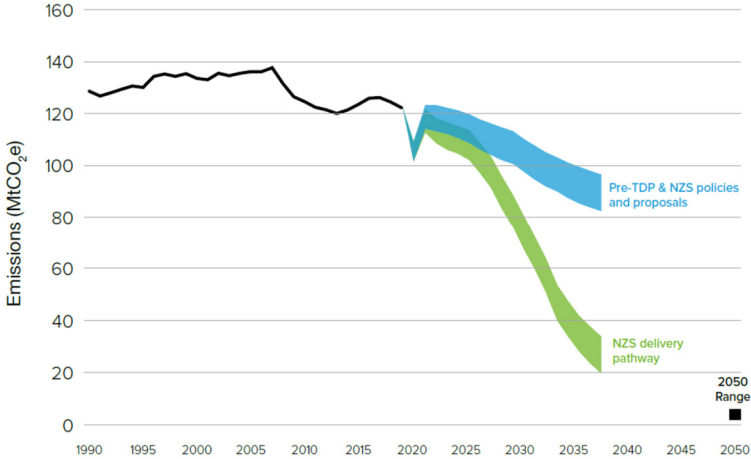
4.2 Surface transport decarbonisation targets in the Net Zero Strategy and the Transport Decarbonisation Plan

25 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

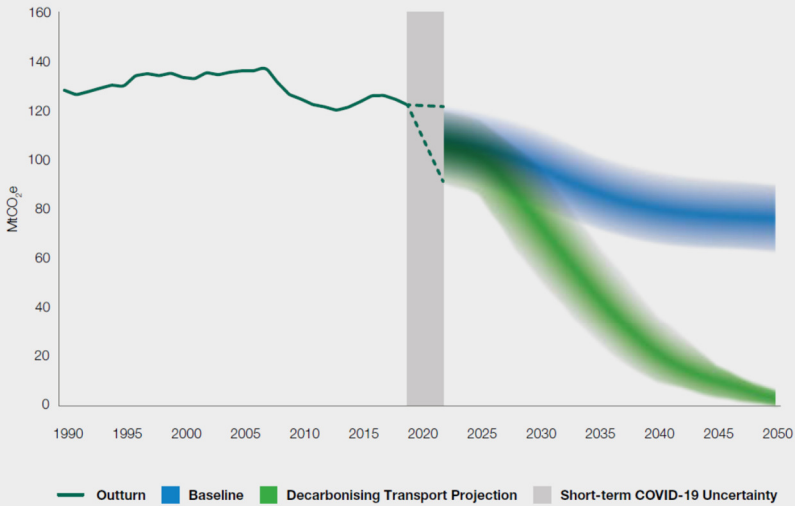
Figure 21: Indicative domestic transport emissions pathway to 2037



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.theccc.org.uk/publication/sixth-carbon-budget/>), which draw 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.

4.3 Net Zero Strategy in context of the NN NPS

26 The NN NPS 5.16- 5.19 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.

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

27 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.

28 The relevant budgets and targets include:

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

29 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.*”

30 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.

31 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.”

32 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 A417/REP3-013, SECTION 2.3 – APPLICANT’S RESPONSE TO MATTERS RAISED IN CEPP’S DEADLINE 2 SUBMISSIONS

5.1 A417/REP3-013, 2.3.2-2.3.12 - Assessment of Cumulative Effects of Greenhouse Gas Emissions from the Scheme with other Existing and/or Approved Projects

33 The applicant describes their traffic model as being “inherently cumulative” [REP3-013, 2.3.10] 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/TEMPRO growth factors for car usage, and growth in freight is derived from DfT’s National Transport Model.” [numbering added]

34 I do not dispute that the applicant's traffic model contains all these elements.

5.2 A417/REP3-013, 2.3.2-2.3.12 - Questions posed

35 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.

36 I pose two questions. **First**, can the applicant's argument at 2.3.9 and 2.3.10 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".'*

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

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

39 **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. Paragraph 2.3.10 is the crucial paragraph which demonstrates that the applicant has **only** performed a solus assessment of carbon emissions.

5.3 A417/REP3-013, 2.3.2-2.3.12 - Only a solus assessment is made

40 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:

"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'."

41 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.

42 However, this calculation produces a differential quantity of carbon emissions for the scheme which is the difference (DS-DM), **solely**, of the 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 SoS has invited the applicant to provide it.

43 Below I have modified Table 1 submitted in A417/REP2-020 so that it aligns with the broad elements 1) to 4) listed above, and illustrates the calculation made. This is a simplification: A417/REP2-020/Table 1 spelt out the 11 Local transport developments, 39 Wider-area transport developments, 85 land-use developments, Freight growth, Airport traffic growth but this detail is not required here.

Model configuration name	Performance-oriented (ie as in APP-426 and APP-422)	
	DM (Perf, baseline)	DS (Perf, all)
2015 Baseline Highway network (1)	✓	✓
A417 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

44 The red ellipse indicates the only change in the configuration between the DM and DS scenarios is the presence, or not, of the A417 scheme in the modelling, as the applicant identifies in the quoted statement above.

45 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 F. For the EIA Regulations, it is necessary to clearly distinguish solus and cumulative assessment, as Mr Justice Holgate does: solus⁵ 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 also the windfarm in combination with another windfarm which was undergoing a parallel DCO planning application (**ie cumulative**).

5.4 A417/REP3-013, 2.3.2-2.3.12 – What is the influence of other developments?

46 The applicant continues [2.3.11, 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.”

⁵ Solus means, here, “alone; separate” as in the first definition in the Collins on-line dictionary <https://www.collinsdictionary.com/dictionary/english/solus>.

47 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:

- 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.
- 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 derived from REP2-020, Table 2 and simplified for consistency with the applicant’s presentation at REP3-013/2.3.10.

Model configuration name	EIA Regs compliance-oriented (eg: for impact assessment of GHGs)	
	<i>DM</i> (GHG, baseline)	<i>DS</i> (GHG, scheme)
2015 Baseline Highway network (1)	✓	✓
A417 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

48 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) 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.

49 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 development.

5.5 A417/REP3-013, 2.3.2-2.3.12 – Performance-oriented vs EIA Regs compliance oriented traffic modelling

50 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.

51 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-426 and APP-422, and elsewhere.

52 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.

5.6 A417/REP3-013, 2.3.2-2.3.12 – Cumulative assessment

53 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 may be done as I previously submitted in REP2-020/Table 2, simplified below [as Table 3 in this document]. The required calculation is *DS (GHG, all) – DM (GHG, baseline)* in my nomenclature which has been fully explained in REP2-020. 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.

Model configuration name	Performance-oriented (ie as in APP-426 and APP-422)		EIA Regs compliance oriented (for impact assessment of GHGs)		
	<i>DM</i> (Perf, baseline)	<i>DS</i> (Perf, all)	<i>DM</i> (GHG, baseline)	<i>DS</i> (GHG, scheme)	<i>DS</i> (GHG, all)
2015 Baseline Highway network (1)	✓	✓	✓	✓	✓
A417 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

54 In summary:

- i. The applicant has identified that it has performed a single quantification of carbon. 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. This has already been explained in detail in REP2-020.
- ii. The solus quantification is the wrong solus quantification. 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.

55 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.

5.7 A417/REP3-013, 2.3.2-2.3.12 - Assessment of Cumulative Effects – PINS Advice Note 17

56 The applicant continues at REP3-013/2.3.12:

'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)."

57 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.

58 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

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

general, and often helpful, advice provided by the Planning Inspectorate, it has no statutory status as the website states.

- 59 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 on the basis of the traffic model including traffic data growth for future traffic flows.
- 60 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 are cancelled out by the subtraction process. This is also clear by considering Tables 1, 2 and 3 above.
- 61 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.
- 62 I conclude that Planning Inspectorate’s Advice Note 17 gives no support to the applicant’s claims in REP3-013, and accordingly the Secretary of State should also inevitably conclude that no weight can be applied to the note in this context.

5.8 A417/REP3-013, 2.3.13-2.3.23 - The Appropriate Geographical Scale of Assessment of Greenhouse Gas Emissions

- 63 Assessment against local policies and carbon budgets and targets should be made. This has been covered in REP2-022 where I provided the EIA Guidance documents to the examination, and in the IEMA guidance document as above.
- 64 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.
- 65 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.

5.9 A417/REP3-013, 2.3.13-2.3.23 - Transport sector targets

66 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.

67 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.

68 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).

69 The NZS delivery pathway, related to road transport, in the Figure below 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).

70 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.**

71 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.

72 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.

5.10 A417/REP3-013, 2.3.24-2.3.28 - How the Assessment Presented for the Scheme Complies with the Environmental Impact Assessment Regulations

- 73 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”.
- 74 The applicant claims at 2.3.27 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, as part of local, regional or national carbon budgets.
- 75 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.

- 76 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.*”
- 77 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**.
- 78 I also refer the ExA to previous submissions on the EIA Regulations and the NN NPS at A417/[REP2-020], section 3.4, section 5, Appendix A and Appendix B, and A417/[REP2-022], section 3.1.
- 79 I particularly refer the ExA to A417/[REP2-020], section 3.4, bullets 45-50. “*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).*”

6 A417/REP3-013, SECTION 2.3 – APPLICANT’S RESPONSE TO MATTERS RAISED IN CEPP’S DEADLINE 2 SUBMISSIONS – FURTHER COMMENTS

6.1 How the Assessment Complies with Various Carbon Budgets and Wider Carbon Policies

80 On the A38 Derby Junctions scheme, under a DfT consultation, and the A57 Links Road scheme, still under an NSIP DCO examination, further information has been supplied under the title “*How the Assessment Complies with Various Carbon Budgets and Wider Carbon Policies*”. Similar responses has been supplied also on a number of other schemes. See A38/RESP-8.122 supplied in Appendix D and A57/REP5-026 supplied in Appendix E.

81 The responses are canonical in that the same answers have been given on each scheme with variations just to the actual numerical data presented relevant for each scheme, and other minor but non-significant differences.

82 I refer the ExA to A57/REP5-026/2.2.30 which states:

“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 CO_{2e} emissions calculated for the Scheme assessment.”

83 The test referred to by the Applicant as the “TDP Sensitivity test”. The Applicant has not yet provided this new methodology for the A417 scheme. **I request that the ExA requires this test, and a full presentation of the methodology, as it is now being presented on other schemes by the Applicant to claim that its assessment complies with various carbon budgets and wider carbon policies.**

84 I have examined the method on a number of other schemes. Based on that, in order for the presentation of data provided by the applicant to be “examinable” by the ExA, these questions must be answered along with the presentation of the TDP Sensitivity 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 it 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.

7 NN NPS carbon test

7.1 *The carbon test and significance in the NN NPS*

- 85 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.
- 86 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.***”.
- 87 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).

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

89 Given the IEMA guidance that local targets are “*more pertinent*”, it would be valuable to assess the scheme against the NZS delivery pathway based on the study area as a proxy for the local and regional area.

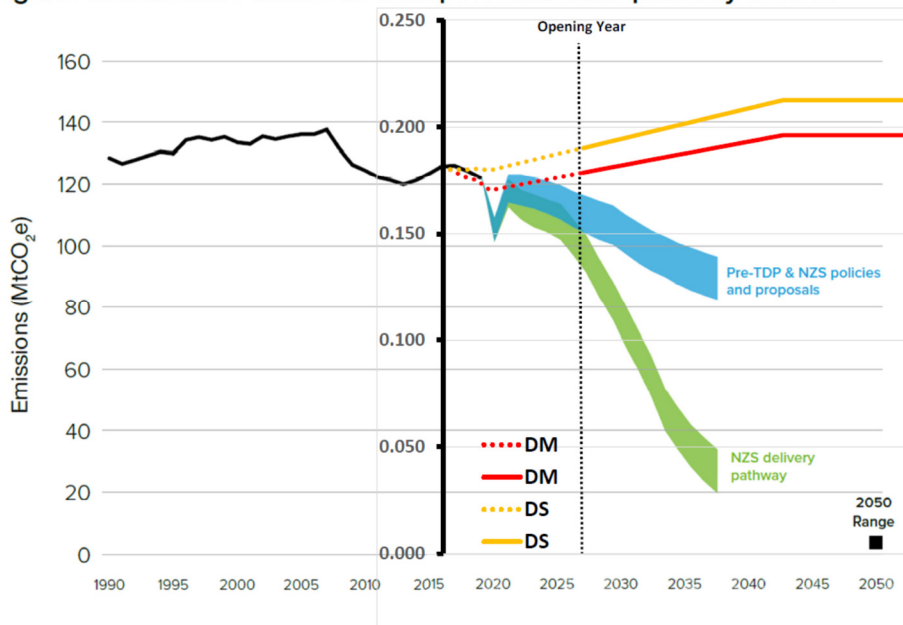
7.2 *Indicative local carbon reduction test and significance NN NPS*

90 On basis that the traffic model study area provides a proxy local/regional area which may self-scale, see REP2-022, bullet 53 onwards, and discussed at the ISH2, I have constructed a simple indicative test.

91 This uses the data that I had previously derived at REP2-022, Table 5. This table provided data at various years between 2016 and 2041 for DS and DM, and compares it to the NZS. I have now prepared this in graphical form by overlaying the data on the NZS, Figure 21 graph. Further, I have drawn the graph for DS-DM data. These are shown below.

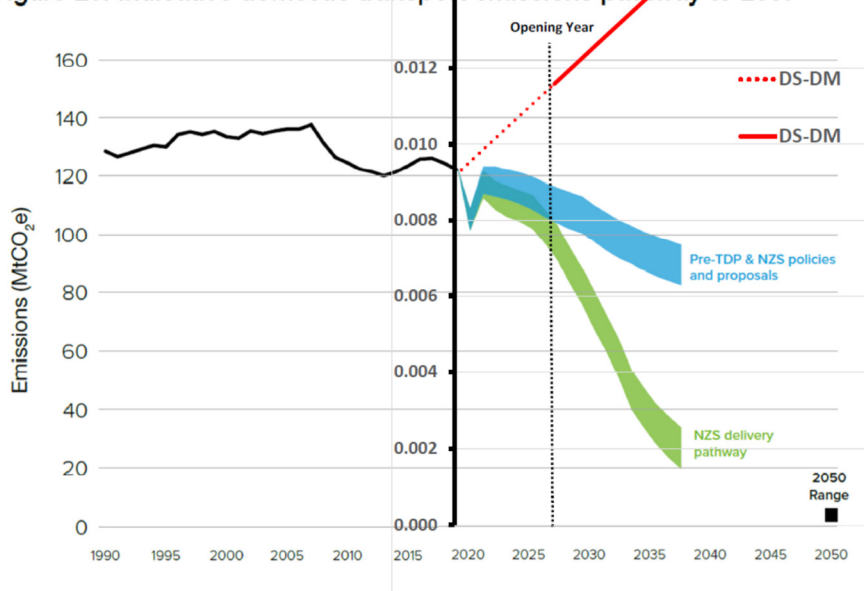
92 As the method involves backcasting the data to the 2019 Proxy and to 2016, I have shown the data from before the scheme proposed opening year of 2026 dashed. This backcasted data follows the same assumptions as the other data, as laid out in section 4 of REP2-022. It also contains the traffic growth assumptions in the traffic model as laid out in the Environmental Statement. (The DS and DM data has been plotted from 2016, and the DS-DM from 2019).

Figure 21: Indicative domestic transport emissions pathway to 2037



93 The data from the Environmental Statement shows that both the DS and DM traffic models increase carbon emissions, and that they are completely outside the bounds of the NZS delivery pathway.

Figure 21: Indicative domestic transport emissions pathway to 2037



94 The situation with the DS-DM data is worse. As it can be seen, carbon emissions due to the solus calculation DS-DM (NB: the wrong solus calculation as previously explained, but the one which the applicant uses for its assessment) rapidly grow. Again showing carbon emission increases which are completely outside the bounds of the NZS delivery pathway.

95 These plots confirm the conclusion in REP2-022 that the scheme demonstrates a huge emissions gap with respect to meeting both the 2030 and 2035 delivery pathways from the Net Zero Strategy.

8 FURTHER WORK REQUIRED

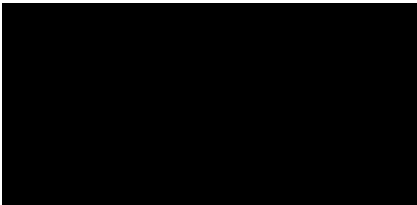
96 Further work and additions to the Environmental statement have been identified in this document and these include:

- 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. Delivery of the “TDP Sensitivity test” which is now being performed on other schemes in the DCO process.
- F. 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.
- G. Full data and algorithmic transparency on the modelling behind the TDP policies and the NZS delivery pathways.
- H. Full data and algorithmic transparency with respect to the “TDP Sensitivity test”.

97 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 remaining 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 to the standard Rule 17 procedure for ensuring the Environmental Statement is adequate, and which would also be fairer to all parties.

9 CONCLUSIONS

- 98 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 additional, further information is required, and required by EIA Schedule 4(6) and the Aarhus convention.
- 99 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.
- 100 This is in addition to missing data, and calculations, identified in REP2-022 and REP2-020.
- 101 A Rule 17 letter or suspension of the examination under EIA Regulation 20 are options to obtain the information.
- 102 If the information cannot be provided, the application should be refused.



Dr Andrew Boswell,
Climate Emergency Policy and Planning, April 11th, 2022

10 APPENDIX A: INSTITUTE OF ENVIRONMENTAL MANAGEMENT & ASSESSMENT (IEMA) GUIDE: ASSESSING GREENHOUSE GAS EMISSIONS AND EVALUATING THEIR SIGNIFICANCE", VERSION 2, FEB 2022

Supplied as separate document

11 APPENDIX B: TRANSPORT DECARBONISATION PLAN

Supplied as separate document

12 APPENDIX C: NET ZERO STRATEGY

Supplied as separate document

13 APPENDIX D: 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 E: A57 LINKS ROAD [TR010034] "9.59 APPLICANT'S RESPONSE TO ISSUE SPECIFIC HEARING 2 ITEM 6 C) AND D)" A57/[REP5-026].

Supplied as separate document

15 APPENDIX F: PEARCE V BEIS [2021] EWHC 326 (ADMIN) JUDGEMENT

Supplied as separate document