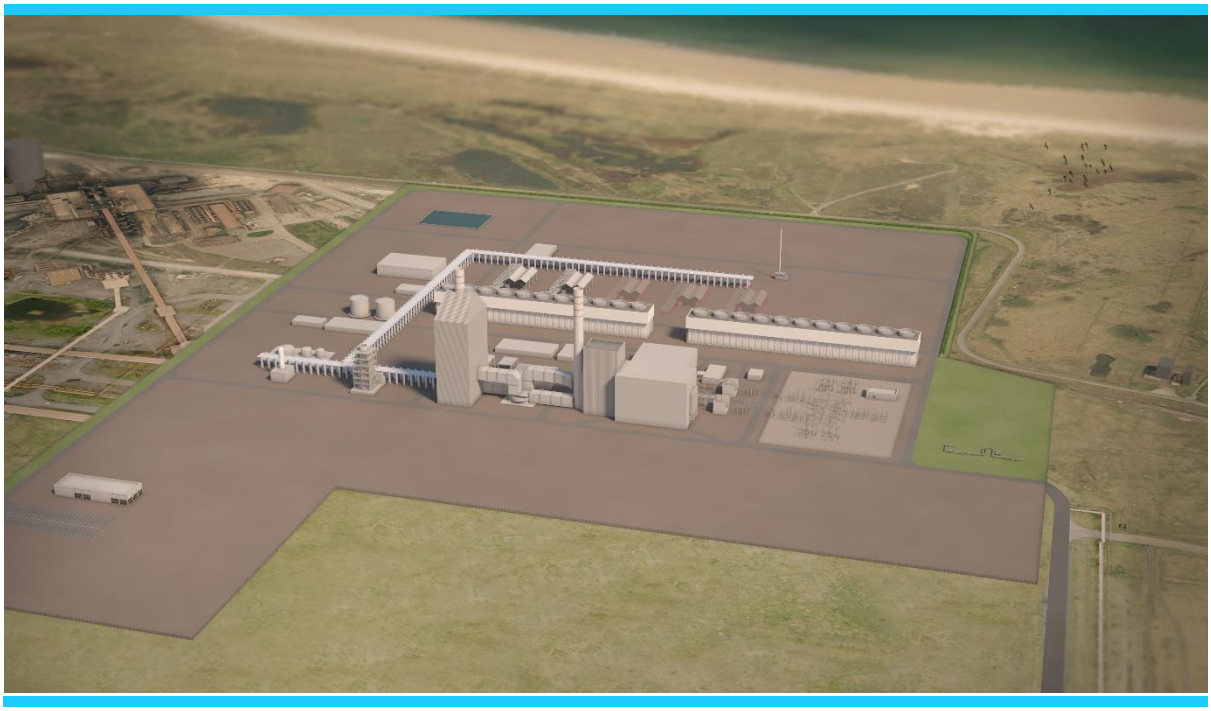
Net Zero Teesside Project

Planning Inspectorate Reference: EN010103

Land at and in the vicinity of the former Redcar Steel Works site, Redcar and in Stockton-on-Tees, Teesside

The Net Zero Teesside Order

Document Reference: 9.53 Applicants' Response to Climate Emergency Policy and Planning Letter dated 30 May 2023



Applicants: Net Zero Teesside Power Limited (NZT Power Ltd) & Net Zero North Sea Storage Limited (NZNS Storage Ltd)

Date: August 2023

DOCUMENT HISTORY

Document Ref	9.53		
Revision	1.0		
Author	Pinsent Masons		
Signed	ID	**Date**	04.08.23
Approved By	bp		
Signed	PE	**Date**	04.08.23
Document Owner	Pinsent Masons		

CONTENTS

TABLES

1.0 INTRODUCTION

1.1 Overview

1.1.1 The Secretary of State for the Department of Energy Security and Net Zero published a Consultation Letter on 16th of May 2023. Climate Emergency Policy and Planning (CEPP) submitted a response to this letter on 30th May 2023. The CEPP post-Examination Submission focuses on a recent scientific paper published in the Royal Society of Chemistry (RSC) journal on the potential underreporting of methane (CH4) emissions from upstream UK oil and gas activities[1].

1.1.2 In their post-Examination Submission, CEPP claims that:

1. The conclusions of the RSC paper mean that upstream methane emissions have been underreported in the Proposed Development's Environmental Statement (ES) relative to an assessment using standard upstream emissions factors;
2. The Applicant has to date not provided any assessment of upstream emissions from the natural gas supply chain;
3. The draft Energy National Planning Statements (NPSs) do not address upstream supply chain methane emissions; and
4. Underreporting of upstream emissions means that the Proposed Development would contribute a significant proportion to the Power Sector residual emissions within the UK Government's Carbon Budget Delivery Plan (CBDP).

1.1.3 This response to the CEPP post-Examination Submission will address and counter points 1. 2, and 4.

1.1.4 In respect of point 3. in the list above, the Applicants note that sections 2.3, 3 and 4 of CEPP's Post Examination Submission comprises a generalised commentary on recent Government policy papers, namely the draft Energy NPS and the 'Powering Up Britain' (PUB) document and the CBDP. In so far as CEPP's commentary on these Government policy papers (referring to the PUB and CBDP together as the 'Net Zero Strategy' or the 'NZS') has not been particularised to the NZT Project and DCO, the Applicants have not provided a response. To the extent that CEPP seeks to challenge the lawfulness of the NZS, it is the view of the Applicants that consideration of the NZT DCO application is not the proper forum in which to make submissions of that nature. Any challenges to Government policy documents can be made via judicial review of those policy documents directly and that is the appropriate forum to do so. In the absence of any Court Order quashing the adoption of a policy, policy which is material to a decision remains lawful and must be taken into account.

[1] https://pubs.rsc.org/en/content/articlelanding/2023/ee/d2ee03072a

1.1.5 The Applicants note in this regard the recent judgment of the High Court in R *(Together Against Sizewell C Limited) v Secretary of State for Energy Security and Net Zero* [2023] EWHC 1526 (Admin) where, at paragraph 132, the Court dismissed an attempt by the claimant in that case to challenge Government policy via judicial review of the Sizewell C nuclear power station project. The Court held that: "The claimant should have abandoned ground 4, but chose instead, in effect, to try to continue its challenge to the merits of Government policy through the means of judicial review. The use of the court's process in that way is wholly inappropriate".

1.1.6 The Applicants have also provided a full commentary on the draft revised NPSs in Appendix 6 to the Addendum provided to the Secretary of State contemporaneously with this submission (Document Ref. 6.6).

2.0 THE REPORTING OF METHANE EMISSIONS FROM UPSTREAM UK OIL AND GAS ACTIVITIES.

2.1.1 There are two main reasons why the Applicants do not accept the argument put forward by CEPP based on the content of the RSC paper. One relates to the process associated with the assessment of Greenhouse Gas (GHG) emissions and the other is a substantive point relating to that assessment.

2.1.2 Firstly, as a matter of assessment process it is established good practice for the reasons set out in the next paragraph that all emissions included in a GHG assessment are estimated, as far as is practicable, on the basis of recognised standard factors. In the case of upstream emissions from the natural gas supply chain – generally referred to as Well to Tank (WTT) emissions – the factor used in the ES for the Proposed Development, as updated during examination **[REP6-123],** was taken directly from the relevant year's DEFRA/BEIS factors[2]. The factor is derived from a report (Study on Actual GHG Data for Diesel, Petrol, Kerosene and Natural Gas), produced for the European Commission by Exergia et al[3]. The study explicitly included upstream emissions from venting, flaring and other fugitive emissions within the natural gas supply chain.

2.1.3 The annual UK Government publication is an industry-standard dataset of emissions factors, and their continued use across multiple businesses, sectors and projects helps to ensure that operational emissions data is produced using the same overall scope, boundaries and assumptions, and is therefore comparable between different installations and operators. This official dataset is the standard to be applied for all projects with ongoing operational emissions and accordingly its use as a source of data for the NZT project GHG assessment is both rational and appropriate.

2.1.4 Secondly, the Applicant does not consider that the estimated methane leakage rate presented in the RSC paper cited in the CEPP submission is of relevance to the Proposed Development. The RSC paper specifically discusses fugitive methane emissions from United Kingdom upstream oil and gas activities, while the power station within the NZT project will consume natural gas only during its operational life.

2.1.5 Within the ***oil*** industry, there are frequently occasions when methane may need to be vented or flared as necessary for operational or safety reasons, and therefore these methane emissions are likely to be proportionally higher than those within the ***natural gas*** supply chain, within which methane itself is the product. For this reason, it is not reasonable or rational to take an estimated methane emissions rate from the wider oil and gas sector and then apply it to the natural gas supply chain.

[2] https://www.gov.uk/government/collections/government-conversion-factors-for-company-reporting
[3] https://energy.ec.europa.eu/system/files/2015-08/Study%2520on%2520Actual%2520GHG%2520Data%2520Oil%2520Gas%2520Final%2520Report_0.pdf

2.1.6 For both of these reasons, it is not considered reasonable, rational or a robust approach to revisit the upstream emissions factor for natural gas in light of the paper cited by CEPP. The overall conclusions of the GHG assessment as presented in ES Vol I Chapter 21 Climate [**APP-103**] remain valid, as does the evaluation of significance. When assessed in isolation, the significance of the Proposed Development is evaluated as Minor Adverse and Not Significant. But when assessed in combination with the Proposed NEP Offshore Development the significance is evaluated as Beneficial and Significant. This evaluation of significance is discussed in more depth in the NZT – NEP cumulative GHG assessment (Document Reference 9.29 [**REP6-123**]).

3.0 INCLUSION OF UPSTREAM WELL TO TANK EMISSIONS IN THE GHG ASSESSMENT CONSIDERED AT EXAMINATION

3.1.1 It is acknowledged that upstream Well to Tank (WTT) emissions were not initially included within the GHG assessment submitted within the ES Vol I Chapter 21 Climate Change **[APP-103].**

3.1.2 This information was however provided into the Examination at Deadline 6 in the Applicants' Cumulative Onshore and Offshore GHG Assessment (Document Reference 9.29; **[REP6-123]** (the "NZT – NEP cumulative GHG assessment"). This document presents an assessment between the proposed development (the NZT Project) and the separately proposed Northern Endurance Partnership (the NEP Development)[4].

3.1.3 Table 3.1 within the NZT – NEP cumulative GHG assessment provides a breakdown of the embodied and operational emissions associated with the Proposed Development, including the WTT emissions from the consumption of natural gas as a fuel in the power station.

3.1.4 Paragraph 3.1.2 of the NZT – NEP cumulative GHG assessment specifically discusses these upstream WTT emissions from the extraction, refining and transportation of natural gas within the cumulative assessment. These emissions were estimated over the design life of the Proposed Development using the appropriate WTT factor for natural gas provided in the 2022 dataset of emissions factors published by DEFRA/BEIS[5]. The application of this factor results in WTT emissions of 0.4 $MtCO_2e$ per annum over the 25 year design life of the Proposed Development.

3.1.5 Subsequent to the production of the NZT – NEP cumulative GHG assessment during 2022, the UK Government has published an updated set of emissions factors in June 2023. The 2023 WTT factor for natural gas is almost 3% lower than the corresponding factor for 2022, meaning that were the GHG assessment to be carried out using the most recent set of factors, the upstream WTT emissions calculated would be proportionally lower than those reported in the NZT – NEP cumulative GHG assessment. As noted above, this factor, in common with many emissions factors used to estimate operational emissions, is subject to change with the result that projected future emissions are inevitably subject to a degree of uncertainty. Notwithstanding this recognised limitation, the emissions figures presented within the NZT – NEP cumulative assessment are based on the most appropriate and up to date emissions factors available at that time.

3.1.6 Table 3-1 of the NZT – NEP cumulative GHG assessment **[REP6-123]** itemises the various emissions sources and data for the construction and operational phases of

4 The cumulative assessment did not consider the emissions avoided through the connection of other 3rd party emitters to the Proposed NEP Transport and Storage system.
5 https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2022

the Proposed Development; this is the same as the Onshore element of the cumulative GHG assessment. Table 3-1 of the NZT – NEP cumulative GHG assessment is repeated as Table 1 below.

Table 1 GHG emissions from the construction and operational phases of the Proposed Development

ONSHORE GHG EMISSIONS	ACTIVITY	GHG EMISSIONS (TCO_2E)
Construction	Embodied carbon of materials and products	64,170
	Material and product transport	2,974
	Electricity use	176
	Onsite fuel use	3,755
	Waste disposal	65
	Worker commuting	4,873
	Total construction emissions over construction duration	**76,012**
	Annualised	***19,003***
Operation	Electricity usage	11,779
	Uncaptured direct emissions from combustion of natural gas	5,929,380
	Well to Tank emissions from upstream supply of natural gas	10,101,668
	Waste disposal	308,892
	Workers commuting	7,922
	Materials	392,506
	Materials transport	30,037
	Total operation over 25 year period	**16,782,184**
	Annualised	***671,287***
Total Onshore GHG Emissions		***16,858,196***

3.1.7 The Well to Tank emissions from the upstream supply of natural gas shown above is derived from the standard WTT emissions factor for natural gas published by the UK Government in its 2022 dataset of conversion factors for company reporting. As noted above, this factor includes the venting, flaring and fugitive emissions from the natural gas supply chain.

3.1.8 The NZT – NEP cumulative GHG assessment also summarises the embodied and operational emissions associated with the offshore element of the proposed NEP development within Table 3-2, and the carbon capture data that represents emissions from the Proposed Development avoided through the use of the Transport and Storage (T&S) system within the Proposed NEP Development is shown in Table 3-3.

3.1.9 The overall cumulative emissions from the Proposed Development together with the NEP Project are summarised in Table 3-4 in the NZT – NEP cumulative GHG assessment, which is repeated as Table 2 below.

Table 2 Summary of cumulative GHG emissions from the Onshore and Offshore elements of the Proposed NZT – NEP Developments

DEVELOPMENT	PHASE	GHG EMISSIONS (TCO_2E)
Onshore Construction and Operation	Construction (4 years)	76,012
	Operation (25 years)	16,782,184
	Total Onshore	**16,858,196**
Offshore Construction and Operation	Construction (3 years)	324,699
	Operation (25 years)	30,988
	Decommissioning	1,721
	Total Offshore	**357,408**
Carbon capture *(NZT only)*	Carbon captured	-53,364,418
	T&S unavailability	3,592,523
	Overall carbon storage	**-49,771,895**
Whole life GHG emissions		**-32,556,291**

3.1.10 The net lifetime emissions impact of the Proposed Development and the proposed NEP development is therefore a net emissions reduction of over 32 $MtCO_2e$, relative to a without-project baseline, which is reasonably assumed to be an unabated Combined Cycle Gas Turbine of similar size and running hours.

4.0 CONTRIBUTION OF EMISSIONS FROM THE PROPOSED DEVELOPMENT TO SECTORAL CARBON BUDGETS WITHIN THE CBDP

4.1.1 CEPP's submission asserts that the supply chain methane, calculated on the basis of the RSC paper discussed above, will "consume over 6% of the CBDP Power sector residual emissions in the 6CB, and that is very significant". As noted in Point 1 above the Applicants do not recognise the basis for CEPP's calculation of supply chain methane emissions. The figure for upstream emissions from the natural gas supply chain shown in Point 2, which explicitly includes emissions from the venting, flaring and fugitive emissions of methane, is derived from the UK Government's official figure for Well to Tank emissions from the supply of natural gas.

4.1.2 In terms of the CBDP, the Applicants note that the CBDP was issued by the UK Government on 30 March 2023. This document sets out the Government's detailed proposals and policies to enable the delivery of Carbon Budgets 4, 5 and 6 (i.e. for the period to the end of 2037) in accordance with the UK's Net Zero carbon commitment under the Climate Change Act 2008. Budgets for later Carbon Budget periods have not yet been proposed or ratified.

4.1.3 The carbon budgets apply to the whole of the UK economy and society. The CBDP is based on an adjusted version of the Government's Energy and Emissions Projections, which apply assumptions of future economic growth, fossil fuel prices, electricity generation costs, UK population growth and other key variables. The CBDP sets out projected sectoral residual emissions across the UK carbon budget periods. As paragraph 19 of that document explains (with our emphasis added):

These figures represent the projected residual emissions, after proposals and policies set out in this report have taken effect. The figures shown for each carbon budget are total emissions over the five-year period. Alongside this, we have shown the actual emissions over the single year of 2021 to show current performance. ***These are only projections and should not be interpreted as hard sectoral policy targets****. Within our overall carbon budgets, it is vital to retain a degree of flexibility to adjust our plans as circumstances change given the complexity of the net zero system and the inherent uncertainty in any projections. Modelling cannot always consider systemic feedback effects, which are hard to quantify. Other factors such as consumer behaviour, technological innovation and the speed and structure of future economic growth further contribute to intrinsic uncertainties of long-term sectoral emissions projections.*

4.1.4 The Applicants have provided a commentary on the CBDP including a contextualisation of the Proposed Development against table 2 of the CBDP noting the assumptions and limitations to be applied to this contextualisation exercise, in Appendix 6 to the Addendum provided to the Secretary of State contemporaneously with this submission (Document Ref. 6.6).

4.1.5 This CBDP contextualisation submission at Appendix 6 to the Addendum is, for the reasons explained more fully in that submission, provided for contextualisation and

information only and does not provide an assessment of significance; nor does it alter the assessment of significance which may have been previously provided by the Applicants in Chapter 21 of the Environmental Statement **[APP-103**] as updated during Examination in **[REP6-123].**