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Environment Agency

The Planning Inspectorate
Temple Quay House Temple Quay
Bristol
Avon
BS1 6PN

Our ref: NA/2022/115883/03-L01
Your ref: Net Zero Teesside

Date: 2 August 2022

Dear Sir/Madam

EN010103: THE NET ZERO TEESSIDE NATIONALLY SIGNIFICANT INFRASTRUCTURE PROJECT. DEADLINE 4 SUBMISSIONS. LAND IN THE VICINITY OF THE SSI STEEL WORKS SITE, REDCAR, TEESSIDE, TS10 5QW

Please find enclose our representations for Deadline 4 for this Development Consent Order (DCO) on behalf of the Environment Agency (EA). Also enclosed is the EA's response to the action points raised at Issue Specific Hearing 3 relevant to the EA.

Please do not hesitate to contact if you have any questions or require further clarification.

Yours faithfully

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Environment Agency Summary of Representations

Deadline 4 Submission - DCO 2.1 - Draft DCO (Comparison with June 2022) - July 2022 (D4) [REP4-003]

Requirements 13, 23 and 25

We request that Requirements 13, 23 and 25 are updated to reflect the outputs of the ground investigations which are currently being undertaken by the Applicant. We request that Requirement 13 is updated to include reference to a desk study, risk assessments, long term monitoring plan and a plan to decommission and maintain boreholes and validatory records.

Requirement 16

We request that Requirement 16 is updated to include reference to 'A groundwater monitoring plan that comprises of level and chemical monitoring of contaminants of concern to inform the construction design process. Further ground investigation should be undertaken to understand the pollution risks and ground water monitoring plan'.

Requirement 31

There appears to be no requirement to construct Work No. 6, the carbon dioxide gathering network. Therefore, we are concerned the DCO will allow the construction of a new power station without the additional regional benefit of the wider CO_2 gathering network. Can the Applicant confirm what mechanisms are in place within the DCO to ensure that the CO_2 gathering network will be built? Or could this requirement be amended to state that work on Work No. 6 will start within a set date, possibly 1 year, of the start of Work No.1?

Deadline 4 Submission - DCO 9.17 - Hydrogeological Impact Assessment July 2022 (D4) [REP4-027]

The Hydrogeological Impact Assessment (HIA) summarises and interprets the Ground Investigation data well. However, additional information is required to inform the HIA. Following the completion of further ground investigation work, the HIA should be updated to include a baseline condition before, and post remediation and post construction. The HIA should be updated with the following information:

- Chemical 'fingerprinting' the slag deposits to identify all Contaminants of Concern (CoCs) by undertaking GCMS and deterministic analysis of positive detections.
- Include groundwater level (GWL) monitoring in the further ground investigation (GI) works and in the long-term groundwater monitoring scheme to identify a tidal influence on the groundwater level in the superficial tidal flat deposits and slag – to help improve the current understanding of hydraulic gradients and flow paths.
- Modifications to the Baseline CSM to:

- Show the water table in made ground/ tidal flats and bedrock (as appropriate).
- Refer to the Sections in the GI Factual Report, namely A-A', B-B' and C-C' in GI Drawings 60657467-ACM-GIR-DRG-009, 60657467-ACM-GIR-DRG-010 and 60657467-ACM-GIR-DRG-011. This information was missing from the HIA published on the planning inspectorate's website.
- Update baseline with additional GI data due later this year.
- Provide an additional post-remediation and post-construction CSM which refers to the same cross sections as those for the baseline. It should take into account the monitoring boreholes, foundations, base of excavation, remediation earthworks and engineered infill works, to show impact of remedial and construction works on the hydrogeology CSM.

The EA supports the proposed additional GI in the north west corner and central part of the site where access has been restricted/ constrained by ecological grounds and existing structures. The EA supports the Applicants statements:

- That no dewatering of any groundwater will occur across the application site, except for the launch and landing points of the pipe across the Tees and that at these sites;
    1. Any contaminated fill and or polluted groundwater is removed off site and
    2. Further GI will be undertaken at these locations prior to commencement of work.

Document Reference: 6.4.5 es Vol III Appendix 5A – Framework CEMP [APP-246

We request that the CEMP is updated to include the following measures relating to groundwater and contaminated land:

- A groundwater monitoring system/ network should be installed, with level and chemical monitoring of contaminants of concern (CoCs) and frequencies, to be agreed with EA following all proposed ground investigation. Monitoring should be started prior to the remediation and construction works commencing.
- Further detailed ground investigation will be required to understand the pollution risks, in particular to groundwater and surface water(s) at the launch and landing point sites and to quantify the volume and quality of groundwater needing to be dewatered and disposed of.
- Foundations/ piling design will need to be updated following the further ground investigation work to be undertaken later this year as the results may not be available until after the examination period. It should be highlighted how the adoption of the proposed foundations / pile design mitigates the effects on the environment and surrounding area.

EN010103-001910-NZT DCO 9.15 - Applicants' Responses to Deadline 3 Submissions July 2022 (D4) [REP4-025]

With respect to section 13.3.1, we seek clarity regarding whether the pipeline (during the ongoing maintenance of the CO_2 export pipeline) will be pigged from the oil and gas reservoir towards the shore, resulting in NORM waste arriving at the proposed installation for appropriate disposal off site?

Hearing Action Points arising from Issue Specific Hearing 3, on the draft Development Consent Order held in person and virtually on 12 July 2022 [EV6-010]

Action 15

The Applicant will need to apply for a UK Emissions Trading Permit and Monitoring, Reporting & Verification requirements are addressed in the regulations and guidance for this. In addition, the Environmental Permit will require the capture plant to be built to achieve a specified capture rate (our current BAT position is a capture rate of CO2 of at least 95%). We will utilise both the Environmental Permit and the UK Emissions Trading Scheme Monitoring, Reporting & Verification to verify performance.

Environment Agency Written Representations

Deadline 4 Submission - DCO 2.1 - Draft DCO (Comparison with June 2022) - July 2022 (D4) [REP4-003]

Requirement 13 (contaminated land and groundwater)

As part of our meeting with the Applicant on the 20 July 2022, we discussed Requirement 13 with respect to land contamination and groundwater. We requested that Requirement 13 is updated to reflect the following amendments (amendments are in bold);

(2) The scheme submitted and approved under sub-paragraph (1) must be consistent with the principles set out in chapter 10 of the environmental statement and any construction environmental management plan submitted under requirement 16(1) and include—

(a) a preliminary risk assessment **(desk study) and risk assessment** that—

(i) is supported by a site investigation scheme**(s);** and

(ii) identifies the extent of any contamination;

(b) an appraisal of remediation options and a proposal of the preferred option where the risk assessment indicates that remediation is required in order for the relevant area of land not to meet the definition of "contaminated land" under Part 2A (contaminated land) of the Environmental Protection Act 1990(a);

(c) where the risk assessment carried out under sub-paragraph (a) identifies the need for remediation, a remediation strategy which must include— (i) the preferred option for remediation to ensure that the site will not meet the definition of "contaminated land" under Part 2A (contaminated land) of the Environmental Protection Act 1990; and (ii) a verification plan, providing details of the data to be collected in order to demonstrate that the works set out in the remediation scheme submitted for approval under this sub-paragraph are complete;

(d) a materials management plan that is in accordance with the prevailing code of practice relevant to such plans, which sets out long-term measures with respect to any contaminants remaining on the site during and after the authorised development is carried out;

(e) details of how any unexpected contamination will be dealt with;

(f) an updated hydrogeological impact assessment that is informed by the ground investigation reports and groundwater monitoring;

(g) a long term monitoring and maintenance plan in respect of contamination, including details of (but not limited to) a time table of monitoring and submission of monitoring reports;

(h) monitoring reports as specified in the approved monitoring and maintenance plan, including details of any necessary contingency action and / or mitigation measures arising from the monitoring;

(i) a plan for managing and /or decommissioning any boreholes installed for the investigation of soils, groundwater or geotechnical purposes. The plan shall provide details of how redundant boreholes are to be decommissioned and how any boreholes that need to be retained, post-development, for monitoring purposes will be secured, protected and inspected. Appropriate validation records within a report shall be submitted to demonstrate that all boreholes no longer required have been decommissioned in accordance with best practice.

Requirement 16 (construction environmental management plan)
It is noted that the Applicant is currently undertaking further ground investigation work which is due to be completed post examination. Therefore, we would welcome revisions to Requirement 16 to accommodate the findings of the ground investigation work and the groundwater monitoring. Requirement 16 should be updated to include reference to 'A groundwater monitoring plan that comprises of level and chemical monitoring of contaminants of concern to inform the construction design process. Further ground investigation should be undertaken to understand the pollution risks and ground water monitoring plan'.

Requirements 23 (piling and penetrate foundation designs) and 25 (restoration of land used temporarily for construction)
As the outputs of the ground investigation work will not be available during the examination and may have implications on these requirements, we recommend that these requirements are updated to accommodate the findings of the ground investigation work.

Requirement 31 (carbon dioxide capture transfer and storage)
There appears to be no requirement to construct Work No. 6, the carbon dioxide gathering network. Therefore, we are concerned the DCO will allow the construction of a new power station without the additional regional benefit of the wider CO_2 gathering network. Can the applicant confirm what mechanisms are in place within the DCO to ensure that the CO_2 gathering network will be built? Or could this requirement be amended to state that work on Work No.6 will start within a set date, possibly 1 year, of the start of Work No.1?

Deadline 4 Submission - DCO 9.17 - Hydrogeological Impact Assessment July 2022 (D4) [REP4-027]

The Hydrogeological Impact Assessment (HIA) summarises and interprets the Ground Investigation data well. However, additional information is required to inform the HIA. Following the completion of further ground investigation work, the HIA should be updated to include baseline conditions before, and post remediation and post construction. The EA's review of the HIA is outlined below:

There is shallow groundwater which sits in made ground (slag), tidal flat deposits (sand) and in the weathered, more permeable horizons in the bedrock. Horizontal permeability will be greater than vertical. Whilst there are layers of impermeable deposits they can be thin and laterally impersistent (not always present) across the site. Thus, in terms risk of pollution impacts from developing the site, it is the groundwater in the superficial deposits which are at greatest risk from leaching pollutants from the slag deposits and mobilisation of any reworked material. The pollutants identified in the groundwater are as follows:

1. Ammoniacal nitrogen exceeded screening levels and increasing trend over the 3 monitoring rounds – not known why
2. Total Petroleum Hydrocarbons (TPHs)
3. Polyaromatic Hydrocarbons (PAHs)
4. High pH values 10-12.5
5. Natural groundwater in bedrock is of poor quality
6. Slightly elevated cyanide across the site
7. Salinity parameters e.g., Sulphate/ conductivity wide ranging, high and widespread. Could be from multiple/ numerous / mix of sources.

The HIA and conceptual site model (CSM), along with the supporting detailed cross sections in appendix A (and ground investigation factual report), will help identify where the groundwater monitoring points should be located/ retained in the tidal flat deposits (sand), and made ground (predominantly slag) to assess any pollution impact of the remedial and construction works.

The HIA should be updated with the following information:

- Chemical 'fingerprinting' the slag deposits to identify all Contaminants of Concern (CoCs) by undertaking GCMS and deterministic analysis of positive detections.
- Include groundwater level (GWL) monitoring in the further ground investigation (GI) works, and in the long-term groundwater monitoring scheme to identify a tidal influence on the groundwater level in the superficial tidal flat deposits and slag. This will help improve the current understanding of hydraulic gradients and flow paths.
- Modifications to the Baseline CSM to:
- Show the water table in made ground/ tidal flats and bedrock (as appropriate).
- Refer to the Sections in the GI Factual Report, namely A-A', B-B' and C-C'

in GI Drawings 60657467-ACM-GIR-DRG-009, 60657467-ACM-GIR-DRG-010 and 60657467-ACM-GIR-DRG-011. This information was missing from the HIA published on the planning inspectorate's website.

- Update baseline with additional GI data due later this year.
- Provide an additional post-remediation and post-construction CSM which refers to the same cross sections as those for the baseline. It should take into account the monitoring boreholes, foundations, base of excavation, remediation earthworks and engineered infill works, to show impact of remedial and construction works on the hydrogeology CSM.

The CSM/ HIA justifies what groundwater requires protecting and why. The groundwater in the tidal flat deposits (sand) (TFD(S)) needs protecting. The TFD(S) has not been delineated formally as a Water Framework Directive (WFD) groundwater body by the EA because it is not large enough and widely utilised. Thus, pollution impacts should not be considered as deterioration in WFD status.

The groundwater in the TFD(S) is in hydraulic continuity with the intertidal zone of the North Sea and the Tees estuary. Even though there are no groundwater-dependent designations (receptors) dependent on this groundwater, the groundwater in the TFD(S)s is a pathway for pollutants to enter the estuary, littoral zone, coastal and marine water environments and impact the ecology therein. Pollution of this groundwater would be where observed concentrations of pollutants are above baseline concentrations. This would need to be agreed. However, suggested approaches could be: A) above max concentrations B) 1 or 2 standard deviations above or C) a rising trend. Thus, the EA supports the installation of a groundwater monitoring network and any further mitigation if necessary.

The EA also supports the proposed additional GI in the north west corner and central part of the site where access has been restricted/ constrained by ecological grounds and existing structures.

The EA acknowledges the statement that all construction works will be above the groundwater level. However, it should be noted that this could be tidal, so the groundwater level adopted should be the max groundwater level (GWL), based on the highest tides. Therefore, on this understanding, the EA supports the applicants statements:

- That no dewatering of any groundwater will occur across the application site, except for the launch and landing points of the pipe across the Tees and that at these sites;
    1. Any contaminated fill and or polluted groundwater is removed off site and
    2. Further GI will be undertaken at these locations prior to commencement of work.

Note: We have requested that Requirement 13 is updated to include reference to an updated HIA.

Document Reference: 6.4.5 es Vol III Appendix 5A – Framework CEMP [APP-246]
With respect to groundwater and due the ongoing ground investigation work, the CEMP should be updated to include the following measures:

- A groundwater monitoring system/ network should be installed, with level and chemical monitoring of CoCs and frequencies, to be agreed with the EA following all proposed ground investigation. Monitoring should be started prior to the remediation and construction works commencing.
- Further detailed ground investigation will be required to understand the pollution risks, in particular to groundwater and surface water(s) at the launch and landing point sites and to quantify the volume and quality of groundwater needing to be dewatered and disposed of.
- Foundations/ piling design will need to be updated following the further ground investigation work to be undertaken later this year as the results may not be available until after the examination period. It should be highlighted how the adoption of the proposed foundations / pile design mitigates the effects on the environment and surrounding area.

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