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DfT Consultation 15th June 2022

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.

RESUME

I realised recently that my life-scientific goes back over 50 years to when aged 14 I became passionate by the mystery of quantum mechanics. As an undergraduate, I studied for BSc 1977, 1st class honours in Chemistry at Imperial College London. My doctoral work¹, at Oxford University was supervised by Professor R J P Williams, FRS, and was in structural biology, protein binding sites and dynamics (DPhil², 1981). I later did an MSc in the then emerging area of “Parallel Computing Systems” at the University of the West of England (1994).

Most of my career has been in scientific computation and modelling. Between 1985 and 1993, I engaged in the software engineering, and testing, of modelling and simulation systems for the high-level design and logic synthesis of Very Large Scale Integrated (VLSI) circuits. These simulation systems were state of the art UK software³, and in the 1980s and 1990s were at the forefront of formal, mathematical based, methods in the verification of computer systems, both hardware and

¹ My doctoral supervisor was the prolific, much loved and highly missed, British chemist, Napier Royal Society Research Professor R J P Williams, FRS, MBE, see [REDACTED]

² DPhil title: “Nuclear Magnetic Resonance Studies of Modified Eukaryotic Cytochrome c”

³ See references to Electronic Logic Language (ELLA), one of the systems on which I worked, in “The development and deployment of formal methods in the UK”, (2020)

[REDACTED], Cliff Jones and Martyn Thomas, Professor at Gresham College. Professor Thomas was one of my mentors in computing and a superior colleague of mine from 1985-1992 when we both worked at Praxis Systems plc where he was a founding Director.

software, used in applications such as fly-by-wire commercial aircraft. Commercial customers of our products were running software models of microprocessors and Application Specific Integrated Circuits (ASICs), at that time⁴, of up to one million transistors.

Between 1995 and 2006, I ran the high-performance computer service at the University of East Anglia (UEA), and I supported the university's scientific research community in running models, across a range of sciences, on a small supercomputer which I developed and managed. I have a wide understanding of the principles and practice of modelling complex systems which I bring to my current work.

I provided consultancy across the science faculties at UEA on computer modelling. This ranged from advising several generations of PhD and post-doctoral research students on modelling issues including detailed program coding issues; advising professors and research leaders on system and architectural issues of modelling, and in many cases programming solutions for them; testing and debugging extremely complex modelling systems for scientists who did not have the relevant IT skills in forensic fault finding; systems administration of servers and several iterations of high-performance computers; and running training courses of parallel computing and scientific computing languages across the campus. Supporting scientists running climate models in UEA's esteemed Environmental Science department was a significant part of my work too.

Due to the climate crisis, from 2005 I have been involved in campaigning and politics, and have also been a Green Party Councillor on Norfolk County Council for 12 years. The severity of the climate emergency is clear through science and has been for several decades, and my work through CEPP now is to promote the necessary rapid response to the Climate Emergency in mainstream institutions, such as local authorities and government, through the lenses of science, policy, and law. I am an Expert contributor to the proposed UK Climate and Ecological Emergency Bill⁵, drafted by scientists, legal experts, ecological economists, and environmentalists, and designed specifically to reverse the climate and ecological breakdown that we are facing. The Bill recently had a second reading in the House of Commons.

I have been awarded a fellowship for 2022 from the Foundation for Integrated Transport⁶ to study "*Exposing the flaws in carbon assessment and transport modelling for road schemes*".

⁴ One million was cutting edge at the time! Transistor counts now exceed two trillion on a single chip

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SUMMARY

This submission responds to ExQ3.1.1 and ExQ3.1.2.

In order to respond to 1) the Examiner's EXQ3, and 2) the ExA's Rule 17 letter to me of 26th May 2022, I have provided summary background information on two issues: an overview, but no detail, of my analysis of carbon emissions in the A47WAN Environmental Statement, and an overview of the Net Zero Strategy legal challenge, on which the judgement is expected with the next few months.

I find that the decisions letters on three recent cases (M54-M6 scheme, M25 junction 10, M25 junction 28) **can provide no support to the A47WAN application**. The A47WAN needs to be assessed on its own merits. I find 10 key errors on the decision letters on carbon emissions which I have given in section 4. These relate to wrong assumptions which were not thoroughly tested by the process before the SoST decision letters. However, where these assumptions are made in the A47WAN Environmental Statement, we are still in the examination process and the evidence against them can be provided, if I am able to.

Without support from the three recent decision letters, I find that A47WAN Environmental Statement is inadequate under EIA Regulations 14(2), 20 and EIA Regulations Schedule 4. **The SoST cannot 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 until all the above points which I have listed are corrected. Without the necessary corrections being made, the application should be refused consent.

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1 INTRODUCTION

1.1 *Deadline D8, 14th June 2022*

- 1 This is my deadline D8 submissions, and responds to 1) the Examiner's EXQ3, and 2) the ExA's Rule 17 letter to me of 26th May 2022.

1.2 *Acronyms*

AST	Appraisal Summary Table
NDC	Nationally Determined Contribution
NZS	Net Zero Strategy
TDP	Transport Decarbonisation Plan

1.3 *Definitions*

- 2 For scientific precision, I use the following additional definitions:

- **Absolute emissions** – carbon emissions which are expressed in terms of **an absolute quantity** of emissions. The value of the absolute emissions, as released into the atmosphere, quantifies the real measure of the impact of greenhouse gases as an environmental factor (or receptor).
- **Differential emissions** – carbon emissions, with an associated value which has been **derived by differentiation of absolute emissions**. The differentiation is usually performed by the difference between two traffic scenarios, one with a transport intervention and one without. Differential values derived this way do not quantify the real impact of atmospheric greenhouse gases by the transport intervention within its transport system, and therefore do not represent the real global heating impact.

1.4 *Overview of submission*

- 3 In order to respond to 1) the Examiner's EXQ3, and 2) the ExA's Rule 17 letter to me of 26th May 2022, I need to provide background on two issues:
- A. An overview of my analysis of carbon emissions in the A47WAN Environmental Statement. This is because my comments on how the recent DCO decisions relate to the A47WAN scheme, require at a minimum for me to say what my key points are, as I refer to these points in my response to ExQ3.1.2. This is provided at section 2 below.
 - B. Provide an overview of the Net Zero Strategy legal challenge, on which the judgement is expected with the next few months, as I also refer to this in my response to ExQ3.1.2. This is provided at section 3 below.

C. Section 4 then provides my response to ExQ3.1.2.

2 CARBON EMISSIONS IN THE A47WAN ENVIRONMENTAL STATEMENT

- 4 The Rule 17 letter to me of 26th May 2022 restricted my comments to responding to matters outstanding at deadline 8 which for carbon emissions equates to ExQ3.1.1 and ExQ3.1.2. In order for my comments on these questions to be fully understood, it is necessary for me to make some outline comments on the Environmental Statement. I would usually do this with scientific, policy and legal precision, with a full evidence base. In the absence of being able to do so, under the Rule 17 letter, I make some overview comments here, just to provide context for my later comments on ExQ3.1.2
- 5 The A47WAN Environmental Statement is inadequate under EIA Regulations 14(2), 20 and EIA Regulations Schedule 4. Major issues are:
 - no cumulative carbon assessment has been done in breach of the regulations;
 - the solus⁷ calculation made of the carbon emission impacts of the scheme, and used for the carbon assessment, is the wrong calculation, an underestimate, and not calculated against the real environmental baseline. The whole assessment is wrong as a result;
 - there is an increase in carbon emissions resulting from the proposed scheme, although it is currently not calculated properly as above. Assessment has been based on an underestimate. It has, therefore, **not** been demonstrated that the scheme has no material impact of on the ability of Government to meet its carbon reduction targets (NN NPS 5.18).
 - no local carbon impacts assessment has been made against the best practice recommendations of the IEMA and EIA guidance, and the requirement of NN NPS 4.4;
 - there is a general issue of lack of data and algorithmic transparency, relating to both the traffic model and carbon emissions.

2.1 Provision of further analysis

6 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED]
 [REDACTED] I wish to re-

⁷ Solus means, here, “alone; separate” as in the first definition in the Collins on-line dictionary [REDACTED]. This is the same definition as “solus” in the sense described by Mr Justice Holgate in in Pearce v BEIS [2021] EWHC 326 (Admin)

emphasise that I suffered the loss of an elapsed three-month period of work between December and March. Whilst I did undertake some work during this period, I was completely unable pragmatically to continue to engage fully in many of my work streams, and I had to prioritise the most essential ones. I only started working again in early-mid March, and for full transparency I have placed for the record my work in March and April in the footnote⁸. I acknowledge that I have been most behind on the A47WAN scheme. This is largely a matter of timing, and not being able to submit a written representation and get off to a good start at deadline D2⁹ on February 15th. I also realise in retrospect that it might have been helpful if I had briefly written earlier to inform the ExA of the situation, and I apologise for not having done so.

- 7 If I am permitted to respond to REP2-036, Annex D at deadline D9, then the Applicant has the opportunity to respond at deadline D10 with the additional buffer of a further deadline at D11, before the examination closes on July 11th. This does not prejudice the applicant: my responses to the boilerplate submissions, similar in form to REP2-036, are already available on a number of the applicant’s schemes (for example, the A303 Stonehenge, and the A57 Pennine links road) and would be similar on the A47WAN. The applicant is afforded both forewarning of my arguments and plenty of time to respond to them on the A47WAN scheme.

- 8 By contrast, if I am unable to comment on REP2-036 within the A47WAN examination, I submit that this would:
 - limit the information in the examination library on cumulative carbon emissions¹⁰, which would in turn;
 - limit what can be said in the examination recommendation report, which would in turn;
 - limit the extent to which 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; and
 - prejudice me by unnecessarily restricting my ability to take part on the examination.

⁸ The representations which I have made as Climate Emergency Planning and Policy (CEPP) on other Nationally Significant Infrastructure Project (NSIP) Examinations were where these examinations were close to completion. I therefore prioritised the A47/A11 Thickthorn junction (closed March 23rd), the A147 Missing Link (closed 16th May), and A57 Links Road (closed May 16th). On each of these examinations, I have been fortunate to be allowed, at the ExA’s discretion some latitude in making representations. For example with respect to the Applicant’s same/similar boilerplate statement on carbon emissions at A47WAN/REP2-036, Annex D, I responded:

- on the A57 at deadline D8 (A57/ TR010034/REP8-029) to the applicant’s submission at deadline D5 (A57/TR010034/REP5-026), and
- on the A417 at deadline D7 (A417/TR010056/REP7-007) to the applicant’s submission at D3 (A417/TR010056/REP3-013).

⁹ [REDACTED]

¹⁰ Note essentially there is currently no information on cumulative carbon emissions in the Environmental Statement and examination library at present, as the applicant has not done an assessment of them

9 Should these matters later go to the Courts, I have made two requests now to be able to submit comments on REP2-036, Annex D. This stands me in good stead as having raised my concerns about the cumulative assessment of the impacts of carbon emissions, and the other matters above, at the A47WAN examination.

2.2 ExQ3.1.1

10 I note the ExA at ExQ3.1.1 requests clarification from the applicant on their various carbon emissions submissions. This clarification would be helpful, and I would hope to be able to respond to it at deadline D9 including being able to make comments on REP2-036 as above. This would resolve the concerns above that I am currently prejudiced within this examination.

3 THE LEGAL CLAIM AGAINST THE GOVERNMENT’S NET ZERO STRATEGY (NZZ)

- 11 Three separate legal claims were made to the High Court by Friends of the Earth, ClientEarth and the Good Law Project, each seeking to challenge the publication on 19 October 2021 of the “Net Zero Strategy: Build Back Greener” by the Secretary of State for Business, Energy and Industrial Strategy, in purported compliance with his duties under sections 13 and 14 of the Climate Change Act 2008.
- 12 At the application for permission to apply for judicial review (CPR 54.11, 54.12), the Honourable Mr Justice Cotter granted permission (on March 1st 2022) to apply for judicial review and observed “*the grounds advanced in this claim are arguable, with a realistic prospect of success, and merit investigation at a full hearing*”. The three cases have been rolled into one hearing which took place on June 8th and June 9th.
- 13 The key grounds for challenge relate to whether the existence of the NZS document, and the policies within it, provide the legal security, as required by the Climate Change Act sections 13 and 14, that the Government can meet its carbon reduction targets and carbon budgets. In essence, the claimants maintain that this is not the case. This is because, in part: the impact of the NZS on UK carbon emissions has not been fully quantified within the NZS; the SoST did not think he was required to be confident that the NZS proposals would enable the carbon budgets to be met when he published it; and it was not correct to rely on unquantified policies to make up the known shortfall in reductions for the 6th carbon budget. [This summary is based on the Claimant’s combined skeleton argument as published by the Good Law Project on their website].
- 14 The implications for the A47WAN application are that **it would be premature for weight to be given to any reliance by the Applicant upon the beliefs that 1** because various national climate change policy documents and targets exist (eg the NZS and the TDP), it is guaranteed that the Government will meet its carbon reduction targets and targets set within them, and consequentially, **2** the scheme will not have a material impact on the ability of the Government to meet its carbon reduction targets. These

arguments are developed by below in respect to the recent NSIP DCO decisions discussed in the next section, in response to ExQ3.1.2

- 15 The applicant is currently basing its arguments on **beliefs**, not quantified evidence from proven policy documents. The beliefs, and assumptions, are laid out in the next section and Appendix A.
- 16 There is no guarantee that the Government can meet its carbon reduction targets and carbon budgets under the Climate Change Act, as contested in the High Court. It is therefore not credible for the applicant to claim that the carbon emissions from the scheme are not “significant” and have no material impacts on meeting Government’s carbon reduction targets relating to NN NPS 5.17 and 5.18. **If the Government cannot prove that it can meet its carbon targets, then all new carbon emissions, such as those associated with the A47WAN scheme, are significant and material obstacles to meeting the national carbon targets and budgets.**

4 ExQ3.1.2: DECISION LETTERS ON M54-M6 SCHEME, M25 JUNCTION 10, M25 JUNCTION 28

- 17 On 21 April 2022, the Secretary of State for Transport (SoST) issued a decision on the M54 to M6 Link Road (decision letter referred to here as M54-M6-DL). Subsequently, two further decision letters were published on the M25 junction 10/A3 Wisley scheme on 12th May, and the M25 junction 28 scheme on May 16th. At ExQ3, the ExA requested representations on these decisions as they relate to the A47WAN application and examination.
- 18 On carbon emissions, the decision letters make many of the same points in identical, or near identical paragraphs. I dispute many of the points made by the SoST to support his determinations. I make my representations on them in response to ExQ3.1.2 below with reference to the paragraph numbers used in the M54 to M6 Link Road decision letter. I lay the points out in further detail in Appendix A.

4.1 *Comments on the decision letter on the M54-M6 scheme*

- 19 M54-M6-DL/31 incorrectly relies upon the inevitable success of the NZS (and TDP). As above, given the on-going judicial review, it is premature for weight to be given to any claims based on the notion that the NZS will inevitably succeed in securing the Government’s carbon emissions reduction targets (see Appendix A, 6.1).
- 20 Similarly, M54-M6-DL/37 incorrectly relies upon the inevitable success of meeting the UK NDC (which itself depends upon the success of the NZS). Again it is premature for weight to be given to any claims based on the notion that the NDC will inevitably succeed, and the UK will deliver its international obligations (see Appendix A, 6.2).
- 21 Negative weight was given to increasing carbon emissions in the planning balance (M54-M6-DL/54); however, this was “offset” by the assertion that the Government could still

meet their carbon reduction targets (ie under NN NPS 5.18). However, as above, it is premature to rely on this assertion (see Appendix A, 6.3).

- 22 The UK Government is a drafter and signatory to the policy statements associated with each of the recent Intergovernmental Panel on Climate Change (IPCC) 6th Assessment (AR6) reports. M54-M6-DL does not reflect the **scientific urgency** to deal with climate change, as laid out in this report despite the Government being a signatory to the science summarised in the policy reports (see Appendix A, 6.4).
- 23 M54-M6-DL/32-35 discusses the IEMA guidance. It selectively quotes from it, and does not follow it (see Appendix A, 6.5).
- 24 The applicant has not made a cumulative assessment of GHG emissions for the A47WAN scheme¹¹. (see Appendix A, 6.6).
- 25 The applicant has not followed the DMRB LA 104 on cumulative carbon assessment on the A47WAN¹², and therefore M54-M6-DL/40 cannot be relied upon (see Appendix A, 6.7).
- 26 The applicant relies upon the false “inherently cumulative” notion¹³, and the applicant has not produced a cumulative carbon emissions assessment on the A47WAN scheme¹⁴, and cannot rely upon M54-M6-DL/42-43 (see Appendix A, 6.8).
- 27 The applicant has not provided a cumulative carbon assessment in the A47WAN¹⁵ application. M54-M6-DL/45,47-48 cannot be relied upon within the recommendation for the decision making on the A47WAN scheme (see Appendix A, 6.9).
- 28 The applicant has not provided local and regional carbon assessment in the A47WAN¹⁶ application. M54-M6-DL/46 does not comply with the best practice guidance for EIA and cannot be relied upon (see Appendix A, 6.10).

5 CONCLUSIONS

- 29 The A47WAN Environmental Statement is inadequate under EIA Regulations 14(2), 20 and EIA Regulations Schedule 4. Major issues are:

- no cumulative carbon assessment has been done in breach of the regulations;

¹¹ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

¹² See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

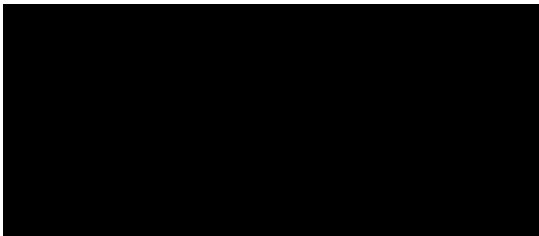
¹³ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

¹⁴ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

¹⁵ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

¹⁶ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

- the solus calculation made of the carbon emission impacts of the scheme, and used for the carbon assessment, is the wrong calculation, an underestimate, and not calculated against the real environmental baseline. The whole assessment is wrong as a result;
 - there is an increase in carbon emissions resulting from the proposed scheme, although it is currently not calculated properly as above. Assessment has been based on an underestimate. It has, therefore, **not** been demonstrated that the scheme has no material impact of on the ability of Government to meet its carbon reduction targets (NN NPS 5.18).
 - no local carbon impacts assessment has been made against the best practice recommendations of the IEMA and EIA guidance, and the requirement of NN NPS 4.4;
 - there is a general issue of lack of data and algorithmic transparency, relating to both the traffic model and carbon emissions.
- 30 The three recent NSIP DCO road scheme decisions provide no support for the A47WAN scheme for the reasons given in section 4 and Appendix A.
- 31 **The SoST cannot 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 until all the above are corrected.
- 32 Without the necessary corrections being made, the application should be refused consent.



Dr Andrew Boswell,
Climate Emergency Policy and Planning, June 14th 2022

6 APPENDIX A: DECISION LETTER ON M54-M6 SCHEME

6.1 *Incorrect reliance on the inevitable success of the TDP and the NZS*

33 At M54-M6-DL/31, the Secretary of State declares the “*background*” against which the Secretary of State has considered the Proposed Development:

“The Secretary of State considers that the majority of operational emissions related to the scheme result from vehicle usage and that the Transport Decarbonisation Plan includes a range of non-planning policies which will help to reduce carbon emissions over the transport network as a whole over time (including policies to decarbonise vehicles and radically reduce vehicle emissions) and help to ensure that carbon reduction commitments are met. Beyond transport, Government’s wider policies around net zero such as ‘The Net Zero Strategy: Build Back Greener’ (“Net Zero Strategy”), published by Government in October 2021 sets out policies and proposals for decarbonising all sectors of the UK economy to meet the net zero target by 2050. It is against this background that the Secretary of State has considered the Proposed Development.” (underline emphasis added)

34 It is clear from this statement, the SoS is predicating his decision on the basis of both overarching assertion, and subsidiary assertion of success for the road scheme in question, for both the TDP and NZS. However, it remains to be tested in Court whether the overarching assertion for NZS success is legitimate. It is, therefore, premature, and not legitimate, to predicate the decision on these assertions.

35 If the overarching assertion for NZS success is not legitimate, then the overarching assertion for the TDP success cannot be legitimate either. And the subsidiary scheme-specific assertions for the NZS and TDP are also not legitimate as a consequence.

36 It would also be premature for the SoS to make any reliance on overarching or subsidiary assertions of success for the NZS and TDP in deciding the A47WAN scheme.

6.2 *Incorrect reliance on the inevitable success of meeting the UK NDC*

37 At M54-M6-DL/37, the Secretary of State extends the overarching assertion of NZS success to an assertion of inevitable success in the UK meeting its NDC target of 68% carbon emissions reduction by 2030 compared to 1990:

“With regard to the Paris Agreement, the UK announced its Nationally Determined Contribution (“NDC”) in December 2020. NDCs are commitments made by the Parties (including the UK) under the Paris Agreement. Each Party’s NDC shows how it intends to reduce its greenhouse gas emissions to meet the temperature goal of the Paris Agreement. The UK’s NDC commits it to reduce net GHG emissions by at least 68% by 2030 compared to 1990. This represents an increase of ambition on the fifth carbon budget, which covers the period 2028-2032. The Net Zero Strategy:

*Build Back Greener, published by Government in October 2021, sets out how the UK will therefore need to overachieve on the fifth carbon budget to meet its international climate targets and **stay on track** for the sixth carbon budget. This strategy sets out the action Government will take to **keep the UK on track** for meeting the UK's carbon budgets and 2030 NDC and establishes the UK's longer-term pathway towards net zero by 2050. The Secretary of State is content that consenting the Proposed Development will not impact on the delivery of this strategy and will not lead to a breach of the UK's international obligations in relation to the Paris Agreement or any domestic enactments or duties.” (emphasis added)*

As the assertion of the inevitable success in the UK meeting its NDC target of 68% carbon emissions reduction by 2030 compared to 1990 is based upon the overarching assertion of NZS success, which is illegitimate, the conclusions in paragraph 37 are also premature, and are illegitimate. **From the evidence that the Government has made available, it is clear that the delivery of the NZS is not secured, and therefore, neither is the delivery of the NDC secured.**

38 Further, the bolded statements “stay on track” and “keep the UK on track” are perplexing as they do not agree with the assessment of the Government’s advisors the Climate Change Committee who have advised that the UK is “off track” for meeting the 4th, 5th and 6th carbon budgets (see Appendix B).

39 It would also be premature for the SoS to make any reliance on overarching or subsidiary assertions of success for meeting the NDC in deciding the A47WAN scheme. There is no evidence that the NZS has been designed to secure its objectives, and the security of delivering the NDC is therefore compromised too.

6.3 *Negative weight for increasing carbon emissions in the planning balance*

40 M54-M6-DL/54 states:

“Given that the scheme will increase carbon emissions, it is given negative weight in the planning balance. However, the Secretary of State considers that weight also needs to be given to the Transport Decarbonisation Plan that will mean operational emissions reduce over time and that in relation to climate change adaption the Proposed Development attracts positive weight in the planning balance.

41 However, there are a number of issues with this, and the SoS should not rely upon it for the A47WAN scheme. First, as above the SoS has already declared at M54-M6-DL/31, the background for the decision, and as in the previous section, the SoS is assuming the overarching and subsidiary assertions of success for the NZS, TDP and NDC. These assertions are not legitimate.

Second, the SoS then claims that weight needs to be given to the TDP. However, in terms of meeting national carbon budgets and targets, the Government have not demonstrated the

overarching assertion of success for the TDP or NZS. Therefore, no weight can be given to the TDP against the negative impact of increasing emissions.

Third, the SoS claims positive weight should be given to climate adaptation. However, greenhouse gas emissions and the vulnerability of the project to climate change are specified as two distinct environmental factors, or receptors in the EIA Regulations (eg: see EIA Regulation Schedule 4 (4) and Schedule 4 (5)(f)). Therefore they are not transmutable environmental factors.

The seriousness of the negative weight of increasing carbon emissions can only be balanced against full security in delivering the carbon budgets and targets. To understand the full impacts of the scheme’s carbon emissions is not a luxury, it is an absolute necessity. This full knowledge and appraisal are required not only by the law, but also by the global scientific evidence as endorsed by the UK Government as below, by the precautionary principle, and by the principle of sustainability.

However, neither the NZS or TDP has been quantitatively demonstrated to be designed to secure the carbon budgets and targets. Failure to meet carbon budgets and targets cannot be balanced by the notion, even if true, that the particular scheme may be slightly more robust against the physical impacts of climate change.

42 For the A47WAN scheme, the result of this is that the scheme will increase emissions, and this has negative weight in the planning balance. There is currently no legitimate way to demonstrate positive planning weight for carbon emissions.

6.4 The necessity of being led by the science

43 The sub-section is included for context on the previous section on the negative for increasing carbon emissions in the planning balance on the M54-M6-DL/54, which is also reproduced on the A47WAN scheme, and, as above, cannot be “offset” in the way M54-M6-DL/54 claims.

44 It is important to understand that the full knowledge and appraisal of carbon emissions for the A47WAN scheme must be “led by the Science” *as the global scientific evidence on Climate Change is endorsed by the UK Government*. As background, the Intergovernmental Panel on Climate Change (IPCC) has published three recent reports (all part of its 6th Assessment Report, AR6): the UK Government is a drafter and signatory to the policy statements associated with each of these reports¹⁷. These form the latest scientific knowledge on Climate Change, represent a massive scientific endeavour, and are underwritten for their policy implications by our own government.

¹⁷ The three latest Summaries for Policymakers are: August 2021 “Climate Change 2021: The Physical Science Basis”, 2022 “Climate Change 2022: Impacts, Adaptation and Vulnerability”, April 2022 “Climate Change 2022: Mitigation of Climate Change”. Professor Skea is quoted from UN Press Release, “UN climate report: It’s ‘now or never’ to limit global warming to 1.5 degrees”, 4th April 2022,

45 The implications of this scientific consensus extend to all levels of government and administration in the UK having been authorised by our national Government. As has been widely reported, the IPCC reports make a clear and unanimous case for very urgent action on Climate Change actioned the immediate and rapid reduction in carbon emissions – not over decades, but over years in the very near future (45% cuts by 2030¹⁸).

46 On April 4th 2022, Professor Jim Skea, OBE, CBE from Imperial College, London and Co-Chair of IPCC Working Group III said on the release of the latest report “*It’s now or never, if we want to limit global warming to 1.5°C (2.7°F); without immediate and deep emissions reductions across all sectors, it will be impossible*”. This means starting serious, evidence-based decarbonisation now in 2022 – not next year, nor the next, nor 2025, **but now**. The Application is not consistent with what the scientific consensus requires, as underwritten by our own Government. This would be especially true if it was considered that increases in carbon emissions this decade from the A47WAN scheme can somehow be offset in the planning balance against policy documents which have not been designed to secure their objectives (ie: the NZS and TDP).

6.5 IEMA guidance

47 M54-M6-DL/32-35 discuss the latest IEMA guidance. There are a number of issues.

48 The SoS selectively quotes IEMA. The IEMA guidance (the latest February 2022 version) at section 6.4 on “Contextualising a project’s carbon footprint” has been ignored. IEMA says 1) assessment of a project’s carbon emissions against the carbon budget for the entire UK economy **is only a starting point of limited value** in the EIA process 2) local policies and budgets and targets should be used. This latter point is also in line with the EIA guidance (which itself is material guidance to the NN NPS as the NN NPS invokes the EIA Regulations).

The SoS decision at M54-M6-DL does not identify that local and regional assessment of carbon emissions has not been done, and therefore that the Application for that scheme is not consistent with the IEMA guidance, nor the EIA guidance.

49 M54-M6-DL/33 correctly quotes the IEMA guidance with respect to “significance” that “*that GHG emissions have a combined environmental effect that is approaching a scientifically defined environmental limit and as such any GHG emission or reductions in these might be considered significant.*” However, the SoS then does not take the logical step that this statement from IEMA implies that securing the delivery of the NZS, TDP and NDC are vital. Simply we are near to the limit of carbon emissions which may be generated (the “remaining global carbon budget” in the scientific jargon). Instead the SoS assumes inevitable success in delivering the NZS, TDP and NDC, and therefore concludes that GHG emissions from the project are not

¹⁸ “Global net human-caused emissions of carbon dioxide (CO2) would need to fall by about 45 percent from 2010 levels by 2030, reaching 'net zero' around 2050”, Summary for Policymakers of IPCC Special Report on Global Warming of 1.5°C, 2018.

significant. However, assuming such inevitable success is false, the conclusion cannot depend upon them and is also false.

50 For the A47WAN scheme, it would be premature and incorrect for the applicant to use M54-M6-DL/32-35 to support claims such as:

- that comparisons of carbon emissions made solely against UK carbon budgets in line with the NSPNN, and consistent with the IEMA guidance;
- that any assessment made on such a singular comparison is legitimate to conclude that the carbon emissions from the A47WAN scheme will not have a material impact on the ability of Government to meet its legally binding carbon reduction targets.

6.6 Overview - the (non) Assessment of Cumulative of GHG emissions from the A47WAN scheme

51 First, it is important to note that I can show in detail that no cumulative carbon assessment has been made, and that the solus carbon assessment is based upon the wrong quantification which is an underestimate of the emissions¹⁹. I can show that the notion that the assessment made by the applicant is cumulative because the traffic model is “inherently cumulative” is false²⁰.

52 The SoS may be tempted to draw a comparison between the A47WAN scheme and the M54-M6 applications and claim that M54-M6-DL/39-51 would provide support. Apart from the fact that no cumulative carbon assessment has been made for the A47WAN, I lay out below why this would be an incorrect comparison.

6.7 The applicant does not follow the DMRB

53 At M54-M6-DL/40, the SoS says “*the Secretary of State notes the Applicant’s responses set out that the assessment of cumulative impacts of the scheme on climate was undertaken in line with DMRB guidance*”.

54 DMRB LA 104 is clear how cumulative assessment should be done. First it provides a definition of “cumulative effects” on page 7:

“Impacts that result from incremental changes caused by other present or reasonably foreseeable actions together with the project.

NOTE: For the purposes of this guidance, a cumulative impact can arise as the result of:

¹⁹ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

²⁰ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

- a) *the combined impact of a number of different environmental factors specific impacts from a single project on a single receptor/resource; and/or*
- b) ***the combined impact of a number of different projects*** *within the vicinity (in combination with the environmental impact assessment project) on a single receptor/resource.” (emphasis added)*

55 The receptor in question here is greenhouse gas emissions under EIA Regulations Schedule 4.

56 Then under the “Cumulative effects” section of DMRB LA 104:

3.19 EIAs must include cumulative effects in accordance with the requirements of the EIA Directive 2014/52/EU [Ref 1.N].

3.20 Non-statutory environmental assessments shall include cumulative effects.

3.21 Environmental assessments shall assess cumulative effects which include those from:

1) a single project (e.g. numerous different effects impacting a single receptor); and

*2) **different projects (together with the project being assessed).***

3.21.1 Cumulative effects should be assessed when the conclusions of individual environmental factor assessments have been reached and reported.

*3.21.2 **The assessment of cumulative effects should report on:***

*1) **roads projects which have been confirmed for delivery over a similar timeframe;***

*2) **other development projects with valid planning permissions or consent orders, and for which EIA is a requirement; and***

*3) **proposals in adopted development plans with a clear identified programme for delivery.***

3.22 The assessment of cumulative effects shall:

1) establish the zone of influence of the project together with other projects;

2) establish a list of projects which have the potential to result in cumulative impacts; and

3) *obtain further information and detail on the list of identified projects to support further assessment.*”

57 It is quite clear from both the definition, and the summary definition at 3.21 that the meaning of the “different projects”, or cumulative quantification and assessment, is that the carbon emissions of all the relevant developments in the study area under 3.21.2 and 3.22 should be summed together.

58 The applicant is **correct** that the architecture of its DS traffic model potentially provides for this calculation. The applicant is **incorrect** that its selected architecture for its DS-DM quantification on the A47WAN, based on the outputs of this model, provides a cumulative quantification or assessment²¹.

59 In summary, the applicant has not followed DMRB LA 104, nor complied with it with respect to making an EIA Regulations compliant cumulative assessment of carbon emissions. The applicant has not only not followed its own industry guidance, but it has also not met the legal requirements of the EIA Regulations.

60 The SoS, therefore, cannot rely upon similar arguments to M54-M6-DL/40.

6.8 The false “inherently cumulative” notion

61 M54-M6-DL/42 says: *“The Secretary of State notes that the Applicant’s response of 26 January 2022 set out that the traffic model used to support the scheme assessment is inherently cumulative with regard to operational carbon emissions. This is because traffic models include data on the emissions resulting from the Proposed Development and the adjoining Strategic Road Network and the local road network as well as other schemes promoted by the Applicant in the vicinity of the scheme that have a high certainty of being progressed.”*

62 M54-M6-DL/43 says: *“With regard to operational carbon, the Applicant’s approach to assessing the impact on carbon emissions is to consider the changes in carbon emissions resulting from the Proposed Development 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’, with the former providing the baseline for assessment. The Applicant considers that this takes into account 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. The Applicant considers that as both the with and without scheme scenario includes all likely developments and traffic growth factors it is inherently cumulative.”*

²¹ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

63 On the A47WAN scheme, I can show that the applicant has only made a solus quantification and assessment of carbon emissions from the scheme²². The solus quantification is the wrong solus quantification and is an underestimate of emissions from the scheme in isolation. No cumulative assessment has been done.

64 I can also explain that the “influence” of all other developments **is not the same** as **quantifying** their environmental impact²³, in this case on the EIA receptor of global GHG emissions, which is what the EIA Regulations require.

65 The applicant has not established for the A47WAN scheme what is claimed for the M54-M6, and therefore, cannot rely upon M54-M6-DL/42 and M54-M6-DL/43.

6.9 Cumulative assessment of the impact of carbon emissions

66 M54-M6-DL/45 starts: “The Secretary of State considers that as there is no single prescribed approach to assessing the cumulative impacts of carbon emissions, there are a number of ways such an assessment can acceptably be undertaken and that this does not necessarily need to be done at RIS level.” (underline emphasis added)

67 The applicant may seek comfort from the underlined sentence. However, the point is that no cumulative carbon assessment has been done at all for the A47WAN scheme²⁴, so whether a prescribed approach has been followed is academic.

68 M54-M6-DL/47 includes “As well as being a requirement of the NPSNN, the Secretary of State considers that assessing a scheme against the carbon budgets is an acceptable cumulative benchmark for the assessment for EIA purposes with regard to both construction and operation.”

69 M54-M6-DL/48 includes “Overall, the Secretary of State considers that the information provided by the Applicant with regard to the impact of the scheme on carbon emissions (including the cumulative effects of carbon emissions from the scheme with other existing and/or approved projects in relation to construction and operation) is sufficient to assess the effect of the development on climate matters and represents the information that the Applicant can reasonably be required to compile having regard to current knowledge.”

70 The applicant may seek comfort from the above quotes. However, the point is that no cumulative carbon assessment has been done at all for the A47WAN scheme²⁵, so these quotes are not relevant.

²² See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

²³ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

²⁴ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

²⁵ See my comments at Section 2 – I have not been able to provide details on this, under the Rule 17 letter on May 26th 2022

6.10 Local and regional carbon assessment

71 M54-M6-DL/46 says “*The Applicant considered that it was unable to produce a baseline at a local or regional scale and that there was therefore no reasonable basis upon which it can assess the effects of carbon emissions for anything other than at the national level. The Secretary of State accepts that the only statutory carbon targets are those at a national level and notes that neither the Applicant nor any other party has suggested that there are non-statutory carbon targets at any other level that may need to be considered.*”

72 The IEMA guidance, and EIA guidance, strongly advocates local and regional assessment of carbon emissions. The SoST statement here does not comply with the best practice guidance for EIA.

The applicant may claim that an assessment against local/regional targets cannot be undertaken for the A47WAN scheme. Such a claim reveals that the applicant’s intention is “can’t do” rather than “can do”, and it would also suggest that the applicant has not looked very far to find the relevant targets and to develop methods to assess against them, even despite the urgency implied by the rapidly changing landscape of climate legislation and targets. Such an intentionally negative approach goes against the IEMA and EIA guidance outlined above, and any technical innovation to meet it as outlined below.

7 APPENDIX B: Climate Change Committee, Advice on reducing the UK’s emissions

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