

Table of Contents

18.	Cultural Heritage	18-1
18.1	Introduction.....	18-1
18.2	Legislation and Planning Policy Context.....	18-1
18.3	Assessment Methodology and Significance Criteria.....	18-6
18.4	Baseline Conditions.....	18-11
18.5	Development Design and Impact Avoidance	18-11
18.6	Likely Impacts and Effects	18-12
18.7	Mitigation and Enhancement Measures	18-19
18.8	Limitations or Difficulties.....	18-20
18.9	Residual Effects and Conclusions	18-20
18.10	References	18-22

Tables

Table 18-1:	Summary of Principal Consultation Activities.....	18-7
Table 18-2:	Factors for Assessing the Value of Heritage Assets.....	18-9
Table 18-3:	Factors for Assessing the Magnitude of Impact.....	18-10
Table 18-4:	Factors for Assessing the Significance of Effect.....	18-11
Table 18-5:	HER Assets Within the CO ₂ Gathering Network, Natural Gas Connection Corridor and Electrical Connection Corridor.....	18-15
Table 18-6:	Summary of Significant Effects.....	18-21

18. Cultural Heritage

18.1 Introduction

- 18.1.1 This chapter of the Preliminary Environmental Information (PEI) Report describes the existing environment with regard to the cultural heritage resource, which comprises archaeology, built heritage and historic landscape, and assesses the potential impacts of the Proposed Development during the construction, operation and decommissioning phases. Where the potential for significant effects is identified, mitigation measures and residual impacts are presented.
- 18.1.2 Detailed baseline information is provided in Appendix 18A: Cultural Heritage Baseline (PEI Report, Volume III) along with Figure 18-1: Location of Designated Heritage Assets (PEI Report, Volume II) and Figure 18-2: Location of Non-designated Heritage Assets (PEI Report, Volume II).

18.2 Legislation and Planning Policy Context

The Ancient Monuments and Archaeological Areas Act 1979

- 18.2.1 The Ancient Monuments and Archaeological Areas Act (1979) imposes a requirement for Scheduled Monument Consent for any works of demolition, repair, and alteration that might affect a designated scheduled monument.

The Planning (Listed Buildings and Conservation Areas) Act 1990

- 18.2.2 The Planning (Listed Buildings and conservation areas) Act 1990 (the Act) sets out the principal statutory provisions concerning the listing of buildings and designation of conservation areas, and provisions that must be considered in the determination of any application affecting listed buildings or conservation areas.
- 18.2.3 Section 66 of the Act states that in considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority, or the Secretary of State, shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses. By virtue of Section 1(5) of the Act a listed building includes any object or structure within its curtilage.
- 18.2.4 Section 72 of the Act establishes a general duty on a local planning authority or the Secretary of State with respect to any buildings or other land in a conservation area to pay special attention to the desirability of preserving or enhancing the character or appearance of a conservation area.



National Planning Policy Framework

- 18.2.5 The National Planning Policy Framework (NPPF) (MHCLG, 2019) sets out the Government's planning policies for England and how these should be applied to contribute to the achievement of sustainable development. While the EIA methodology forms part of a separate regime, national planning policy and guidance is relevant to the consideration of the Proposed Development.
- 18.2.6 Section 16 of the NPPF deals specifically with the historic environment. Where changes are proposed, the NPPF sets out a clear framework to ensure that heritage assets are conserved, and where appropriate enhanced, in a manner that is consistent with their significance.
- 18.2.7 The NPPF sets out the importance of being able to assess the significance of heritage assets that may be affected by a development. Significance is defined in Annex 2 as being the, "*value of a heritage asset to this and future generations because of its heritage interest. That interest may be archaeological, architectural, artistic or historic*". Significance is not only derived from an asset's physical presence, but also from its setting. The setting of a heritage asset is defined in Annex 2 as, "*the surroundings in which a heritage asset is experienced. Its extent is not fixed and may change as the asset and its surroundings evolve*".
- 18.2.8 Paragraph 189 of the NPPF states that in determining applications, local planning authorities should require an applicant to describe the significance of any heritage assets affected, including any contribution made by their setting. The level of detail should be proportionate to the assets' importance and no more than is sufficient to understand the potential impact of the proposal on their significance. Similarly, there is a requirement on local planning authorities, having assessed the particular significance of any heritage asset that may be affected by a proposal to take this into account when considering the impact of a proposal on a heritage asset (paragraph 190).
- 18.2.9 In determining planning applications, local planning authorities should take account of the following points:
- the desirability of sustaining and enhancing the significance of heritage assets and putting them to viable uses consistent with their conservation;
 - the positive contribution that conservation of heritage assets can make to sustainable communities including their economic vitality;
 - the desirability of new development making a positive contribution to local character and distinctiveness (paragraph 192); and
 - opportunities to draw on the contribution made by the historic environment to the character of a place.
- 18.2.10 Paragraphs 193 to 197 of the NPPF introduce the concept that heritage assets can be harmed or lost through alteration, destruction or development within their setting. This harm ranges from less than substantial through to



substantial. With regard to designated assets, paragraph 193 states that great weight should be placed on their conservation, irrespective of whether any potential harm is considered to be substantial or less than substantial. The paragraph goes further to say that the more important the asset, the greater the weight should be on its conservation. In paragraph 194, a distinction is made in respect of those assets of the highest significance (e.g. scheduled monuments¹, Grade I and grade II* listed buildings) where substantial harm to or loss should be wholly exceptional.

18.2.11 In instances where development would cause substantial harm to or total loss of significance of a designated asset, consent should be refused unless it can be demonstrated that the development is necessary to achieve substantial public benefits that outweigh that harm or loss (paragraph 195). In instances where development would cause less than substantial harm to the significance of a designated asset, the harm should be weighed against the public benefits of the proposal to provide a balanced judgment (paragraph 196).

18.2.12 With regard to non-designated assets, paragraph 197 states that the effect of the application on the significance of the asset should be taken into account in determining the application. A balanced judgment will be required having regard to the scale of any harm or loss and the significance of the heritage asset.

National Policy Statement (NPS) for Energy EN-1

18.2.13 The NPS EN-1 (DECC, 2011) sets out the government's overarching policy statement for energy. With regard to the Historic Environment the NPS provides a series of requirements and recommendations for the appropriate level of assessment of energy proposals that have the potential to impact upon the historic environment, and decision-making policies. These accord with the policies outlined in the NPPF.

Local Planning Policy

18.2.14 The Redcar and Cleveland (2018) Local Plan was adopted May 2018. Policies relating to cultural heritage and that are relevant to this assessment include HE 1 Conservation Areas, HE 2 Heritage Assets and HE 3 Archaeological Sites and Monuments.

18.2.15 Policy HE 1 states that development within or affecting the setting of a conservation area will only be permitted where it preserves or enhances the character or appearance of the area.

18.2.16 Policy HE 2 deals with designated and non-designated heritage assets and states that development will only be permitted if it preserves or enhances the significance of a designated asset, including its setting. For non-designated assets the policy states that those assets that are demonstrably of equivalent significance to scheduled monuments would be considered subject to the policies for designated assets. Furthermore, development that

¹ Footnote 63 of the NPPF extends this classification to those heritage assets which are demonstrably of equivalent significance to Scheduled Monuments, but which are currently non-designated.



would result in substantial harm or total loss of a non-designated asset or its setting would require the applicant to demonstrate that the benefits outweighed the harm.

- 18.2.17 Policy HE 3 aims to make sure that important archaeological sites, whether scheduled or not, are protected from inappropriate development. The policy states that development that would adversely affect designated sites and monuments, including their setting, will only be approved in exceptional circumstances.
- 18.2.18 The Stockton-on-Tees (2019) Local Plan was adopted January 2019. One policy relating to cultural heritage is relevant to this assessment; HE2 Conserving and Enhancing Stockton's Heritage Assets.
- 18.2.19 Policy HE2 outlines that the council will support applications that positively respond to and enhance heritage assets. It states that where a proposal will lead to harm to designated or non-designated heritage assets, including through change to their settings, the proposal will be considered in line with Policy SD8 Sustainable Design Principles, other Development Plan policies, and the NPPF. Loss of a heritage asset in whole or in part will only be permitted if the council are satisfied that new development will proceed after the loss. For non-designated assets the policy states that those assets that are demonstrably of equivalent significance to scheduled monuments would be considered subject to the policies for designated assets.

Planning Practice Guidance

- 18.2.20 The Planning Practice Guidance (PPG) (MHCLG, last updated 01 10 2019) provides further advice and expands on the guidance and policy outlined in the NPPF.
- 18.2.21 Significance of heritage assets and its importance in decision-making is explored in Paragraph 007 of the PPG on Historic Environment which states that heritage assets may be affected by direct physical change or by change in their setting. Being able to properly assess the nature, extent and importance of the significance of a heritage asset, and the contribution of its setting, is very important to understanding the potential impact and acceptability of development proposals (ID 18a-007-20190723 Last updated 23 07 19).
- 18.2.22 The setting of the heritage asset is also of importance and a thorough assessment of the impact on setting needs to take into account, and be proportionate to, the significance of the heritage asset under consideration and the degree to which the proposed changes enhance or detract from that significance and the ability to appreciate it. The extent and importance of setting is often expressed by reference to visual considerations. Although views of or from an asset will play an important part, the way in which an asset is experienced in its setting is also influenced by other environmental factors such as noise, dust and vibration from other land uses in the vicinity, and by our understanding of the historic relationship between places.
- 18.2.23 Paragraph 013 of the PPG recognises that the contribution that setting makes to the significance of the heritage asset does not depend on there



being public rights to access it or the ability to experience that setting. When assessing any application for development which may affect the setting of a heritage asset, local planning authorities may need to consider the implications of cumulative change (ID 18a-013-20190723 Last updated 23 07 2019).

18.2.24 The PPG discusses how to assess harm to heritage assets, noting that there may be no harm, less than substantial harm, or substantial harm. Paragraph 18 states that within each category of harm the extent of harm may vary, and this should be clearly articulated. Ultimately, whether a proposal causes substantial harm will be a judgment for the decision-maker. However, the PPG acknowledges that substantial harm is a high test so may not arise in many cases. A key consideration when assessing whether there is an adverse impact on a listed building is whether the adverse impact seriously affects a key element of its special architectural or historic interest. It is the degree of harm to the asset's significance rather than the scale of the development that is to be assessed (Paragraph: 018 Reference ID: 18a-018-20190723 Last updated 23.07.2019).

Historic England Guidance

18.2.25 Historic England have published a series of Good Practice Advice (GPA) of which those of most relevance to this appraisal are GPA2 - Managing Significance in Decision-Taking in the Historic Environment (Historic England, 2015) and GPA3 - The Setting of Heritage Assets (Historic England, 2017).

18.2.26 GPA2 emphasises the importance of having a knowledge and understanding of the significance of heritage assets likely to be affected by the development and that the *“first step for all applicants is to understand the significance of any affected heritage asset and, if relevant the contribution of its setting to its significance”* (paragraph 4). Early knowledge of this information is also useful to a local planning authority in pre-application engagement with an applicant and ultimately in decision-making (paragraph 7).

18.2.27 GPA3 provides advice on the setting of heritage assets (setting). Setting is as defined in the NPPF and comprises the surroundings in which a heritage asset is experienced. Elements of a setting can make positive or negative contributions to the significance of an asset and affect the ways in which it is experienced. Historic England state that setting is not fixed and what comprises an asset's setting may change as the asset and its surroundings evolve. Setting can be extensive and, particularly in urban areas or extensive landscapes, can overlap with other assets. The contribution of setting to the significance of an asset is often expressed by reference to views and the GPA in paragraph 11 identifies those views that contribute to understanding the significance of assets, such as views that were designed or intended.

Chartered Institute for Archaeologists

18.2.28 The baseline study (Appendix 18A: Cultural Heritage Baseline, PEI Report, Volume III) has been undertaken in accordance with guidance published by



the Chartered Institute for Archaeologists (CIfA), specifically the standard and guidance for historic environment desk-based assessment (CIfA, 2017).

18.3 Assessment Methodology and Significance Criteria

18.3.1 This section presents the following:

- identification of the information sources that have been consulted throughout preparation this chapter;
- the methodology behind the baseline assessment including the definition of an appropriate study area; and
- the methodology and terminology used in the assessment of effects.

Use of the Rochdale Envelope

18.3.2 The construction details of some components of the Proposed Development have not yet been established and therefore a Rochdale Envelope approach has been applied for the PEI Report.

Construction Scenario - Worst Case

18.3.3 The worst-case scenario for cultural heritage assets considers the construction methodologies that would result in the greatest magnitude of physical change or change to an asset's setting, and assumes that construction would continue for the maximum duration construction period as set out in Chapter 5: Construction Programme and Management (PEI Report, Volume I).

18.3.4 There are various components of the Proposed Development that are to be housed within the PCC. These include the generating station, capture plant, CO₂ compressor station and chemical storage facility. The precise location of these components within the PCC is not yet known, therefore it is assumed that there is potential for impacts to any heritage assets that are located within the proposed Site boundary for the PCC and water connections. The following construction methods form the basis of the Rochdale Envelope for cultural heritage:

- the construction of one CCGT unit and the Connections, followed by the immediate and sequential build of the remaining two units would comprise the worst-case peak construction period, and the potential for the greatest magnitude of change to heritage assets; and
- as a worst-case assumption, open trench construction rather than using trenchless technologies would be adopted to install the CO₂ Export Pipeline and the Water Discharge Corridor through the dune complex and would comprise the worst-case scenario for coastal and intertidal heritage assets located down to mean low water (and beyond for the Discharge Corridor).

Operational Scenario - Worst Case

18.3.5 The worst-case scenario during operation of the Proposed Development is measured by the level of change to the setting of heritage assets. The



greatest magnitude of change to the setting of heritage assets is represented by the concurrent operation of all three CCGT units.

Decommissioning Scenario - Worst Case

18.3.6 There will be no additional physical impacts to heritage assets during the decommissioning of the Proposed Development as all impacts would have occurred as a result of construction. It is assumed that pipeline structures will be left *in situ* and if they were to be removed there would be no additional impact beyond the maximum width corridor used during construction. Therefore, the worst-case decommissioning scenario is measured only by the level of change to the setting of assets, which is represented by temporary activities associated with the decommissioning of the Proposed Development.

Consultation

18.3.7 Table 18-1 presents a summary of consultation carried out to date specific to cultural heritage.

Table 18-1: Summary of Principal Consultation Activities

Consultee	Date (method)	Consultee comment	Action
Secretary of State	Scoping opinion	Receptors should be identified relative to entire proposed Site boundary, not just the PCC. Potential effects upon conservation areas, including Kirkleatham, Coatham, Wilton, and Yearby, should be considered. Assessment should address potential for changes to setting of Eston Nab scheduled monument. ES should consider impacts to marine heritage. ES should set out proposals for suitable mitigation. ES should use updated Historic England (HE) guidance on setting. Evaluation strategies should be considered for areas of new land take to ensure a robust assessment of likely effects. The ES should consider impacts from decommissioning.	Baseline has included assets within Study Area of the entire proposed Site boundary i.e. connection corridors not just the PCC. Settings of conservation areas and scheduled monuments within Study Area have been assessed or scoped out following walkover survey. Impact to marine receptors are assessed in Chapter 19: Marine Heritage (PEI Report, Volume I). Updated HE guidance has been used for the baseline report (Appendix 18A: Cultural Heritage Baseline, PEI Volume III) and the PEI Report. Potential for evaluation was assessed during baseline study (refer to Appendix 18A). Decommissioning impacts are considered in the PEI Report and will be addressed fully in the ES.
Tees Archaeology	14.01.20 Email from AECOM setting out scope of baseline assessment and identifying principal issues	Responded with reference to baseline information (Tees Archaeology Desk Based Assessment) relevant to Study Area.	AECOM has included the baseline information within the baseline study.



Data Sources

18.3.8 The following sources of information that define the Site have been reviewed and form the basis of the assessment of likely significant effects on Cultural Heritage:

- Tees Archaeology Historic Environment Record (HER) for information relating to non-designated heritage assets and fieldwork events;
- Redcar and Cleveland HER for information relating to non-designated heritage assets and fieldwork events;
- National Heritage List for England (NHLE) for designated heritage assets datasets;
- Ordnance Survey historic mapping data;
- Teesside archives in Middlesbrough for further historic mapping and documentary sources;
- National Collection of Aerial Photographs for aerial photographs;
- the results of previous archaeological assessment and investigations;
- the results of previous geotechnical investigations;
- local authority data including conservation area appraisals and buildings on the local list; and
- online sources, including British Geological Survey <https://www.bgs.ac.uk/> for geotechnical borehole and geological data.

18.3.9 The designated heritage assets relevant to this assessment are identified by their National Heritage List for England (NHLE) reference number. The non-designated heritage assets are identified with their Historic Environment Record (HER) reference number.

Study Areas

18.3.10 For designated assets (World Heritage Sites, scheduled monuments, listed buildings, conservation areas, registered parks and gardens, registered battlefields), a 5 km Study Area around the Site has been applied. The Study Area ensures that designated heritage assets are identified to a sufficient distance to anticipate or identify any potential impacts arising from changes to their setting.

18.3.11 For non-designated assets (archaeological sites, findspots, locally listed buildings), a search of 1 km was used to obtain data from the HER and the Historic England Archives. This Study Area was deemed appropriate to provide the archaeological context of the PCC and its surroundings in order to predict the likely nature of archaeological remains that may exist within the Site. The reference numbers are stated in the text (Appendix 18A: Cultural Heritage Baseline, PEI Report, Volume III) and shown on Figures 18-1: Location of designated heritage assets in the 5 km Study Area and 18-2: Location of non-designated heritage assets in the 1 km Study Area.

Assessing Heritage Value

- 18.3.12 For the purpose of this assessment, the significance of a heritage asset, as defined by Annex 2 of the NPPF, is referred to as its 'value'.
- 18.3.13 The value of a heritage asset is guided by its designated status, but is derived also from its heritage interest, which may be archaeological, architectural, artistic or historic (NPPF Annex 2, Glossary). The setting of a heritage asset can also contribute to its value. Using professional judgment and the results of consultation, heritage assets are also assessed on an individual basis and regional variations and individual qualities are taken into account where applicable.
- 18.3.14 Each identified heritage asset can be assigned a value in accordance with the criteria set out in Table 18-2. This table provides guidance, but professional judgment will be applied in all cases regarding the appropriate category for individual heritage assets. Where it is assessed that an asset is of greater or lower value than noted in the guidance table, justification will be provided. For example, the nature and character of conservation areas varies greatly, and the special character of these areas comes not only from the quality of their buildings but also from elements that provide value and character to the wider landscape. In consideration of this, conservation areas feature in both the High and Moderate asset categories and professional judgment has been applied in order to determine to which asset category a conservation area belongs.

Table 18-2: Factors for Assessing the Value of Heritage Assets

Value	Criteria
High	<ul style="list-style-type: none"> World Heritage Sites Grade I and Grade II* Listed Buildings Grade I and Grade II* Registered Parks and Gardens Scheduled Monuments Registered battlefields Conservation areas (as appropriate) Non-designated heritage assets that can be shown to have demonstrable national or international importance.
Medium	<ul style="list-style-type: none"> Grade II listed buildings Conservation areas (as appropriate) Grade II Registered Parks and Gardens Locally listed buildings as recorded on a local authority list. Non-designated heritage assets that can be shown to be of regional importance. Historic Townscapes with historic integrity in that the assets that constitute their make-up are clearly legible. Averagely well-preserved historic landscape character areas with reasonable coherence, time-depth or other critical factors.
Low	<ul style="list-style-type: none"> Non-designated buildings, monuments, sites or landscapes that can be shown to be of limited or local interest only. Assets whose values are compromised by poor preservation or survival of contextual associations to justify inclusion into a higher grade. Historic landscape character areas whose value is limited by poor preservation and/or poor survival of contextual associations.

Value Criteria

Negligible Assets whose values are compromised by poor preservation, or survival, or of contextual associations to justify inclusion into a higher grade.
 The site of a former asset removed from its place, such as a find spot, with no potential for surviving contextual associations.
 Historic landscape with no or little surviving historic interest.

18.3.15 Having identified the value of the heritage asset, the next stage in the assessment is to identify the level and degree of impact to an asset arising from the development. Impacts may arise during construction, operation or decommissioning and can be temporary or permanent. Impacts can occur to the physical fabric of the asset or affect its setting.

18.3.16 The level and degree of impact (impact rating) is assigned with reference to a four-point scale as set out in Table 18-3. In respect of cultural heritage, an assessment of the level and degree of impact is made in consideration of any scheme design mitigation (embedded mitigation).

Table 18-3: Factors for Assessing the Magnitude of Impact

Impact rating	Description of impact
High	Changes such that the heritage value of the asset is totally altered or destroyed. Comprehensive change to elements of setting that would result in harm to the asset and our ability to understand and appreciate its heritage significance.
Medium	Change such that the heritage value of the asset is significantly altered or modified. Changes such that the setting of the asset is noticeably different, affecting significance and resulting in changes in our ability to understand and appreciate the heritage value of the asset.
Low	Changes such that the heritage value of the asset is slightly affected. Changes to the setting that have a slight impact on significance resulting in changes in our ability to understand and appreciate the heritage value of the asset.
Very Low	Changes to the asset that hardly affect heritage value. Changes to the setting of an asset that have little effect on significance and no real change in our ability to understand and appreciate the heritage value of the asset.

18.3.17 An assessment to classify the effect, having taken into account any embedded mitigation, is determined using the matrix at Table 18-4, which considers the value of the asset and the magnitude of impact. Effects can be neutral, adverse or beneficial.

Table 18-4: Factors for Assessing the Significance of Effect

Heritage value (significance)	Magnitude of impact			
	High	Medium	Low	Very Low
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Minor
Low	Moderate	Minor	Minor	Negligible
Negligible	Neutral	Neutral	Neutral	Neutral

18.3.18 The PEI Report details the significance of effect in accordance with EIA methodology, which considers major and moderate effects to be significant.

18.3.19 Within the NPPF, impacts affecting the value of heritage assets are considered in terms of harm and there is a requirement to determine whether the level of harm amounts to ‘substantial harm’ or ‘less than substantial harm’. There is no direct correlation between the significance of effect as reported in this PEI Report and the level of harm caused to heritage significance. A major (significant) effect on a heritage asset would, however, more often be the basis by which to determine that the level of harm to the significance of the asset would be substantial. A moderate (significant) effect is unlikely to meet the test of substantial harm and would therefore more often be the basis by which to determine that the level of harm to the significance of the asset would be less than substantial. A minor or negligible (not significant) effect would still amount to a less than substantial harm; however, a neutral effect is classified as no harm. In all cases determining the level of harm to the significance of the asset arising from development impact is one of professional judgment.

18.3.20 An assessment of the predicted effect is made both prior to the implementation of mitigation and after the implementation of mitigation. The first highlights where specific mitigation may be appropriate. The second highlights where the mitigation has been effective in reducing effects to enable an overall residual effect of the project as a whole. It is important to stress that mitigation does not automatically reduce an effect but may be used to offset an adverse impact.

18.4 Baseline Conditions

18.4.1 Baseline conditions for the Site are set out in Appendix 18A: Cultural Heritage Baseline (PEI Report, Volume III).

18.5 Development Design and Impact Avoidance

18.5.1 As the design of the Proposed Development further progresses and during the detailed design process of the of the Proposed Development, where reasonably practicable, efforts will be made to avoid impact upon cultural heritage assets and their setting. Impacts to heritage assets could be reduced through the following measures:



- refining the routing of connections to avoid heritage assets;
- use of existing pipeline infrastructure, as far as is practicable, in order to avoid impacts to heritage assets; and
- siting the proposed CO₂ Gathering Network and Electrical Connection Corridor above ground, thereby minimising impacts to potential buried archaeological remains.

18.5.2 This PEI report presents the preliminary environmental information that is being used to continually review and update the project design as part of an iterative design process. The project design development will continue, taking account of consultation responses. The ES will include further assessment of the potential impacts of the Proposed Development on cultural heritage assets.

18.6 Likely Impacts and Effects

- 18.6.1 As a worst-case construction scenario this preliminary assessment assumes that open trench construction would be used as opposed to using trenchless technologies to install the CO₂ Export Pipeline, the Water Abstraction Corridor and the Water Discharge Corridor. Furthermore, as the location of the trenches are not known at this stage, it could occur anywhere within the corridors. Therefore, for the purpose of capturing the worst-case scenario construction impact, it is assumed that any heritage assets within the corridors could be directly impacted and removed entirely.
- 18.6.2 The precise layout of the Power, Capture and Compressor elements within the PCC are not known at this stage, therefore it is assumed there is the potential for permanent impacts to heritage assets located within the proposed PCC.
- 18.6.3 It is assumed that the CO₂ Gathering Network would run above ground and would utilise existing pipe racking, culverts and over bridges. As such, permanent physical impacts to heritage assets are not anticipated as a result of this component of the Proposed Development.
- 18.6.4 Permanent and temporary impacts to assets within the proposed Site boundary and within the Study Area are assessed below.

Construction Impacts

Permanent Impacts

Assets Located Adjacent to and within the PCC

- 18.6.5 The former Redcar Blast Furnace and associated infrastructure are located adjacent to the PCC. The blast furnace is a well-preserved and relatively rare example of its type and is assessed to be of medium value. The value of the asset derives from its historical interest, contribution to local identity, rarity, and preservation level. It is assumed that there would be no physical impacts to the blast furnace arising from the construction of the Proposed Development.



18.6.6 Ancillary structures and conveyors associated with the blast furnace, within the PCC, may be physically impacted during construction of the Proposed Development. The structures provide the functional setting to the blast furnace as well as historical context and are of local interest and low value. Construction may entail the removal of these structures which would result in a total loss of their heritage value. This would constitute a high magnitude of impact and would result in a moderate adverse effect to the structures themselves, as well as change to the setting of the blast furnace resulting in the slight erosion of understanding of its functional setting and processes. This would constitute a low magnitude of impact and would result in a minor adverse effect.

Assets Located Within the Site (Water Abstraction Corridor and Water Discharge Corridor)

18.6.7 The sites of two 19th century tramways (5708) and (5712) are located within the Site boundary.

18.6.8 Asset 5708 comprises the former tramway which ran from the main branch railway to South Gare Breakwater. There is no evidence of surviving above ground features within the PCC and beyond the Site boundary the course of the tramway is marked by a footpath. The value of the asset is assessed to be negligible and impact to any below ground features associated with the track bed would be very low as the value of the asset would not change. The effect is assessed to be neutral.

18.6.9 Tramway 5712 ran from Redcar Jetty to Coatham Iron Works and terminated at Redcar Iron Works. The site of the tramway is occupied by Redcar Blast Furnace in the west of the PCC and there is no potential for any part of the asset to survive. The site of the tramway in the east of the PCC is marked by an informal footpath and areas of scrub, and there is low potential for sub-surface features to be present. The value of the tramway in this part of the PCC is assessed to be negligible as its value is limited by (presumed) poor preservation. Impacts arising from construction activities within the PCC would result in the permanent loss of any surviving features associated with the asset. This would constitute a high magnitude of impact, resulting in a neutral effect.

18.6.10 The site of Coatham Ironworks (5709) and associated reservoir (5710) is located entirely within the proposed Site boundary, and the site of Redcar Ironworks is located partially within the proposed Site boundary. Both sites are important for understanding the industrial heritage of the Study Area. There are no standing remains associated with the site and it is currently unknown if any sub-surface remains are likely. Currently, the archaeological value of these sites is assessed to be negligible. Impacts to any below ground features associated with the assets is assessed as very low as the value of the assets would not change. The effect is assessed to be neutral.

18.6.11 Six World War II pillboxes are located entirely within the Water Discharge Corridor (3649, 3650, 3647, 3648, 1829, 1828).

18.6.12 The pillboxes are a legacy to the strategic importance of the north-east coast during World War I and II and are indicative of the country's defensive



efforts. Military features are well represented in the region and all the pillboxes within the proposed Site boundary represent a common typology.

- 18.6.13 Pillbox 3649 was not observed during the site walkover and is assumed to have been broken up by the sea. Its value is assessed to be negligible due to its poor preservation. The construction of the pipeline could remove the asset entirely, resulting in total loss of its heritage value. The impact is assessed to be high, resulting in a neutral effect.
- 18.6.14 Pillbox 3647 has been broken up and is in poor condition. Its value is assessed to be negligible due to its poor preservation. The construction of the pipeline could remove the asset entirely, resulting in total loss of its heritage value. The impact is assessed to be high, resulting in a neutral effect.
- 18.6.15 Pillbox 3650 was not observed during the site walkover and is assumed to have been broken up by the sea, its value is assessed to be negligible due to its poor preservation. The construction of the pipeline could remove the asset entirely, resulting in total loss of its heritage value. This would constitute a high magnitude of impact, resulting in a neutral effect.
- 18.6.16 Pillbox 3648 has been buried by sand dunes and is assumed to be in a good condition. The value of the asset is assessed to be medium due to its good level of preservation, archaeological value and contribution to the history of wartime defence in the region. The construction of the pipeline could remove the asset entirely, resulting in total loss of its heritage value. This would constitute a high magnitude of impact, resulting in a major adverse effect.
- 18.6.17 Pillbox 1829 is a 3 m square structure with an entry point on the western flank, which appears to post-date the concrete and brick pillbox. Its condition is poor, and its value is assessed as low. The construction of the pipeline could remove the asset entirely, resulting in total loss of its heritage value. This would constitute a high magnitude of impact, resulting in a moderate adverse effect.
- 18.6.18 Pillbox 1828 is a rectangular structure which is in average to poor condition. Its value is assessed as low. The construction of the pipeline could remove the asset entirely, resulting in total loss of its heritage value. This would constitute a high magnitude of impact, resulting in a moderate adverse effect.
- 18.6.19 The site of a World War I rifle range, Rifle Butts (3655) is recorded as is a large concrete structure, at least 2 m high and 13 m x 4 m in plan. The asset was not observed during the site walkover, but the feature recorded on the Redcar and Cleveland HER concords with a pair of structures marked 'Butts' on the 1919-1920 Ordnance Survey map and may be associated with Pasley and South Gare Batteries. The value of the asset is assessed to be medium due to its archaeological value and contribution to the history of wartime defence in the region. Without mitigation construction of the CO₂ Export Pipeline could remove the asset entirely, resulting in total loss of its heritage value. This would potentially constitute a high magnitude of impact and a major adverse effect.

18.6.20 The baseline study has identified a medium potential for submerged peat deposits to be present within the alluvium. Trench excavation associated with the Proposed Development may impact deposits containing palaeoenvironmental data. These deposits can provide information relating to palaeolandscapes and climate and are likely to be of regional importance and medium value. Impact from construction would result in the removal of a proportion of the asset, which is presumed to extend over a wider area than the impact corridor. This would constitute a low magnitude of impact and a minor adverse effect.

Assets Located Within the Site (CO₂ Gathering Network, Natural Gas Connection Corridor and Electrical Connection Corridor)

18.6.21 The sites of several medieval salterns are located within the proposed Site boundary (3749, 3750, 3751, 3752, 3753, 3754, 3759, 3760). The sites of the salterns are no longer surviving and they also do not appear on historical OS maps, suggesting the earthworks were removed sometime during the 20th century. The features survive as documentary map evidence but have limited archaeological interest and their heritage value is assessed to be negligible. There would be no impact to the assets' value as a result of the construction of the Proposed Development and the effect is neutral.

18.6.22 The assets listed in Table 18-5 are located within the CO₂ Gathering Network, Natural Gas Connection Corridor and Electrical Connection Corridor. The assets include surviving World War II structures, historic landscape features, find spot evidence and sites of former features. As the proposed infrastructure will be housed above ground there will be no permanent impact arising from construction and no change to the assets' heritage value. The effect for all assets is assessed as neutral.

Table 18-5: HER Assets Within the CO₂ Gathering Network, Natural Gas Connection Corridor and Electrical Connection Corridor

Asset	Asset Name	Value	Impact	Effect
Assets south of the River Tees				
5176	The Mill Race	Low	No impact	Neutral
355	West Coatham deserted medieval village	Medium	No impact	Neutral
4048	Isaac's Pond former brickearth pit	Negligible	No impact	Neutral
5721	Site of 19th century Sand Pits Farm	Low	No impact	Neutral
1220	Ridge and furrow marks near Lazenby Farm	Low	No impact	Neutral
5694	Gravel pit west of Old Hall Farm	Negligible	No impact	Neutral
4478	Site of Lackenby medieval village	Medium	No impact	Neutral
1803	Find spot comprising medieval pottery	Low	No impact	Neutral
1082	Ridge and furrow marks near site of medieval village of Lackenby	Low	No impact	Neutral
1079	Find spot of Roman pottery east of Lackenby Lane	Low	No impact	Neutral
1542	Find spot of abraded medieval pottery north of Old Hall farm	Low	No impact	Neutral

Asset	Asset Name	Value	Impact	Effect
1573	Find spot of abraded Roman pottery found west of Greystone Road	Low	No impact	Neutral
5646	Site of clay pits west of Tees Dock Road	Negligible	No impact	Neutral
4782	Mid-20th century signal box; still in use	Low	No impact	Neutral
5647	Site of Lackenby railway station	Low	No impact	Neutral
5653	Site of brickyard south of Tees Dock Road	Low	No impact	Neutral
5654	Site of concrete works on site of former brickyard 5653	Low	No impact	Neutral
5652	Site of un-named spoil ground	Negligible	No impact	Neutral
5602	Site of training wall which ran from Normanby Jetty to South Gare	Low	No impact	Neutral
5688	Site of Lazenby Station and sidings	Low	No impact	Neutral
4365	Site of World War II bomb decoy at Bran Sands. Fire decoy, designed to replicate an industrial furnace	Low	No impact	Neutral
6056	19th century Eighth Buoy Scarp Beacon	Low	No impact	Neutral
Assets north of the River Tees				
6095	World War II section post at Seal Sands	Low	No impact	Neutral
3287	World War II pillbox east of Seaton Carew Road	Low	No impact	Neutral
6792	World War II pillbox west of Seaton Carew Road	Low	No impact	Neutral
6820	Site of 19th century Low Belasis farm	Low	No impact	Neutral
5267	World War II air raid shelter south of Nelson Avenue	Low	No impact	Neutral
613	Site of Belasis Hall Manor House; 19th century with medieval origins	Medium	No impact	Neutral
5156	Site of moat associated with former Belasis Hall	Medium	No impact	Neutral
4175	Port Clarence Branch railway	Low	No impact	Neutral
6099	Site of Billingham Anhydrite Mine	Low	No impact	Neutral

Temporary Impacts

18.6.23 Temporary impacts to assets within the Site boundary may arise through changes to their setting during construction.

Assets Located Within the CO₂ Gathering Network, Natural Gas Connection Corridor and Electrical Connection Corridor

18.6.24 There are no listed buildings within the proposed Site boundary. Six listed buildings are located within 200 m of the proposed Site boundary and comprise Grade II* Old Hall Farmhouse and garden wall (NHLE 1139659) and an associated byre barn (NHLE 1329613) and stable range (NHLE 1159438), (both of which are Grade II listed), Barn and stable circa 10 metres north west of Marsh Farmhouse (NHLE 1139620), garden wall south of Marsh Farmhouse (NHLE 1139619) and Marsh Farmhouse and Farm Cottage (NHLE 1160308). This group of buildings is located along Crow Lane to the north-east of Old Lackenby. The setting of this group of buildings is defined by the surrounding arable fields which provides a functional



context for the farm. The Grade II* wall provides the domestic setting to the Grade II* farmhouse and contributes to its historical integrity. The buildings derive value from their architectural and historic interest and, as a group, are of high value.

18.6.25 During construction, there may be increased noise arising from the installation of the electrical connections, and visibility of connection works to Lackenby Substation. These activities would have little change on the setting of the assets and no real change in the ability to understand and appreciate their heritage value. The impact is assessed to be very low, resulting in temporary minor adverse effect.

Assets Located in the 5 km Study Area

18.6.26 Marsh Farmhouse and cottage (NHLE 1160308), garden wall (NHLE 1139619) and stable and barn (NHLE 1139620) are located approximately 170 m north-east of the proposed Site boundary. They are all Grade II listed and of medium value. The farmhouse dates to the mid-18th century with 19th and 20th century additions. The farmhouse, cottage, wall, stables and barn have a group value. The garden wall provides a domestic setting for the cottage, separate to the more functional setting of the stables and barn. The wider setting of the group has been eroded by the loss of common land to the north and by a large earthen bund to the south, which precludes views towards the former arable land of Coatham marshes.

18.6.27 The Proposed Development does not contribute to the setting or value of the asset group. However, the setting of the buildings may change temporarily as a result of construction noise. The nearest construction activity would be located at the PCC, located approximately 650 m to the west and would result in an increase in noise levels. Typical noise levels of 47 decibels (dB) have been recorded adjacent to the buildings during daytime hours. Predictive modelling has predicted levels of 60 dB during site clearance, 58 dB during piling activities and 56 dB during building (see Chapter 11: Noise and Vibration (PEI Report, Volume I) for further information). The increased noise levels would be distinguishable from the group of buildings but would not diminish the ability to appreciate the assets' dominant setting which is their associative relationship with each other. The increase in noise levels would constitute a low magnitude of impact and a temporary minor adverse effect.

18.6.28 Foxrush Farmhouse and garden wall (NHLE 1310702) and associated barn (NHLE 1139646) are located approximately 500 m east of the proposed Site boundary. The buildings are all Grade II listed and are of medium value. The former farm complex is currently an animal rescue centre. The setting of the buildings is defined principally by their associative relationship with each other. The buildings are set within a field which is bordered on all sides by woodland and mature hedgerow, resulting in an enclosed visual setting. The surrounding arable land, which represents the historical functional context of the farm, no longer contributes to the assets' setting. The Proposed Development does not contribute to the setting or value of the asset group and therefore construction activities within the Electrical Connection Corridor would not affect their value. It is assessed that there would be no impact, resulting in a neutral effect.



- 18.6.29 A group of farm buildings comprising Manor Farmhouse, cart shed and outhouse (NHLE 1160171), barn and stable (NHLE 1139647), a barn screening wall (NHLE 1139612), and byre range (NHLE 1329628) are all Grade II listed and of medium value. The buildings form a group to the north of Kirkleatham Business Park and are located approximately 400 m east of the Electrical Connection Corridor within the proposed Site boundary. Arable fields to the north of the farm provide a functional setting for the buildings. The Proposed Development does not contribute to the setting or value of the asset group and therefore construction activities within the Electrical Connection Corridor would not affect their value. It is assessed that there would be no impact, resulting in a neutral effect.
- 18.6.30 Kirkleatham conservation area is assessed to be of high value due to the number and variety of listed buildings within it, which includes five Grade I listed buildings. The conservation area is quite enclosed and views within the conservation area contribute to its setting. The landscape beyond the conservation area does not contribute to its setting, and although the area has historical links to the fields around Yearby to the south, this no longer forms part of its setting or contributes to its value. The conservation area abuts the eastern edge of the Electrical Connection Corridor within the proposed Site boundary and construction activities would be noticeable upon entering and leaving the area. This would constitute a very low magnitude of impact, as the slight changes to setting would not change the ability to appreciate the asset and would result in a temporary minor adverse effect.

Operational Impacts

- 18.6.31 There would be no additional impacts to buried archaeological remains during operation, as any impact would have occurred during construction.
- 18.6.32 The Proposed Development would be designed to operate 24 hours per day, 7 days per week and external lighting will be used at the PCC to provide safe working conditions in all construction areas. The PCC has been redundant for five years; therefore, the noise and lighting levels may introduce new components into the settings of heritage assets.
- 18.6.33 Maintenance of the scheme, although infrequent, could involve the installation of new equipment or replacements of substantial elements. It is considered, however, that the changes to the setting of heritage assets introduced by such activities would be no worse than those during construction of the Proposed Development and would be for shorter duration. Therefore, no additional impacts are envisaged due to scheme maintenance during operation.
- 18.6.34 It was assessed during the site walkover that the Proposed Development would be visible from the Iron Age hillfort at Eston Nab. As a defensive site, views to and from the hillfort are a key feature of its setting and contribute to its value. The importance of this visibility is reinforced by its use in the 19th century as a beacon location. Views from the hillfort which form part of its setting and contribute to its value includes views to the south and south-west, towards the prehistoric landscape of the Tees Valley, and towards the Cleveland Hills and Roseberry Topping. Views to the north across the Wilton



Complex and beyond to the North Sea also contribute to its value, and the contrast between the low-lying landscape around the Tees Estuary and Eston Hills, emphasises the topographic prominence of the monument.

18.6.35 The Proposed Development would represent a new component into an existing industrial landscape. Its inclusion within the visual setting of the monument is not incongruous to the asset's current setting and would not interrupt long-range views across the Tees Estuary. It is assessed that the Proposed Development would not change the asset's setting or value and would result in a neutral effect.

18.6.36 The Proposed Development would not be visible from within Kirkleatham conservation area and would not change its setting or affect its character. There would be no impact from the operation of the Proposed Development and the effect would be neutral.

Decommissioning Impacts

18.6.37 At the end of its operating life, all above-ground equipment associated with the Proposed Development will be decommissioned and removed. Prior to removing the plant and equipment, all residues and operating chemicals will be cleaned out from the plant and disposed of in an appropriate manner.

18.6.38 There will be no additional impacts on buried cultural heritage assets during decommissioning activities. Decommissioning will be undertaken within the same footprint used during construction and therefore any impact to buried cultural heritage remains will have occurred, and have been mitigated, at the construction phase. Decommissioning activities, comprising the use of machinery to disassemble the CCGTs and associated infrastructure, are likely to be visible from the scheduled hillfort at Eston Nab which is assessed to be of high importance. However, decommissioning activities will not represent a significant change in views from the monument which would change the asset's setting or affect its value. It is assessed there will be no change to the setting or value of the monument as a result of decommissioning, resulting in a neutral effect.

18.7 Mitigation and Enhancement Measures

18.7.1 A World War I rifle range and pillboxes dating from the Second World War are located entirely within the proposed Site boundary and may be impacted by the Proposed Development, potentially resulting in a total loss of heritage value and a significant effect.

18.7.2 Avoidance by design is recommended. Further mitigation options will be explored where necessary during design development and any further mitigation and enhancement that could be brought forward for scheme will be reported in the Environmental Statement. The scope of mitigation will be discussed and approved with the Archaeological Advisor to RCBC. The methodology will be set out in a written scheme of investigation (WSI) which will be approved in writing by the local authority.

18.8 Limitations or Difficulties

- 18.8.1 Ground conditions of the PCC and connection corridors² contains areas of hardstanding and made ground and contains existing utilities. As such, traditional non-invasive surveys, such as geophysical survey, were not undertaken as they were either assessed to be unnecessary, e.g. in areas of made ground, or ground conditions would preclude good survey results.

18.9 Residual Effects and Conclusions

- 18.9.1 Significant effects have been identified for the construction phase of the Proposed Development. Mitigation option by avoidance reduces the magnitude of impact to not-significant. Significant effects are also not predicted for the operational and decommissioning phases of the Proposed Development. A summary of significant effects is provided in Table 18-6.

² CO₂ Gathering Network, Water Connection Corridors, Natural Gas Connection Corridor and Electrical Connection Corridor.

Table 18-6: Summary of Significant Effects

Development Stage	Asset ID / Value	Impact	Effect (including embedded mitigation)	Mitigation measure	Residual effect	Nature of effect(s)
Construction	N/A (with mitigation by design avoidance)					
Operation	N/A					
Decommissioning	N/A					

Note: Lt = long term, Mt = medium term, St = short term, P = permanent, T = temporary

18.10 References

Ancient Monuments and Archaeological Areas Act 1979 (c. 46). London: The Stationery Office.

Chartered Institute for Archaeologists (2017). *Standard and guidance for historic environment desk-based assessment*. Reading: ClfA.

Department of Energy and Climate Change (2011). *Overarching National Policy Statement for Energy (EN-1)*. London: The Stationery Office.

Historic England (2015). *Historic England Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment*. London: Historic England

Historic England (2015). *Historic England Good Practice Advice in Planning Note 3: The Setting of Heritage Assets*, 2nd edition. London: Historic England.

MHCLG Ministry of Housing, Communities & Local Government (2019). *National Planning Policy Framework*. London: The Stationery Office.

Redcar and Cleveland Borough Council (2018). *Redcar & Cleveland Local Plan* [Online]. Available at: <https://www.redcar-cleveland.gov.uk/resident/planning-and-building/local-plan/areagrowth/Local%20Plan%20Adopted%20May%202018.pdf>

Stockton-on-Tees Borough Council (2019). *Stockton-on-Tees Borough Council Local Plan* [Online]. Available at: <https://www.stockton.gov.uk/media/1585775/localplanmainreportcontents.pdf>

The Planning (Listed Buildings and Conservation Areas) Act 1990 (c. 9). London: The Stationery Office.