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. 51 Applicants' Response to Examining Authority's Requests for Information dated 2nd November 2022

The Planning Act 2008

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

Date: November 2022

DOCUMENT HISTORY

Document Ref	9.51		
Revision	1.0		
Author	Ian Campbell (IC)		
Signed	IC	**Date**	07.11.2022
Approved By	Richard Lowe (RL)		
Signed	RL	**Date**	07.11.2022
Document Owner	AECOM		

GLOSSARY

Abbreviation	Description
AOD	Above ordnance datum
AS-	Additional Submissions
BAT	Best Available Techniques
BEIS	The Department for Business, Energy and Industrial Strategy
CCGT	Combined Cycle Gas Turbine
CCUS	Carbon Capture, Utilisation and Storage
CEMP	Construction and Environmental Management Plan
CTMP	Construction Traffic Management Plan
CO_2	Carbon dioxide
CPO	Compulsory Purchase Order
dB	Decibels
DCO	Development Consent Order
dDCO	Draft Development Consent Order
EIA	Environmental Impact Assessment
EPC	Engineering, Procurement and Construction
ES	Environmental Statement
ETS	Emissions Trading Scheme
ExA	Examining Authority
FEED	Front end engineering and design
FRA	Flood Risk Assessment
Ha	Hectares
HDD	Horizontal Directional Drilling
HIA	Hydrogeological Impact Appraisal
HoT	Heads of Terms
kV	Kilovolts
MHWS	Mean High Water Springs
MLWS	Mean Low Water Springs
Mt	Million tonnes

NATS	National Air Traffic Services
NSIP	Nationally Significant Infrastructure Project
NWL	Northumbria Water Lagoon
NZT	The Net Zero Teesside Project
NZT Power	Net Zero Teesside Power Limited
NZNS Storage	Net Zero North Sea Storage Limited
PA 2008	Planning Act 2008
PCC	Power Capture and Compressor Site
PDA-	Procedural Deadline A
PINS	Planning Inspectorate
RCBC	Redcar and Cleveland Borough Council
RR	Relevant Representation
SBC	Stockton Borough Council
SEL	Sound Exposure Level
SPA	Special Protection Areas
SoCG	Statement of Common Ground
SoS	Secretary of State
STDC	South Tees Development Corporation
SuDS	Sustainable urban drainage systems
UXO	Unexploded Ordnance
WFD	Water Framework Directive

CONTENTS

1.0 INTRODUCTION

1.1 Overview

1.1.1 This response to the Examining Authority's Request for Further Information dated 2 November 2022 (Document Ref. 9.51) has been prepared on behalf of Net Zero Teesside Power Limited and Net Zero North Sea Storage Limited (the 'Applicants'). It relates to the application (the 'Application') for a Development Consent Order (a 'DCO'), that has been submitted to the Secretary of State (the 'SoS') for Business, Energy and Industrial Strategy ('BEIS'), under Section 37 of 'The Planning Act 2008' (the 'PA 2008') for the Net Zero Teesside Project (the 'Proposed Development').

1.1.2 The Application was submitted to the SoS on 19 July 2021 and was accepted for Examination on 16 August 2021. Change requests made by the Applicants in respect of the Application were accepted into the Examination by the Examining Authority on 6 May 2022, 6 September 2022 and 4 November 2022.

1.2 Description of the Proposed Development

1.2.1 The Proposed Development will work by capturing CO_2 from a new the gas-fired power station in addition to a cluster of local industries on Teesside and transporting it via a CO_2 transport pipeline to the Endurance saline aquifer under the North Sea. The Proposed Development will initially capture and transport up to 4Mt of CO_2 per annum, although the CO_2 transport pipeline has the capacity to accommodate up to 10Mt of CO_2 per annum thereby allowing for future expansion.

1.2.2 The Proposed Development comprises the following elements:

- **Work Number ('Work No.') 1** – a Combined Cycle Gas Turbine electricity generating station with an electrical output of up to 860 megawatts and post-combustion carbon capture plant (the **'Low Carbon Electricity Generating Station'**);
- **Work No. 2** – a natural gas supply connection and Above Ground Installations ('AGIs') (the **'Gas Connection Corridor'**);
- **Work No. 3** – an electricity grid connection (the **'Electrical Connection'**);
- **Work No. 4** – water supply connections (the **'Water Supply Connection Corridor'**);
- **Work No. 5** – a waste water disposal connection (the **'Water Discharge Connection Corridor'**);
- **Work No. 6** – a CO_2 gathering network (including connections under the tidal River Tees) to collect and transport the captured CO_2 from industrial emitters (the industrial emitters using the gathering network will be responsible for consenting their own carbon capture plant and connections to the gathering network) (the **'CO_2 Gathering Network Corridor'**);
- **Work No. 7** – a high-pressure CO_2 compressor station to receive and compress the captured CO_2 from the Low Carbon Electricity Generating Station and the CO_2

Gathering Network before it is transported offshore (the **'HP Compressor Station'**);

- **Work No. 8** – a dense phase CO_2 export pipeline for the onward transport of the captured and compressed CO_2 to the Endurance saline aquifer under the North Sea (the **'CO_2 Export Pipeline'**);
- **Work No. 9** – temporary construction and laydown areas, including contractor compounds, construction staff welfare and vehicle parking for use during the construction phase of the Proposed Development (the **'Laydown Areas'**); and
- **Work No. 10** – access and highway improvement works (the **'Access and Highway Works'**).

1.2.3 The electricity generating station, its post-combustion carbon capture plant and the CO_2 compressor station will be located on part of the South Tees Development Corporation (STDC) Teesworks area (on part of the former Redcar Steel Works Site). The CO_2 export pipeline will also start in this location before heading offshore. The generating station connections and the CO_2 gathering network will require corridors of land within the administrative areas of both Redcar and Cleveland and Stockton-on-Tees Borough Councils, including crossings beneath the River Tees.

1.3 The Purpose and Structure of this document

1.3.1 The purpose of this document is to provide a response to the two questions posed by the Examining Authority in it Rule 17 letter dated 2 November **[PD-022].**

1.3.2 The document is structured as follows:

- Section 2 contains the response to Question 1.
- Section 3 contains the response to Question 2.

2.0 RESPONSE TO QUESTION 1

[The ExA] note the ongoing discussions with the EA, including on 4 November 2022 **[REP11-017]**. The Examination ends on 10 November 2022.

a) Given the short timescale, it is possible that by the end of the Examination there may be unresolved matters in respect of the water quality modelling outlined in **[REP9-016]**. In this case, would the Applicants still be able to conclude that there would be no adverse effects on the integrity of the European Site?

The Applicants confirm that following meetings with Natural England on 17th October 2022 and the Environment Agency on the 4th of November 2022, there are no significant unresolved matters in respect of the water quality modelling outlined in [REP9-016]. Based on this, the Applicants have concluded that there would be no adverse effects on the integrity of the European Site – see the updated Habitats Regulations Assessment submitted at Deadline 12 [REP12-032] which confirms the position the Applicants had already outlined to the Examining Authority and response to 1b) below.

The Applicants note that Natural England are the statutory consultee for Habitats Regulations Assessment. Natural England has reviewed and agreed with the analysis presented in the HRA report that there will be no adverse effect on the integrity of the Teesmouth & Cleveland Coast SPA/Ramsar site [REP12-032]. This is because a) the forecast dissolved inorganic nitrogen discharges to the Tees Bay will not materially affect the ability of that part of the SPA/Ramsar site to continue to function for SPA/Ramsar birds and b) the Proposed Development will result in no change (or a net reduction) in nitrogen concentrations at Seal Sands mudflats, the part of the SPA/Ramsar site for which there is evidence of existing negative effects of eutrophication of SPA features.

b) In the event that agreement is not reached between the EA and the Applicants in respect of the WFD Assessment by the end of the Examination, would the Applicants still be able to conclude that the Proposed Development would not lead to deterioration of any WFD Water Body?

The WFD assessment [REP11-009] was discussed by The Applicants and the EA at a meeting on 4th November 2022. Whilst some issues remain outstanding, both parties are confident that a potential design solution for the treatment and discharge of waste water to Tees Bay can be developed and implemented for the Proposed Development to achieve WFD compliance in the Tees Coastal and Tees Transitional waterbodies both for current and future status, and that the detail of the solution is adequately secured through draft Requirement 37 of the Draft DCO. Under the discharge of this Requirement, an updated WFD assessment based on the detailed design of the Proposed

Development will be prepared and consulted on with the EA. This position is set out in the Statement of Common Ground with the EA.

Requirement 37 requires that the Applicants commit to the Proposed Development not causing a deterioration of, nor jeopardise attainment of, the overall Water Framework Directive waterbody classifications or individual elements of those overall classifications of the Tees Coastal Waterbody and the Tees Transitional Waterbody; and to contribute to achieving Water Framework Directive protected area objectives relevant to the Tees Coastal Waterbody and the Tees Transitional Waterbody. The form of Requirement 37 is set out in the response to 2c) below.

The EA stated at the meeting that their response to the Rule 17 letter would reflect the outcome of the meeting with the Applicants on the 4th of November. The Statement of Common Ground with the EA (Document Ref. 8.5) has therefore been updated accordingly.

The Applicants consider that the assessment that leads to that conclusion is robust, and based on this, the Applicants are confident that the current outline design and the final design for the Proposed Development would not cause deterioration in any WFD waterbody, particularly as nitrogen-containing water is being diverted from the Tees estuary for use in the Proposed Development and as there has been no nitrogen monitoring undertaken in the Tees Bay to date, as it has not been deemed necessary when setting the WFD status of that waterbody. For the same reasons, the Applicants would invite the ExA to reach the same conclusion. As noted above, whilst some issues remain outstanding with the EA, both the regulator and the Applicants are confident that a potential design solution for the treatment and discharge of waste water to Tees Bay can be developed and implemented for the Proposed Development to achieve WFD compliance.

c) Has the potential for derogation from the WFD been discussed between the parties? If so, do the Applicants want to submit any comments to the ExA in this respect?

The Applicants have discussed the need for a derogation with the Environment Agency at the meeting on 4th November and it was agreed that none was required as, due to the conclusions of the Applicants' modelling and the EA's agreement in principle as noted above, no need for one has been identified. However, much of the work undertaken by the Applicants during Examination remains relevant (i.e. evaluating potential alternatives and identifying potential mitigation measures).

As set out by the Applicants at Issue Specific Hearing 6: Water Environment, Item 3 [REP11-017], further on site treatment of effluent may still be required prior to discharge and this was acknowledged in the WFD assessment submitted at Deadline 11 [REP11-

090]. The Applicants' proposed requirement secures that the Proposed Development will not cause a deterioration of any WFD water bodies, in particular through paragraph 37(3) (and see the updates below). This operates on the same principle as the Applicants described in relation to nutrient nitrogen impact on Seal Sands mudflats, by securing the required 'end result', without prescribing the means by which that result will be achieved.

3.0 RESPONSE TO QUESTION 2

A draft Requirement for an 'Effluent Nutrient Neutrality Safeguarding Scheme' is detailed in **[REP11-017]**. We have the following questions and comments on the wording of this draft Requirement:

a) Please insert the full reference for Appendix B in part 2b).

The full reference to Appendix B is "Net Zero Teesside – Water Quality Assessment Intermediate Design Stage – Alternative Discharge Option, October 2022" forming Appendix B to the Nutrient Nitrogen Briefing Paper [REP9-015]

b) In respect of 3a), how and where is it proposed that a 'net increase in total nitrogen concentrations in water within the Tees Estuary at the Seal Sands mud flats' is going to be defined?

It is proposed that the monitoring location be agreed between the Applicants and Natural England as part of the Effluent Nutrient Nitrogen Safeguarding Scheme. However, the area defined as Seal Sands mudflats is clearly delineated in mapping and aerial photography of the area and this delineation was used for the purposes of the assessment submitted at Deadline 9 [REP9-015]. It is therefore proposed that this defined area be used. The draft Requirement provides that the Scheme would need to be submitted for approval, and therefore it would be necessary for the submitted scheme to satisfy the relevant planning authority as to the suitability of the proposed location. Its decision on that and other aspects of the Scheme would be informed by the views of Natural England and the Environment Agency in response to the prescribed consultation.

c) How is it anticipated that 3a) is monitored and enforced against? Is this something that should be secured in more detail via the DCO?

The purpose of the Effluent Nutrient Nitrogen Safeguarding Scheme is to provide the Secretary of State with a method of securing that there will not be an impact on integrity of the European site (noting the conclusions of the modelling carried out already, [REP9-015]). The requirement provides for approval of the relevant planning authority of the Applicants' proposed approach (following detailed design) and which must (in effect) achieve nutrient neutrality on the Seal Sands mudflats. It also provides a mechanism for consulting Natural England on the Applicants' proposed approach, so that it can advise the relevant planning authority as required.

The Scheme to be submitted for approval will need to set out the effluent emission characteristics, discharge conditions and release concentrations from the outfall. If the

Scheme as submitted does not contain adequate or acceptable details of those matters, it would not be approved. The obligation to consult both Natural England and the Environment Agency provides further comfort that the submitted Scheme will be subject to independent expert scrutiny before it is approved.

The agreed approach will then be secured through the environmental permit for the operation of the Proposed Development.

The Environmental Permit will include effluent discharge limits through the outfall and specify monitoring requirements that must be fulfilled. Effluent monitoring will therefore be undertaken by the Applicants under the permit and the data will be provided to the Environment Agency to demonstrate ongoing compliance. This data will be reported annually and in the event of any breach of permitted limits. The Applicants now propose that the Requirement 37 is updated to secure that monitoring data provided pursuant to the permit is also provided to Natural England. The updated form of Requirement 37 (showing track changes from that issued at Deadline 12 in the Draft DCO [REP12-003] is provided below.

Effluent nutrient nitrogen safeguarding scheme

37.—(1) No part of the authorised development other than the permitted preliminary works may commence until an effluent nutrient nitrogen safeguarding scheme has been submitted to and, after consultation with Natural England and the Environment Agency, approved by the relevant planning authority.

(2) The effluent nutrient nitrogen safeguarding scheme submitted pursuant to paragraph (1) must include the following—

(a) details of the selected design and discharge location of the infrastructure that will treat and discharge effluent containing nitrogen produced by the operation of the authorised development;

(b) discharge modelling of the design selected pursuant to sub-paragraph (a) and which (unless otherwise agreed with the relevant planning authority after consultation with Natural England and the Environment Agency) is based on the modelling methodology in Appendix B of the nutrient nitrogen briefing paper; ~~and~~

(c) information on the wastewater discharge monitoring methods, frequency and locations that will be undertaken pursuant to any environmental permits required for the authorised development; and

(d) provision for monitoring information which is provided to the Environment Agency pursuant to the environmental permit to also be provided to the relevant planning authority and Natural England.

(3) The effluent nutrient nitrogen safeguarding scheme submitted pursuant to paragraph (1) must demonstrate that nitrogen in effluent from the operation of the authorised development is controlled and discharged in order that the nitrogen in effluent will—

(a) not cause a net increase in total nitrogen concentrations in water within the Tees Estuary at the Seal Sands mud flats; ~~and~~

(b) not cause a deterioration of, nor jeopardise attainment of, the overall Water Framework Directive waterbody classifications or individual elements of those overall classifications of the Tees Coastal Waterbody and the Tees Transitional Waterbody; and

(c) contribute to achieving Water Framework Directive protected area objectives relevant to the Tees Coastal Waterbody and the Tees Transitional Waterbody. ~~impact on the Water Framework Directive status of the Tees Coastal Water, Tees Transitional Waterbody or Tees Estuary.~~

(4) The undertaker must implement the effluent nutrient nitrogen safeguarding scheme as approved, unless otherwise agreed with the relevant planning authority following consultation with Natural England and the Environment Agency.

d) Should the Scheme include provision for regular review linked to monitoring and future changes in water quality?

The purpose of the Scheme is to demonstrate that the design and operational measures to be employed will meet the nutrient neutrality and WFD compliance requirements. As per response c) the Applicants will voluntarily share effluent monitoring data with Natural England. The monitoring data to be provided is that which will regulate the operational process, including the discharge to Tees Bay under the permit, and which includes a mechanism for tightening emission limits in accordance with the use of Best Available Techniques should this be required to meet changing legislative requirements.

As and when water quality improves in the River Tees, this will correspondingly reduce the nitrogen levels in the raw water abstracted from the river for the Proposed Development and hence in the treated effluent discharged from the Proposed Development via the outfall.

e) Part 3b) states that it should be demonstrated that effluent would not 'impact on the WFD status of the Tees Coastal Water, Tees Transitional Waterbody or Tees Estuary'. How do the Applicants envisage that this would be measured and enforced against? Is this something that should be secured in more detail via the DCO?

As per response c), the Effluent Nutrient Nitrogen Safeguarding Scheme would be used to confirm that the proposed approach demonstrates nutrient neutrality and WFD compliance. Ongoing regulation of discharges would be undertaken by the Environment Agency through the environmental permit and demonstrated through monitoring required under the permit. The Applicants will be obliged to notify the Environment Agency of any departures from permitted conditions. This therefore would be the mechanism used to control operation of the Proposed Development and demonstrate ongoing compliance; further controls within the DCO are not considered necessary.

The Applicants have set out their position on overlapping controls and why that is unnecessary and should be avoided in relation to other issues raised during the examination (such as carbon capture rates), and the same principles apply. The Applicants' position on overlapping controls is set out in the Written Summary of Oral Submissions for Issue Specific Hearing 3 (Item 4) [REP5-025] and the other submissions referred to there.