

From:
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A47BNB Registration: **20027985**

A47NTE Registration: **20028338**

A47THI Registration: **20028381**

October 24th 2021

By email, to:

Planning Inspector Alex Hutson, Examining Authority (ExA), A47 Blofield to North Burlingham Examination (A47BNB)

Planning Inspector Adrian Hunter, Examining Authority (ExA), A47 North Tuddenham to Easton Examination (A47NTE)

Planning Inspector Matthew Shrigley, Examining Authority (ExA), A47/A11 Thickthorn Junction Examination (A47THI)

Dear Inspectors Hutson, Hunter and Shrigley,

Request for cumulative carbon emissions to be considered together for the A47BNB, A47NTE and A47THI examinations

As you are clearly well aware, currently, there are three planning examinations running in parallel for three A47 schemes which are all contained within a 12-mile radius of the centre of Norwich. The Environmental Statement, and application, of each scheme is, by nature of the individual planning examinations, being considered for each scheme in isolation.

The issue of climate change and its cause, anthropogenic carbon emissions, is an extremely serious one, and currently inhabiting the national psyche when, as a country, the UK prepares to host the United Nations COP26 Climate Change summit.

As a scientist, and through the forensic examination of the Environmental Statements for each A47 scheme, I have reached the conclusion that the assessment of carbon emissions in each Environmental Statement is *inherently solus*¹ ie only assesses each scheme in isolation. And therefore no cumulative assessment has been made of carbon emissions for each scheme.

The evidence for this is across a spectrum from the blindingly obvious (eg: no mention of cumulative carbon assessment in ES, Chapter 14² on Climate Change for each scheme) to the

¹ Solus means, here, "alone; separate" as in the first definition in the Collins on-line dictionary
[REDACTED]

² A47BNB: TR010040/APP/6.1 [REP2-002]; A47NTE: TR010038/APP/6.1 [REP3-014]; A47THI: TR010037/APP/6.1 [APP-051]. The word "cumulative" is used only referring to the UK carbon budget across the economy. It is not used in the sense of cumulative assessment.

complex (eg: the designing out of cumulative assessment in the Do Minimum and Do Something assumptions in each Transport Assessment³).

I have made similar submissions, based on the same forensic examination of the Environmental Statements, and legal and policy frameworks, to each of the examinations. The consistent picture which has emerged is that the Environmental Statements for each of these schemes does **not** demonstrate cumulative assessment of carbon emissions which complies with the EIA Regs and Design Manual for Roads and Bridges (DMRB) guidance. Each scheme therefore is in breach of the EIA Regulations, and other guidance.

I wish to point out that the NPS NN **directly invokes** the EIA Regulations (“EIA Regs”) at NPS NN 4.15 and 4.16. There can be no dispute that the NPS regime is expected to be fully compliant with the EIA regime (and these same invocations are common to other NPSs⁴). The Courts are willing to enforce this as in *Pearce v BEIS* [2021] EWHC 326 (Admin)⁵. In *Pearce*, the relevant cumulative impacts **had** been assessed for one scheme (the North Vanguard Offshore Wind Farm) to account for a second scheme (Norfolk Boreas Offshore Wind Farm). The issue was that the SoS had not taken account of the cumulative assessment which already existed in the DCO decision for the first scheme. The situation is distinctly different with the A47 schemes where the issue is that the EIA Regulations compliant cumulative impacts assessment of carbon emissions of any one of the three schemes with the other two schemes, and other programmed road schemes, has not even been attempted yet.

This may be simply demonstrated by just one piece of data – the total of each scheme’s construction emissions. This is one datum from the overall carbon picture, which I have presented in my Written Representation (WR) to each examination⁶. In each WR, there is a Table 4 in which I reproduce the Applicant’s solus calculation of the construction carbon emissions for each of the schemes as follows: A47BNB 25,765⁷ tCO₂e; A47NTE 87,727⁸ tCO₂e; and A47THI 25,946⁹ tCO₂e.

If there was a legitimate attempt to comply with the EIA Regs Schedule 4, Para 5(e) and assess the “cumulation of effects with other existing and/or approved projects”, then the construction emissions for the three schemes would have been considered in cumulation. The sum of these figures, ie 139,438 tCO₂e, from the data published by the Applicant individually in each of the three Environmental Statements. A child would have no difficulty in understanding this example.

³ A47BNB: TR010040/APP/6.1 [REP1-044], “Table 6-2: DM/DS network assumptions”; A47NTE: TR010038/APP/6.1 [within APP-140], “Table 4.3 DM/DS network assumptions”; A47THI: TR010037/APP/6.1 [within APP-125], “Table 4.3 DM/DS network assumptions”. In each case, the referenced table shows that DS-DM is **a solus incremental change to the network for the scheme in question**, cumulative carbon emissions assessment is designed out by such a schema. In my A47 D5 submission (no library code available yet), I explain this for the A47BNB case at section 4.11.

⁴ For example, section 4.12 and 4.13 of “Airports National Policy Statement; section 4.2 of the Overarching National Policy Statement for Energy (EN-1) although this invokes the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 (SI 2009 No. 2263) (“the **2009** Regulations”) rather than the more recent Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 (SI 2017 No. 572) (“the **2017** Regulations”).

⁵ *Pearce v BEIS*, 149: “Here the Claimant has succeeded in establishing a breach of the 2009 Regulations, as well as a domestic error of public law (irrationality) and a breach of the duty to give reasons (which straddles both EU and domestic law, the 2009 Regulations and the PA 2008)”.

⁶ The data is presented in Table 4 in my WR to each examination, A47BNB: TR010040 [REP2-018]; A47NTE: TR010038 [REP1-023]; A47THI: TR010037 [library code not assigned yet]

⁷ Section 14.8.3, A47 BLOFIELD TO NORTH BURLINGHAM DUALLING, Environmental Statement Chapter 14 [TR010040/APP/6.1, REP2-002]

⁸ Section 14.8.3, A47 NORTH TUDDENHAM TO EASTON DUALLING, Environmental Statement Chapter 14 Climate [TR010038/APP/6.1, APP-053]

⁹ Section 14.8.3, A47/A11 THICKTHORN JUNCTION, Environmental Statement Chapter 14 Climate [TR010037/APP/6.1, APP-051]

As the three schemes have approximately similar construction timelines and the same 2025 opening year, these cumulative emissions will all be generated **both** within the small 12-mile radius area around Norwich (much smaller than any combined local authority areas when local assessment is considered), and within the first three years of the 4th carbon budget (2023-2027). There is, therefore, both a spatial and temporal impact, related to carbon emissions, which requires sensitive, and comprehensive, assessment.

None of the Environmental Statements perform even the simple and limited cumulative construction emissions calculation, shown above, nor assess the carbon impacts associated with it, despite these emissions arising proximally to each other, and from the same programme(s) of development to which they each belong. At the local and regional level, they each belong to a wider set of A47 schemes that have been lobbied and funded under the same umbrella, and the Applicant's webpage¹⁰ for A47NTE lists A47BNB and A47THI amongst "Related Road schemes". The A47 Alliance and Norfolk County Council is lobbying for twelve, including these three, A47 schemes to be implemented within this decade, see below. At the national level, they are each part of the RIS2 programme.

For the purposes of this high-level letter, non-compliance with the EIA Regs is demonstrated by the fact that the Applicant has not even calculated, nor given regard to, the cumulative carbon emissions from construction, as above. Yet, this is only a small part of the overall cumulative carbon picture. Further schemes are being planned, and the example above is limited to construction emissions only on just three of many possible schemes in the local and regional context.

With road-use operation emissions, making a similar calculation is harder as the calculation is a modelling output. Considering just the three A47 schemes under examination, the calculation would depend on having a clearly defined traffic model common to each scheme which uses the same assumptions, and ensures that journeys are not counted multiply (ie double counting), when the schemes are consider in cumulation. Each of my WRs, and subsequent submissions, have each explained carefully why cumulative road-use emissions may currently not be calculated due to there being no coherent approach to the modelling by the Applicant, within and between each scheme. As a former university-based researcher and scientific modeller, I understand the architectural issues of computer modelling¹¹, and it is not beyond the wit of humankind to solve these issues – indeed, I have identified many of the issues that need to be resolved at a model architecture level to enable carbon assessment which is EIA Reg and DMRB compliant. **The problem for the Applicant is that they have never gave regard to how to do cumulative carbon assessment at**

¹⁰ [REDACTED]

¹¹ As part of managing a high-performance parallel computing system at the University of East Anglia (UEA), I gave consultancy to across the science faculties on computer modelling. This ranged from advising several generations of PhD and post-doctoral research students on modelling issues including detailed programming 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 a high-performance computer; 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.

My former manager, Dr Kevin Worvill who was at UEA for 35 years and Systems Manager across the whole campus, has provided a brief statement which with his permission, I quote here:

"In the 1990s Dr Andrew Boswell joined the group to help set up the first parallel computing facility and take the lead in scientific computing support for the University. He has proven expertise in the analysis of complex scientific problems, particularly in the area of environmental and climate issues, and in implementing computer codes for their solution. Based on his track record I would trust his judgment on any related issues."

the outset on each of the three schemes. These issues should have been resolved at the EIA Scoping stage, but they were not.

I must emphasise here that the simple example above does not include other programmed schemes such as the Norwich Western link and Long Stratton bypass, each with further significant construction emissions, as I have noted in my WRs, and also other A47 schemes for which funding is currently being lobbied for from central government in the autumn 2021 Comprehensive Spending Review if these go ahead later this decade¹². The latter lobby exercise is for a total of nine further A47 schemes, on top of the existing three, each of which will emit construction emissions and initial road-user emissions into the critical decarbonisation period before 2030.

For context on the decarbonisation period to 2030, last week, the Government published its Net Zero Strategy (NZS). Figure 21¹³ in the report shows the “*indicative domestic transport emissions pathway to 2037*”: the Government strategy is for a fall in domestic transport emissions by around 34-45% by 2030 and 65-76% by 2035, **relative to 2019 levels**. The NZS is also quite clear that local level quantifiable carbon reductions, requiring local carbon budgets and monitoring will be vital in this endeavour in stating “*We are driving decarbonisation and transport improvements at a local level by making quantifiable carbon reductions a fundamental part of local transport planning and funding.*”

It is abundantly clear that if twelve A47 schemes, of which the current three would be just the start, and other local road schemes like the Norwich Western Link and the Long Stratton by-pass, were delivered into this decade then the cumulative impacts would severely compromise the Net Zero strategy. This is true, also when considering just the three schemes currently at Examination, as I show in my WRs.

The Applicant has gone to considerable effort to avoid having to acknowledge even the simple example of cumulative construction emissions, above, which is just the tip of the iceberg when associated road-user carbon emissions are added, and then the other schemes potentially in the pipeline. To do so, they have employed multiple and contradictory definitions of “cumulative” and other terms. I have presented an unravelling of the multiple conflicting definitions for the A47BNB¹⁴ examination.

I have previously, and respectfully, requested that each of you as the Examining Authority for your scheme gives serious consideration to suspending the Examination under EIA Reg 20 so that the missing data¹⁵ on carbon emission appraisal, and a large list of non-compliances may be resolved in the Environmental Statement. The issue of the lack of a cumulative carbon assessment in each scheme is the forefront issue. Each of these requests remains current.

¹² I am advised that current/recent lobbying was asking that three further A47 schemes, the *Acle Straight dualling, Tinley to East Winch dualling, and the Peterborough to Wisbech dualling*, be added to the current programme, which is for 2020 to 2025, although full delivery would probably be in the next 5 year period. Funding for further schemes including the *Lowestoft to Great Yarmouth dualling, Dereham to Swaffham dualling, Swaffham to East Winch dualling, Wisbech Bypass dualling, Guyhirn to Thorney dualling, and Thorney to Peterborough dualling*, has also been part of the lobby, including starting scheme development work during the current period (2020-2025). (Norfolk County Councillor, Paul Neale, personal communication)

¹³ [REDACTED], page 154 of main document.

¹⁴ A47BNB: TR010040 D5 submission [currently no library code assigned]

¹⁵ The missing data is identified in Table 2 in my WR to each examination, A47BNB: TR010040 [REP2-018]; A47NTE: TR010038 [REP1-023]; A47THI: TR010037 [library code not assigned yet]

I now make the further request that, as the ExA's for each of three A47 schemes, that you give consideration to resolving the carbon emissions assessment issues, which I have raised consistently across each scheme, by some joint process. The purpose for this request is that the issues on each scheme may be resolved by a unified approach across the schemes which requires development by the Applicant of a coherent modelling architecture that enables each scheme to be assessed on the three-step modelling process which we have outlined in each WR. This makes possible both solus and cumulative carbon assessment of road-user emissions, but determining incremental output changes between the different steps whereas the current modelling precludes this.

Step ① Define the baseline – the current status of the environmental factor – for the foundation of the assessment process (baseline).

Step ② Determine the impact from the “construction and existence of the development” (solus).

Step ③ Determine the impact from “cumulation of effects with other existing and/or approved projects” (cumulative).

The example given above shows step ③ for construction emissions is just a simple addition exercise. The point is that for road-use operation emissions, step ③ requires a coherent modelling architecture across the schemes which the Applicant has not yet developed. Without getting into more complex arguments, as I do in my submissions, it is quite clear that the modelling architectures, on each scheme, are not consistent by just observing the Do Minimum absolute road-user emissions for each scheme for the 5th carbon budget (chosen to show a full 5-years of operation): A47BNB 5,182,172¹⁶ tCO₂e; A47NTE 4,673,125¹⁷ tCO₂e; and A47THI 4,640,659¹⁸ tCO₂e. If the three schemes were being modelled in a unified approach, then the baseline (ie **Step ①**) outputs would be the same, but they are not.

Elsewhere I have made more complex arguments about the choice of the model study area(s), the sub-types of carbon emissions requiring assessment, the advocacy for local and regional modelling within the EIA guidance which the Applicant hasn't followed, and other issues. The simple point here is that the different study areas reflect in different DM model output emission figures, in other words different starting places in terms of what is in the model. This indicates that the applicant has never seriously considered how to model cumulative road-use emissions across the A47 schemes, because if they had, they would have chosen a common study area with a common starting place. Then steps ② and ③ can readily be made, and without the double counting issue that the ExA raised on the A47BNB scheme.

The situation with the Examination process on each scheme is now becoming ridiculous. The Applicant is refusing to acknowledge that their Environmental Statement for each scheme does not comply with the EIA Regs and DMRB as I have laid out. The applicant is also not engaging in the submissions from other parties, including myself¹⁹, and not responding to issues raised. In their denial of the situation, the Applicant is repeating the same mantras, and arguments, over and over

¹⁶ Table 14-9, A47 BLOFIELD TO NORTH BURLINGHAM DUALLING, Environmental Statement Chapter 14 [TR010040/APP/6.1, AS-004]

¹⁷ Table 14-10, A47/A11 THICKTHORN JUNCTION, Environmental Statement Chapter 14 Climate [TR010037/APP/6.1, APP-051]

¹⁸ Table 14-10, A47 NORTH TUDDENHAM TO EASTON DUALLING, Environmental Statement Chapter 14 [TR010038/APP/6.1, APP-053]

¹⁹ As an example, recent responses from the Applicant to my submissions has only responded to summary information and has clearly not engaged in the detail of the arguments in the bodies of my submissions.

again. I have responded to these where I can, but it is an unsatisfactory situation which should not be allowed to continue.

As the issues are common to each scheme, as demonstrated by my submissions, a common approach to resolving the problems of all three schemes is sensible and rational. With respect, I suggest that it could be resolved by the ExA's on each scheme considering the issues around cumulative carbon issues together, and then requiring a common approach to settling the issues on each of the schemes. In practical terms, this would require suspension of each examination under EIA Regulation 20, and then requiring the necessary remodelling and changes to the Environmental Statements for each scheme from a common "written statement" under EIA Regulation 20 (1)(a), (b) and (c).

I respectfully ask each of you as ExA's to seriously consider this request.

I am grateful for your consideration of it.

Yours sincerely



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<END OF LETTER>