

From: [REDACTED]
To: [M3 Junction 9](#)
Subject: Response to ExQ1/6.1.11 - Climate Emergency Planning and Policy
Date: 11 June 2023 22:11:15

Dear ExA (m3junction9@planninginspectorate.gov.uk)

M3, Junction 9 Improvement project

From: Dr Andrew Boswell, Climate Emergency Planning and Policy

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Deadline D2: Response to ExQ1

I am currently on holiday until the end of June. I note the ExA's request at Q6.1.11 (as reproduced below) for my comments on local and regional carbon budgets. Usually, I would prepare a submission, with full references and with worked out examples of each of the carbon budgets described. However, on this occasion, I hope this brief email provides the ExA with an adequate response for the moment. I will provide further elaboration in my written representation (WR) at a later deadline. Please note my separate email requesting late submission of my WR due to my holiday.

Q 6.1.11

The ExA notes that the Transport Action Network and Dr Andrew Boswell comment that the Proposed Development should be compared against local and regional transport carbon budgets. Please could these parties suggest how such budgets could be identified, taking into account that the Government has not issued any forecasts of cumulative carbon emissions at a scale below the national level.

1. Why use local and regional carbon budgets?

This section is provided as background before responding directly to Q 6.1.11. National Highway's modus operandi for the environmental impact assessment (EIA) of the impact of carbon emissions (both construction and operation) from the scheme is to compare a solus** estimate with national carbon budgets.

**Solus meaning here the emissions for the scheme in isolation, and not the scheme in cumulation with other foreseeable developments as the EIA Regulations require. The lack of cumulative assessment is just noted here and will be expanded upon in my WR.

This method produces figures such as 0.002% for the comparison against national carbon budgets as stated at 14.19.9 of the ES.

I submit these reasons why local and regional budgets provide not just helpful, but also essential, contextualisation in addition to the national budget comparison.

(1) The best practice guidance from IEMA states that the national carbon budgets are "a starting place" for determining the EIA significance of the impacts of carbon emissions but expressly recommends that further valuable contextualisation can be provided by comparisons with local and regional budgets.

(2) The precision of the scientific process of evaluating the significance of the emissions is enhanced by using different sources and scales of benchmark for comparison. Scale is

important. Carbon emissions may have a global environmental impact, but their effect is quantified for EIA purposes from their source location, in this case the scheme and its study area. Greater precision results from evaluating the impacts over an area which is at a scale closer to the study area source of the emissions. I have calculated on other schemes that the accuracy of the comparison may be increased typically by around 10,000 to 100,000 times (ie four to five orders of magnitude) when absolute cumulative emissions are compared with a benchmark based the transport sector carbon footprint, or budget, over an area such as a local authority area.

(3) This is important because the greater precision gives a much better perspective of how the estimated emissions relate to the significance threshold (for example, the IEMA Guidance significance thresholds). It also provides much greater confidence about the significance assessment made. This is critical as the use of local and regional carbon budgets for contextualisation can change the value of the significance assessment made. This is why local and regional budget comparison is essential in meeting the EIA requirement to assess the significance of environmental impacts of the scheme, and for the decision maker to give consideration to that environmental impact. For example, a scheme identified as "Minor Adverse" by comparison with only a national carbon budget may be found to be "Major Adverse" when contextualisation with local and regional budgets is added to the overall significance assessment and contextualisation process. I will expand on this in my WR.

2. How can such budgets be identified?

National Highways has claimed on other schemes that it cannot identify such budgets because the Government has not issued any local or regional carbon budgets. This claim misunderstands the IEMA guidance and its recommendations for local and regional contextualisation. As above, the contextualisation is required to provide greater precision and confidence about the significance assessment made. Contextualisation, in this usage, does not require an exact percentage to be calculated. Rather it is looking for whether the emissions from the scheme align or not more broadly with the local or regional carbon budget. Therefore exact forecast figures as a formal budget from Government are not required. What is required is a coherent methodology, and figures, which can provide a clear determination of whether emissions align with national climate policies.

To produce a meaningful contextualisation, gumption and a little scientific creative thinking are required - not budgets pre-prepared by the Government "on a platter".

I now give a number of such methods that produce a "fit for purpose" local or regional carbon budget, in brief outline.

3. Comparisons with historic local authority emission figures

The Department of Energy Security and Net Zero (DESNZ, formerly BEIS) publish in each June figures for emissions across all sectors for each local authority area in the UK from 2005. The June 2023 release will provide the figures for each year between 2005 and 2021. It is therefore trivial to find the emission trends across the relevant local authority area(s) for all sectors and the transport sector.

Several things may then be done with this data to contextualise the emissions from the proposed scheme. An example of a clear method would be to take the local authority transport emissions in 2019, and apply the reductions implied from the national trajectory (which starts at 2019) for transport in the Net Zero Strategy (NZS). I note the trajectory has recently been republished in the Powering Up Britain (PUB) reports on March 31st,

and will write about the implications of this in my WR. Applying the national NZS trajectory to the existing current local authority area emissions produces a set of annual data against which the 2027 and 2042 data from the EIA Climate Change chapter can be compared.

The proportion of the transport emissions of the total may also be calculated for use later, for example at a base year such as 2019, see below.

4. Scaling the study area with the NZS transport sector trajectory

In this method, the DM emissions from the study area (representing the total transport emissions as modelled in the transport model study area) may be compared with the national emissions to calculate a scaling factor. For example, the study area DM emissions may be calculated as 1/100th of the projected national emissions for a certain year (linear interpolation of figures may be used to produce figures for the right year if necessary). Having determined the scaling factor, in this example 1/100th, transport sector carbon budgets may be calculated scaled to the scheme study area for each year based on the NZS trajectory. This provides a baseline with which to compare the scheme emissions. The contextualisation here is providing an answer to the question "how does the scheme perform within its own modelling study area if that area is taken as a fair share of the national NZS target and budget?".

5. Tyndall Centre local authority budgets

The Tyndall Centre for Climate Change research at the University of Manchester has produced carbon budgets for every local authority in the UK. These are science based carbon budgets based on the UK making a fair contribution to the Paris agreement. More detail will be provided in my WR.

These budgets may be used to calculate annual budgets for (1) all sectors in the local economy, and (2) the transport sector. The transport sector can be calculated from the "all sectors" figures by simply applying the transport sector proportion already calculated "for use later" at 3 above. This assumes that this transport share goes forward as a constant whilst meeting national climate targets might require a reduction in the transport proportion of emissions over the local authority area, given that transport is the largest sector of emissions. However, the method provides a clear method to determine to assess the significance of carbon emissions from the schemes against the UK's international obligations under the Paris agreement if assumptions, such as this, are clear and understood.

I have provided 3 methods for contextualisation with local and regional carbon budgets to enhance the precision and accuracy of significance assessments, based on an initial comparison against national carbon budgets. There are other possible methods, but these three together will produce a comprehensive, and fit for purpose, contextualisation process.

6. Revised Climate Change chapter

I finally note that the applicant recently published a update to the ES Climate Change chapter. This made significant changes to the estimates of carbon emissions, but did not appear to give any rationalisation of why the changes had been made. It would be helpful for the changes to be explained by the Applicant to the ExA and parties as soon as possible. .

Yours sincerely,

Dr Andrew Boswell