

Net Zero Teesside Project

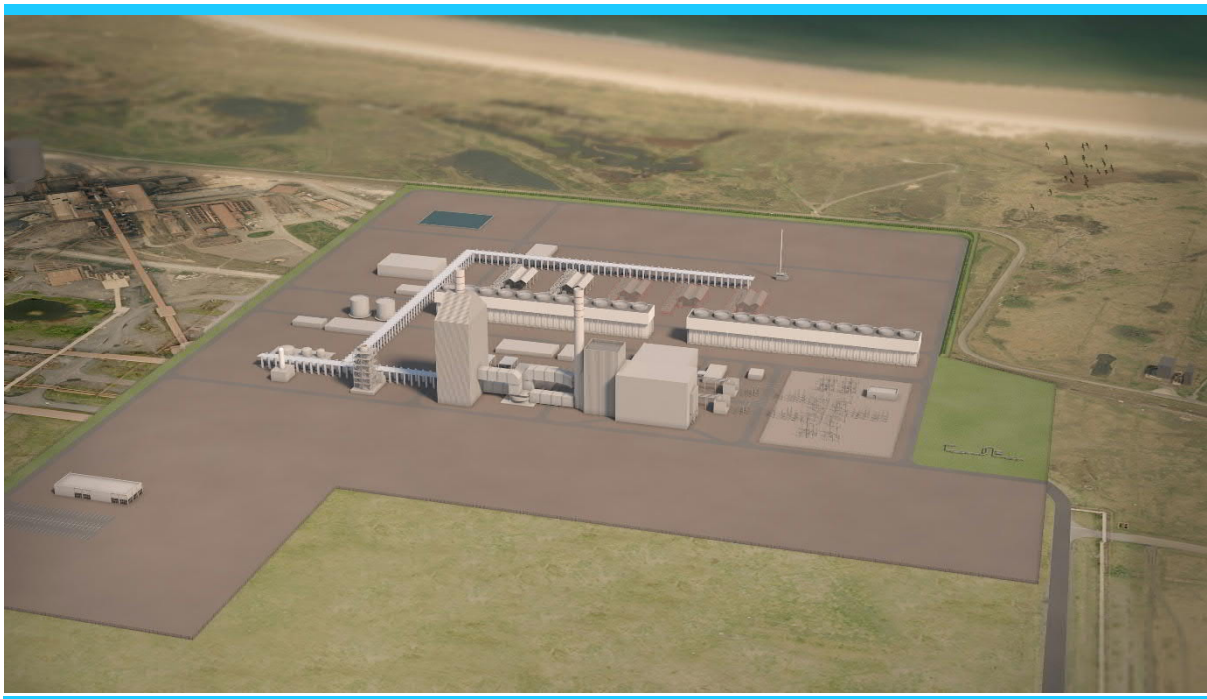
Planning Inspectorate Reference: EN010103

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: 5.9 Statutory Nuisance Statement

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulation 5(2)(f)



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

Date: May 2021

DOCUMENT HISTORY

Document Ref	5.9 Statutory Nuisance Statement		
Revision	1.0		
Author	A. Sinha		
Signed		Date	May 2021
Approved By	R Lowe		
Signed		Date	May 2021
Document Owner	AECOM Ltd		

GLOSSARY

Abbreviation	Description
AEL	Associated Emissions Levels – see BAT-AELs.
AOD	Above Ordnance Datum - a spot height (an exact point on a map) with an elevation recorded beside it that represents its height above a given datum.
APFP	APFP Regulations: The Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 (amended in 2014) - an Act of the Parliament of the United Kingdom that defines, within England, Wales and Scotland, the manner in which an applicant must publicise a proposed development consent application.
Barg	Measured pressure, in units of bars, above atmospheric pressure.
BAT	Best Available Technique - the available techniques which are the best for preventing or minimising emissions and impacts on the environment. BAT is required for operations involving the installation of a facility that carries out industrial processes. Techniques can include both the technology used and the way an installation is designed, built, maintained, operated and decommissioned.
BAT-AELs	Best Available Technique (BAT) Associated Emission Levels - Achievable emissions values following the implementation of the best available techniques for preventing or minimising emissions and impacts on the environment.
Biodiversity	The variety of life in the world or in a particular habitat or ecosystem.
BRE	Building Research Establishment
BRefs	Best Available Technique (BAT) reference documents - a series of reference documents covering industrial processes, their respective operating conditions and emission rates.
British Standard	Standard produced by the British Standards Institution based upon the principles of standardisation recognised inter alia in European Policy.
BSI	British Standards Institute - business standards based upon the principles of standardisation recognised inter alia in European Policy.
CCGT	Combined Cycle Gas Turbine - a highly efficient form of energy generation technology. An assembly of heat engines work in tandem

Abbreviation	Description
	using the same source of heat to convert it into mechanical energy which drives electrical generators and consequently generates electricity.
CCR	Carbon Capture Ready - space to be set aside to accommodate future carbon capture equipment.
CCS	Carbon Capture and Storage - technology that can capture carbon dioxide (CO ₂) emissions produced from the use of fossil fuels in electricity generation and industrial processes.
CCUS	Carbon Capture Usage and Storage – is a group of technologies designed to reduce the amount of carbon dioxide (CO ₂) released into the atmosphere from coal and gas power stations as well as heavy industry including cement and steel production. Once captured, the CO ₂ can be either re-used in various products, such as cement or plastics (Usage), or stored in geological formations deep underground (storage).
CEMP	Construction Environmental Management Plan - a plan to outline how a construction project will avoid, minimise or mitigate effects on the environment and surrounding area.
CEMs	Continuous Emissions Monitoring system – an automated system fitted to emission points venting to air, used to continuously monitor emissions.
CHP	Combined Heat and Power - a highly efficient process that captures and utilises the heat that is a by-product of the electricity generation process.
CIBSE	Chartered Institution Building Services Engineers
CO	Carbon Monoxide - a colourless, odourless and tasteless gas slightly less dense than air.
CO ₂	Carbon Dioxide - an inorganic chemical compound with a wide range of commercial uses, it is a colourless, odourless and tasteless gas denser than air
CO ₂ e	Carbon dioxide equivalent – a metric measure used to compare the emissions from various greenhouse gases on the basis of their global-warming potential, by converting amounts of other gases to the equivalent amount of carbon dioxide with the same global warming potential.

Abbreviation	Description
dB	Decibel – unit to measure the intensity of sound.
DCO	A Development Consent Order made by the relevant Secretary of State pursuant to The Planning Act 2008 to authorise a Nationally Significant Infrastructure Project. A DCO can incorporate or remove the need for a range of consents which would otherwise be required for a development. A DCO can also include rights of compulsory acquisition.
Decibel (dB)	The scale used to measure noise is the decibel scale which extends from 0 to 140 decibels, corresponding to the intensity of the sound pressure level.
DMRB	Design Manual for Roads and Bridges - a series of 15 volumes that provide standards, advice notes and other documents relating to the design, assessment and operation of trunk roads in the United Kingdom.
EALs	Environmental Assessment Levels - The Environment Agency's guidance "Air emissions risk assessment for your environmental permit" provides methods for quantifying the environmental impacts of emissions to all media. As well as referring to standards detailed above, it also contains long and short-term Environmental Assessment Levels (EALs) for releases to air derived from a number of published UK and international sources.
EIA	Environmental Impact Assessment – a term used for the assessment of environmental consequences (positive or negative) of a plan, policy, program or project prior to the decision to move forward with the proposed action.
EMS	Environmental Management System - the management of an organization's environmental programs in a comprehensive, systematic, planned and documented manner.
EPA	The Environmental Protection Act 1990 - an Act of the Parliament of the United Kingdom that defines, within England, Wales and Scotland, the fundamental structure and authority for waste management and control of emissions into the environment.
EPR	Environmental Permitting Regulations - Regulations that came into force in 2008 combining Pollution Prevention and Control and Waste Management Licensing regulations.
ES	Environmental Statement – a report in which the process and results of an Environment Impact Assessment are documented.

Abbreviation	Description
Flue gas	Emissions from combustion process, emitted via a stack or passed to a carbon-capture plant.
Hectare (Ha)	A metric unit of measurement, equal to 10,000 square metres or to 2.471 acres.
HP	High pressure
HRSG	Heat Recovery Steam Generator - an energy recovery heat exchanger that recovers heat from a hot gas stream. It produces steam that can be used in a process (cogeneration) or used to drive a steam turbine (combined cycle).
IAQM	The Institute of Air Quality Management – professional body for air quality air professionals.
IED	Industrial Emissions Directive, EU Directive 2010/75/EU – European Union Directive committing member states to control and reduce the impact of industrial emissions on the environment.
ISO	International Organization for Standardization - an international standard setting body composed of representatives for various national standards organisations.
LCP	Large Combustion Plant - a combustion plant with a thermal capacity of 50MW or greater.
LCPD	Large Combustion Plant Directive – EU Directive 2001/80/EC – European Union Directive committing member states to control and reduce the impact of certain pollutants into the air from large combustion plants.
LP	Low pressure – the LP Compressor Station will compress the CO ₂ stream to a pressure between 12 and 20 bar above ambient pressure (barg).
Mitigation	Measures intended to avoid, reduce and, where possible, remedy significant adverse environmental effects.
MW	Megawatts – unit of energy.
N-Amines	Nitrosamines and nitramines – degradation products of amines.
NH ₃	Ammonia – a compound of nitrogen and hydrogen.
NO _x	Oxides of Nitrogen - a mixture of gases that are composed of nitrogen and oxygen.

Abbreviation	Description
NSIP	Nationally Significant Infrastructure Projects - defined by the Planning Act 2008 and cover projects relating to energy (including generating stations, electric lines and pipelines); transport (including trunk roads and motorways, airports, harbour facilities, railways and rail freight interchanges); water (dams and reservoirs, and the transfer of water resources); wastewater treatment plants and hazardous waste facilities. These projects are only defined as nationally significant if they satisfy a statutory threshold in terms of their scale or effect.
NZT	Net Zero Teesside
PM2.5	Fine particulate matter less than 2.5 µm in size – an air pollutant.
PM10	Particulate matter less than 10 µm in size – an air pollutant.
Residual Effect	The predicted consequential change on the environment from the impacts of a development after mitigation.
SoS	Secretary of State - the decision maker for DCO applications and head of Government department.
STDC	South Tees Development Corporation – the area covers 4,500 acres of land south of the River Tees in the borough of Redcar and Cleveland.
Study Area	The area within which environmental effects which may be classed as significant are assessed (i.e. extending a distance from the project footprint).
Visual Amenity	The enjoyment or benefit that people (individually or as a group) gain from a particular view that may change as a consequence of a proposed development during its construction, operation or decommissioning.

CONTENTS

1.0	Executive Summary	1
2.0	Introduction	2
3.0	Identification and Assessment of Statutory Nuisance	8
4.0	Potential Nuisance Impacts	10
5.0	Conclusions	19
6.0	References.....	20

TABLES

No table of figures entries found.

FIGURES

No table of figures entries found.

APPENDICES

NO TABLE OF CONTENTS ENTRIES FOUND.

1.0 EXECUTIVE SUMMARY

- 1.1.1 Net Zero Teesside Power Limited and Net Zero North Sea Storage Limited (the Applicants) are seeking development consent for the UK's first commercial scale, full chain Carbon Capture, Usage and Storage ('CCUS') project (the 'Proposed Development') which will capture up to 4 million tonnes (Mt) of carbon dioxide (CO₂) emissions per annum in this first phase of the project. The Proposed Development will comprise a number of elements, including a new gas-fired power station, with state-of-the art carbon capture technology; gas, water and electricity connections (for the power station); a CO₂ pipeline network (a 'gathering network') for collecting CO₂ from a cluster of local businesses and industries on Teesside; a CO₂ compressor station and a CO₂ export/transport pipeline. The CO₂ captured from the power station and local businesses/industries will be transported (via the export/transport pipeline) for secure storage within the Endurance saline aquifer located 145 kilometres offshore from Teesside under the North Sea. The export/transport pipeline has the capacity to carry up to 10Mt of CO₂ per annum. The Proposed Development will therefore make a significant contribution toward the UK reaching its net zero greenhouse gas emissions target by 2050.
- 1.1.2 This Statutory Nuisance Statement has been prepared to support a Development Consent Order (a DCO) application for the construction, operation, maintenance and decommissioning of Proposed Development on land at and in the vicinity of the former Redcar Steel Works Site, Redcar and in Stockton-on-Tees, on Teesside (the 'Proposed Development Site').
- 1.1.3 This Statutory Nuisance Statement identifies the matters set out in Section 79(1) of the Environmental Protection Act 1990 (the EPA 1990) in respect of statutory nuisance and considers whether the Proposed Development could cause statutory nuisance. It has been written in order to comply with Regulation 5(2)(f) of the Infrastructure Planning (Applications: Prescribed Forms and Procedures) Regulations 2009 (the 'APFP Regulations'), which states that any application for a DCO should be accompanied by a statement setting out whether the proposed development could cause a statutory nuisance, pursuant to Section 79(1) of the EPA 1990. If such a nuisance could occur, the statement must set out how the applicant proposes to mitigate or limit the effects.
- 1.1.4 Potential statutory nuisance may include noise, artificial light, odours, insects, smoke, dust arising on premises, fumes, accumulations and keeping of animals. Without appropriate embedded mitigation and controls, various types of potential nuisance could potentially result from the construction, operation, maintenance and decommissioning of the Proposed Development.

However, through the embedded mitigation in place and the controls provided for, as presented within the Environmental Statement (Document Refs. 6.1 - 6.4) and secured in the DCO, it has been demonstrated that the Proposed Development is unlikely to give rise to any statutory nuisance under the EPA 1990. Therefore, it is appropriate to include within the DCO a provision for a defence against claims of statutory nuisance.

2.0 INTRODUCTION

2.1 Overview

2.1.1 This Statutory Nuisance Statement (Document Ref. 5.9) has been prepared on behalf of Net Zero Teesside Power Limited and Net Zero North Sea Storage Limited (the 'Applicants'). It forms part of 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, under section 37 of 'The Planning Act 2008' (the 'PA 2008').

2.1.2 The Applicants are seeking development consent for the construction, operation and maintenance of the Net Zero Teesside Project ('NZT'), including associated development (together the 'Proposed Development') on land at and in the vicinity of the former Redcar Steel Works site, Redcar and in Stockton-on-Tees, on Teesside (the 'Site'). The former Steel Works site, along with other land required for the Proposed Development, lies within the boundary of the land controlled by the South Tees Development Corporation ('STDC'), which is now known as 'Teesworks'.

2.1.3 A DCO is required for the Proposed Development as it falls within the definition and thresholds for a 'Nationally Significant Infrastructure Project' (a 'NSIP') under Sections 14(1)(a) and 15 of the PA 2008, associated development under Section 115(1)(b) and by direction under Sections 35(1) and 35ZA of the same Act. The DCO, if made by the SoS, would be known as the 'Net Zero Teesside Order' (the 'Order').

2.1.4 The Proposed Development will be the UK's first commercial scale, full chain Carbon Capture, Usage and Storage project and will initially capture up to 4 million tonnes (Mt) of carbon dioxide (CO₂) emissions per annum. It will comprise a number of elements, including a new gas-fired Electricity Generating Station with post-combustion carbon capture plant; gas, water and electricity connections (for the generating station); a CO₂ pipeline network (a 'gathering network') for collecting CO₂ from a cluster of local industries on Teesside; a CO₂ compressor station (for the compression of the CO₂) and a CO₂ export pipeline.

2.1.5 The CO₂ captured from the Electricity Generating Station and local industries will be compressed and then transported (via the export pipeline) for secure storage within the Endurance saline aquifer located 145 kilometres offshore from Teesside under the North Sea. The export pipeline has the capacity to carry up to 10Mt of CO₂ per annum. The Proposed Development will therefore make a significant contribution toward the UK reaching its greenhouse gas emissions target by 2050.

2.2 The Applicants

2.2.1 NZT encompasses proposals to both decarbonise electricity generation and a cluster of carbon intensive industries on Teesside. In line with the CCUS business models published by BEIS in December 2020, there will be separate entities who will be responsible for:

- electricity generation with post-combustion carbon capture (including the gas, water and electricity connections);

- CO₂ gathering (from industrial emitters), CO₂ compression and CO₂ export and storage; and
- industrial (including hydrogen production) carbon capture and connections to the CO₂ gathering network.

2.2.2 The entities are set out in Table 2.1 below:

Table 2.1: NZT Entities

Onshore works scope	Partnership	NZT Entity	Within the scope of the DCO Application?
Electricity Generating Station with post-combustion carbon capture (including the gas, water and electricity connections)	bp*, Eni, Equinor and Total	Net Zero Teesside Power Limited	Yes
CO ₂ gathering network, CO ₂ compression and the onshore section of CO ₂ export pipeline	bp*, Eni, Equinor, National Grid, Shell and Total	Net Zero North Sea Storage Limited	Yes
Industrial and hydrogen production carbon capture and connection to the CO ₂ gathering network	Individual industrial emitters	N/A	No

*Operator on behalf of the relevant Partnership

2.2.3 NZT is being promoted by Net Zero Teesside Power Limited ('NZT Power') and Net Zero North Sea Storage Limited ('NZNS Storage'). NZT Power and NZNS Storage (together the Applicants for the purposes of the DCO Application) have been incorporated on behalf of bp as operator of the two Partnerships.

2.2.4 The electricity generation with post-combustion carbon capture Partnership comprises bp, Eni, Equinor and Total, with bp leading as operator. NZT Power will be responsible for the Proposed Development in so far as it relates to the construction, operation and eventual decommissioning of the Electricity Generating Station together with its carbon capture plant (both within the scope of the DCO Application).

2.2.5 The CO₂ gathering network, CO₂ compression and onshore section of CO₂ export pipeline Partnership comprises bp, Eni, Equinor, National Grid, Shell and Total, with bp leading as operator. NZNS Storage will be responsible for the Proposed Development in so far as it relates to the construction, operation and eventual decommissioning of the equipment required for the high-pressure compression of CO₂ from the electricity generating station and industrial emitters via the CO₂

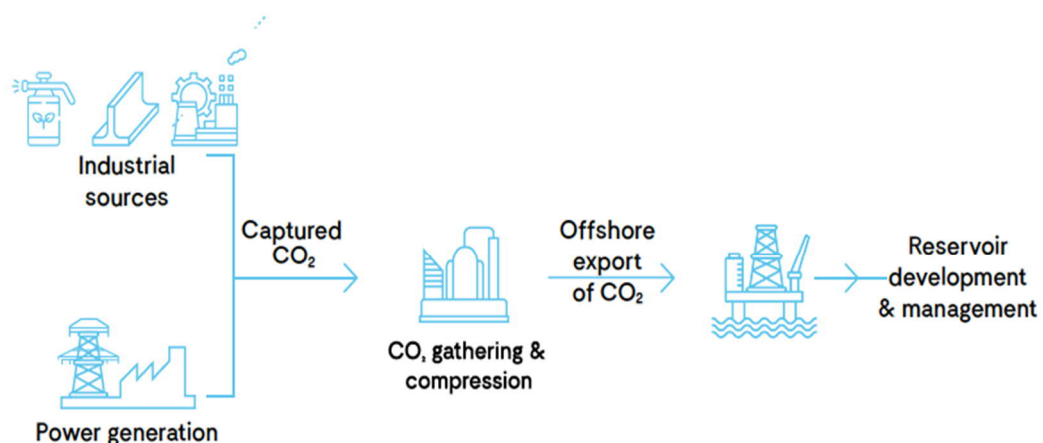
gathering network and the onshore section of the CO₂ export pipeline (these are all within the scope of the DCO Application).

2.2.6 NZNS Storage will also be responsible for the offshore elements of NZT, comprising the offshore section of the CO₂ export pipeline (below Mean Low Water Springs ('MLWS')) to a suitable offshore geological CO₂ storage site under the North Sea, CO₂ injection wells and associated infrastructure. The offshore elements of NZT (with the exception of the gas and CO₂ pipeline crossings of the River Tees and the water outfall from the Electricity Generating Station) do not form part of the DCO Application.

2.3 What is Carbon Capture, Usage and Storage?

2.3.1 Carbon Capture, Usage and Storage ('CCUS') is a process that removes CO₂ emissions at source, for example emissions from an Electricity Generating Station or industrial installation, and then compresses the CO₂ so that it can be safely transported to secure underground storage sites. It is then injected into layer of solid rock filled with interconnected pores where the CO₂ becomes trapped and locked in place, preventing it from being released into the atmosphere. Figure 2.1 below shows what is involved in the process.

Figure 2.1: CCUS Process



2.3.2 The technologies used in CCUS are proven and have been used safely across the World for many years. Storage sites are located several kilometres underground and are subject to stringent tests to ensure that they are geologically suitable. In the UK, it is expected that the storage sites will be located offshore, in areas such as the North Sea.

2.3.3 CCUS is one of a number of technologies that are crucial to reducing CO₂ emissions and combatting global warming. The UK Government has committed to achieving 'Net Zero' in terms of greenhouse gas emissions by 2050. This is a legally binding target.

2.4 The Site

2.4.1 The Site lies within the administrative boundaries of both Redcar and Cleveland Borough Council and Stockton-on-Tees Borough Council. It also partly lies within the boundary of the Teesworks area that is controlled by the STDC.

2.4.2 Most of the Site lies within the administrative area of Redcar and Cleveland Borough Council, although parts of Site (for the Electricity Generating Station's gas supply connection to the National Transmission System for gas and the CO₂ gathering network) cross the River Tees into the administrative area of Stockton-on-Tees Borough Council. At this location, the River Tees is tidal. In addition, there are elements of the Site which extend into South Gare, Coatham Sands and the North Sea. Those sections of the Site that are below MLWS are outside the jurisdiction of either local authority being part of the UK marine area.

2.4.3 The Site extends to approximately 462 hectares ('ha') in area. Much of it comprises previously developed (including part of the former Redcar Steel Works Site) and existing industrial land, some of which was reclaimed from the Tees Estuary in the late C19th and during the C20th. The Site is relatively flat and low-lying and sits at a level of between sea level and approximately 9 metres Above Ordnance Datum ('AOD'). The area surrounding the Site is largely characterised by industrial and commercial uses, although there are open areas of land to the north in the form of South Gare and Coatham Sands, which are used for recreational purposes and that are of nature conservation importance.

2.4.4 A more detailed description of the Site and its surroundings is provided at Chapter 3 'Description of the Existing Environment' in the Environmental Statement ('ES') Volume I (Document Ref. 6.2).

2.5 The Proposed Development

2.5.1 The Proposed Development will work by capturing CO₂ from the Electricity Generating Station in addition to a cluster of local industries on Teesside and transporting it via a CO₂ export pipeline to the Endurance saline aquifer under the North Sea. The Proposed Development will initially capture and transport up to 4Mt of CO₂ per annum, although the CO₂ export pipeline has the capacity to accommodate up to 10Mt of CO₂ per annum thereby allowing for future expansion.

2.5.2 The Proposed Development comprises the following elements:

- a combined cycle gas turbine ('CCGT') Electricity Generating Station with an electrical output of between 750 and 860 megawatts and post-combustion carbon capture plant;
- cooling water, gas and electricity grid connections and infrastructure for the Electricity Generating Station;
- a CO₂ gathering network (including connections under the tidal River Tees) to collect and transport the captured CO₂ from industrial emitters to a CO₂ compressor station (the industrial emitters using the gathering network will be

- responsible for consenting their own carbon capture plant and connections to the gathering network);
- a high-pressure CO₂ compressor station to receive and compress the captured CO₂ from the Electricity Generating Station and gathering network before it is transported offshore; and
 - a dense phase CO₂ export pipeline for the onward transport of the captured and compressed CO₂ to the Endurance saline aquifer under the North Sea.
- 2.5.3 The Electricity Generating Station, its post-combustion carbon capture plant and the CO₂ compressor station will be located on part of the STDC Teesworks area (on part of the former Redcar Steel Works Site). The CO₂ export pipeline will also start in this location before heading offshore. The Electricity Generating Station connections and the CO₂ gathering network will require corridors of land within both Redcar and Stockton-on-Tees, including crossings beneath the River Tees.
- 2.5.4 All of the above elements are included in the scope of the DCO Application, with the exception of the CO₂ export pipeline, where only the onshore section of pipeline above MLWS is included. The CO₂ export pipeline below MLWS and the CO₂ storage site under the North Sea (the Endurance saline aquifer) will be the subject of separate consent applications, including under the Petroleum Act 1998 and the Energy Act 2008. These applications will be supported by an Offshore Environmental Statement.
- 2.5.5 The ancillary development required in connection with and subsidiary to the above elements of the Proposed Development is detailed in Schedule 1 of the draft DCO (Document Ref. 2.1). A more detailed description of the Proposed Development is provided at Schedule 1 'Authorised Development' of the draft DCO and Chapter 4 'The Proposed Development' in ES Volume I (Document Ref. 6.2) and the areas within which each of the main elements of the Proposed Development are to be built are denoted by the coloured and hatched areas on the Works Plans (Document Ref. 4.4).
- 2.6 The Purpose and Structure of this Document
- 2.6.1 The purpose of this document is to comply with Regulation 5(2)(f) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (APFP Regulations), which states that any application for development consent should be accompanied by a statement setting out whether the development proposal could cause a statutory nuisance pursuant to Section 79(1) of the EPA 1990. If such a nuisance could occur, the statement must set out how the applicant proposes to mitigate or limit the effects.
- 2.6.2 Paragraph 4.14.1 of the 'Overarching National Policy Statement for Energy EN1' (Department for Energy and Climate Change, 2011) states:
- "Section 158 of the Planning Act 2008 confers statutory authority for carrying out development or doing anything else authorised by a DCO. Such authority is conferred only for the purpose of providing a defence in any civil or criminal proceedings for nuisance. This would include defence for proceedings for nuisance under Part III of*

the EPA 1990 (statutory nuisance) ... but only to the extent that the nuisance is the inevitable consequence of what has been authorised. The defence does not extinguish the local authority's duties under Part III of the EPA to inspect its area and take reasonable steps to investigate complaints of statutory nuisance and to serve abatement notice where satisfied to its existence, likely occurrence or recurrence. The defence is not intended to extend to proceedings where the matter is 'prejudicial to health' and not a nuisance."

- 2.6.3 Paragraph 4.14.2 goes on to state that it is very important that at the application stage, the Secretary of State considers sources of nuisance under Section 79(1) of the EPA 1990 and how these may be mitigated or limited, so that appropriate 'requirements' can be included in any DCO that is granted.
- 2.6.4 Whilst, as this document demonstrates, it is not expected that the construction, operation (including maintenance) and decommissioning of the Proposed Development would cause a statutory nuisance, the draft DCO accompanying the Application contains a provision that would provide a defence to proceedings in respect of statutory nuisance (in respect of Section 79(1) of the EPA 1990 (statutory nuisances and inspections therefor.)), subject to certain criteria.
- 2.6.5 This document first describes the legislative context for the identification of matters which constitute statutory nuisance and the methodology for the assessment of these. This is followed by a summary of the assessment of the statutory nuisances, using information from the ES (Document Refs. 6.1 - 6.4), including any relevant mitigation measures and residual effects, whether embedded within the design of the Proposed Development or additional mitigation secured through requirements within the DCO.
- 2.6.6 Unless otherwise stated, decommissioning effects are considered to be comparable to or less than those associated with construction of the Proposed Development for all relevant matters, for the reasons set out in the ES. Specific impact assessments undertaken for the proposed development, including those for air quality, noise and vibration, surface water and hydrology and landscape, conclude that relevant best practice mitigation measures would be in place during any decommissioning works, and no additional mitigation has been identified as necessary for the decommissioning phase of the Proposed Development.

3.0 IDENTIFICATION AND ASSESSMENT OF STATUTORY NUISANCE

3.1 Legislative Framework

3.1.1 Section 79(1) of the EPA 1990 identifies the matters which are considered to be statutory nuisance as follows:

- a) any premises in such a state as to be prejudicial to health or a nuisance;*
- b) smoke emitted from premises so as to be prejudicial to health or a nuisance;*
- c) fumes or gases emitted from premises so as to be prejudicial to health or a nuisance;*
- d) any dust, steam, smell or other effluvia arising on industrial, trade or business premises and being prejudicial to health or a nuisance;*
- e) any accumulation or deposit which is prejudicial to health or a nuisance;*
- f) any animal kept in such a place or manner as to be prejudicial to health or a nuisance;*
- fa) any insects emanating from relevant industrial, trade or business premises and being prejudicial to health or a nuisance;*
- fb) artificial light emitted from premises so as to be prejudicial to health or a nuisance;*
- g) noise emitted from premises so as to be prejudicial to health or a nuisance;*
- ga) noise that is prejudicial to health or a nuisance and is emitted from or caused by a vehicle, machinery or equipment in a street [or in Scotland, road]; and*
- h) any other matter declared by any enactment to be statutory nuisance."*

3.2 Assessment of Significance

3.2.1 The ES (Document Ref. 6.1 - 6.4) for the Proposed Development addresses the likelihood of significant effects arising and provides sufficient information to identify whether they could constitute a statutory nuisance, as identified in Section 79(1) of the EPA.

3.2.2 ES Volume I Chapter 4: The Proposed Development (Document Ref. 6.2) and the Framework Construction Environmental Management Plan (CEMP) presented as Appendix 5A in ES Volume III (Document Ref. 6.4) describe impact avoidance measures embedded to the proposed design and methods of construction, which address the potential statutory nuisances defined in paragraph 2.1 of this document.

3.2.3 ES Volume I Chapter 7: Air Quality, Chapter 11: Noise and Vibration, Chapter 16: Traffic and Transport and Chapter 17: Landscape and Visual Amenity (Document Ref. 6.2) and their associated appendices (Document Ref. 6.4), where relevant, provide detailed assessments of these potential statutory nuisances and identify mitigation measures where necessary.

- 3.2.4 The ES provides an assessment of the potential effects on receptors as negligible, minor, moderate or major. Moderate and major effects are considered to be significant for the purposes of the Environmental Impact Assessment (EIA).
- 3.2.5 Potential nuisance aspects are considered in Section 3 below and through embedded mitigation, no statutory nuisance is considered likely to occur.

4.0 POTENTIAL NUISANCE IMPACTS

- 4.1.1 This section discusses the nuisance impacts set out in the EPA 1990 in relation to the Proposed Development and summarises the embedded and additional mitigation measures that will be applied to prevent these.
- 4.2 EPA 1990 Section 79(1) a) Any Premises in Such a State as to be Prejudicial to Health or a Nuisance
- 4.2.1 The EPA describes a potential statutory nuisance to be caused by “any premises in such a state as to be prejudicial to health or a nuisance”.
- 4.2.2 This has been considered in terms of Landscape and Visual Amenity Impact which can result from poor maintenance or housekeeping.
- 4.2.3 The assessment of effects on landscape and visual amenity is presented in Chapter 17 of ES Volume I (Document Ref. 6.2).
- 4.2.4 The ES concludes that due to the existing industrial character of the Proposed Development the effects on the existing landscape will be low and will not be sufficient to result in an inherent change to the existing landscape character at a local scale, and negligible at a regional or national scale. The Proposed Development is likely to result in a significant effect on visual amenity during its the construction and operation from several viewpoints as a result of the close distance and lack of intervening vegetation. However, due to the size and massing of the structures no specific mitigation measures are proposed.
- 4.2.5 While a significant adverse effect is assessed to occur from various viewpoints around the site during the construction phase, as a result of the close distance and limited intervening vegetation, the impact on receptors at South Gare Breakwater (Viewpoint 5) and Redcar Seafront (Viewpoint 8) would reduce to being not significant during the operational phase of the Proposed Development. The impact along the England Coastal Path (Viewpoint 7) is concluded to remain significant during operation due to the close proximity and prominence of structures associated with the Proposed Development.
- 4.2.6 Statutory nuisance as a result of poor housekeeping or maintenance, could only occur if poor levels of housekeeping or maintenance are in place for example. Therefore, the impacts on the sensitive receptors in the vicinity of the Proposed Development are not considered to constitute a statutory nuisance.
- 4.2.7 To minimise the risk of any such statutory nuisance from occurring through poor maintenance or housekeeping, operational and management controls will be put in place, such as the establishment of a preventative maintenance plan, regular housekeeping inspections, waste management procedures and compliance with the requirements of the Environmental Management System (EMS) and Environmental Permit for the Proposed Development. These measures are described in ES Volume I Chapter 4: The Proposed Development (Document Ref. 6.2).

4.3 EPA 1990 Section 79(1) b) Smoke Emitted from Premises so as to be Prejudicial to Health or a Nuisance, c) Fumes or Gases Emitted from Premises so as to be Prejudicial to Health or a Nuisance

4.3.1 No smoke is expected to be generated from the Proposed Development during normal operation. Fumes and gases that may be relevant are considered in the following sections.

Construction Phase

4.3.2 The Study Area for construction dust and Non-Road Mobile Machinery (NRMM) emissions has been applied, in line with IAQM guidance (2014), extending up to 350 m beyond the Site boundary and 50 m from the construction traffic route (up to 500 m from the Site entrances), for human health receptors; and up to 50 m from the Site boundary and/ or construction traffic route (up to 500 m from the Site entrances) for ecological receptors.

4.3.3 The effects on receptors potentially affected by the exhaust emissions associated with construction phase vehicle movements were concluded to be negligible adverse. Additional mitigation measures are therefore not required.

Operational Phase

4.3.4 The pollutants considered within the assessment of air emissions for the main stacks in ES Volume I Chapter 8: Air Quality (Document Ref. 6.2) are primarily those prescribed within the Industrial Emissions Directive (IED). These are:

- oxides of nitrogen (NO_x), expressed as nitrogen dioxide (chemical formula NO₂);
- carbon monoxide (chemical formula CO); and
- amines (as nitramines and nitrosamines).

4.3.5 Emissions of the following pollutants not included within the IED are also considered:

- ammonia (chemical formula NH₃); and
- particulate matter (as PM_{2.5} size fraction).

4.3.6 Of the pollutants listed above, the primary pollutants of interest in relation to the impacts due to emissions from the Proposed Development and road traffic are nitrogen dioxide and particulate matter (PM₁₀ and PM_{2.5} size fractions).

4.3.7 The potential impacts and mitigation for nuisance from smoke, fumes, gases, dust, steam, smells, other effluvia, accumulations and deposits are discussed as part of the air quality impact assessment presented in ES Volume I Chapter 8: Air Quality (Document Ref. 6.2).

4.3.8 The Study Area for the operational development point source emissions extends up to 10 km from the Site, in order to assess the potential impacts on sensitive human health and ecological receptors, in line with the Environment Agency risk assessment methodology (Department for Environment, Food and Rural Affairs and Environment

Agency, 2016). However, in practice the predicted impacts become negligible at a much smaller distance from the Site (circa 2 km).

- 4.3.9 The Proposed Development will be designed and operated to meet the requirements of the IED and LCPD, and its operations will be strictly regulated by the Environment Agency under an Environmental Permit. It will be operated and maintained in accordance with a preventative maintenance programme.
- 4.3.10 The impacts of all pollutant species released from the operational Proposed Development are predicted to result in negligible adverse effects at all receptors within the Study Area, except for N-amines (based on the initial screening assessment undertaken). Impact of NO₂, CO, NH₃ and amines can therefore be considered to be not significant at all human health receptors.
- 4.3.11 Exhaust emissions will be monitored by a Continuous Emissions Monitoring system (CEMs) and typically discharged to atmosphere through a stack, situated above the absorber building, circa 115 m above finished ground level. In the event that the carbon capture plant is not operational, flue gas will be discharged via a secondary stack on the HRSG. The exhaust emissions will comply with the required BAT-AELs (where specified).
- 4.3.12 Flue gas will be emitted with a velocity of above 15 m/s. Combined with the thermal buoyancy of the warm gas, the flue gases will rise before becoming dispersed.
- 4.3.13 The CEMs sampling points and non-continuous sampling points will be located according to the requirements of the IED and the Environment Agency Technical Guidance Notes M1 'Sampling Requirements for stack emission monitoring' (Environment Agency, 2017a) and M2 'Monitoring of stack emissions to air' (Environment Agency, 2017b).
- 4.3.14 Fugitive emissions will be minimised through appropriate design and operation of the Proposed Development.
- 4.3.15 No detailed assessment of operational traffic emissions has been made, as the numbers of additional vehicles associated with the operational phase of the Proposed Development are below the DMRB and IAQM screening criteria for requiring such assessment.

Decommissioning Phase

- 4.3.16 Decommissioning effects are considered to be similar to construction effects outlined above. No additional mitigation has been identified as necessary for the decommissioning phase of the Proposed Development.

- 4.4 EPA 1990 Section 79(1) d) Any Dust, Steam, Smell or Other Effluvia Arising on Industrial, Trade or Business Premises and Being Prejudicial to Health or a Nuisance, and e) Any Accumulation or Deposit which is Prejudicial to Health or a Nuisance

Dust, Accumulations and Deposits

- 4.4.1 The scale and nature of the Proposed Development and activities associated with construction and operation have the potential to produce dust. 'Dust' is defined in British Standard 6069-2:1994 (British Standards Institute, 1994) as particulate matter in the size range 1 µm – 75 µm (microns) in diameter and is primarily composed of mineral materials and soil particles. If emitted at high concentrations this could theoretically be transported to local receptors.
- 4.4.2 Anticipated dust, accumulations and deposits from construction, operations (including maintenance works) and decommissioning activities at the Proposed Development are described below.

Construction Phase

- 4.4.3 The magnitude of effects for dust and Non-Road Mobile Machinery (NRMM) emissions during construction has been determined as 'negligible' for earthworks and construction activities, and 'medium' for track-out activities (see ES Volume I Chapter 8: Air Quality (Document Ref. 6.2)). The area sensitivity has been judged to be 'low', whilst the area sensitivity to ecological dust impacts is considered to be 'medium', on account of the distance from the activity source to the receptors, and the existing low background concentration particulates (10 µg/m³ for PM₁₀ and 6.9 µg/m³ for PM_{2.5}).
- 4.4.4 Construction activities are very well understood in the UK and good industry practice measures are well-established and generally successful. The ES concludes that during construction of the Proposed Development, in the absence of mitigation, there would be potential for:
- low to medium risk of impacts from dust soiling during earthworks, construction, and track-out; and
 - low risk of impacts to human health from PM₁₀ during earthworks, construction, and track-out.
- 4.4.5 Emissions of dust and particulates from the construction phase of the Proposed Development will be controlled in accordance with industry best practice, through incorporation of appropriate control measures according to the risks posed by the activities undertaken, as determined through this assessment process. The management of dust and particulates and application of adequate mitigation measures will be enforced through the CEMP (see Appendix 5A, ES Volume III, Document Ref. 6.4)).
- 4.4.6 During the earthworks and construction phase, based on IAQM guidance (2014), the effects on receptors potentially affected by dust soiling and short-term concentrations of PM₁₀ generated during construction activities were concluded to

have 'low to medium risk' for human health receptors, and 'medium to high risk' for ecological receptors. Therefore, mitigation measures appropriate to the scale of perceived risk would be applied as part of the CEMP. A Framework CEMP is presented as Appendix 5A (ES Volume III, Document Ref. 6.4). A detailed CEMP will be prepared in accordance with the framework CEMP.

4.4.7 Appropriate standard and best practice control measures will be included in the detailed CEMP, but not be limited to application of the following best practicable means as far as reasonably practicable, which may include:

- application of good practice dust management techniques;
- maintaining and operating vehicle engines to achieve European and UK Emissions Standards;
- avoiding roughening of concrete surfaces where possible;
- storing sand and aggregates in bunded areas;
- prohibiting open fires on Site;
- minimising storage duration of top soil or spoil during construction;
- using water suppression to minimise dust formation;
- using regular cleaning to minimise mud on road;
- covering any potentially dusty loads of waste or spoil in vehicles leaving the Site; and
- restricting the use of unmade roads and employing wheel wash systems at Site exits.

Operational Phase

4.4.8 The operation of the Proposed Development in accordance with the IED and Environmental Permit, the activities of the operation and maintenance teams, the implementation of formal operating procedures and the installation and operation of automated controls, will minimise the potential for statutory nuisance from atmospheric emissions.

4.4.9 For the operational assessment, the impact of point source emissions at human health receptors has been determined from isopleth figures of pollutant dispersion and maximum model output at discrete receptor locations.

4.4.10 Of the pollutants emitted from the Proposed Development and road traffic, the primary pollutants of interest in relation to the impacts from road traffic emissions are NO₂ and particulate matter (PM₁₀ and PM_{2.5} size fractions). The ES concludes that the effect of emissions from road traffic during operation of the Proposed Development would be negligible.

4.4.11 The assessment concludes that the plant design will provide sufficient mitigation and additional mitigation measures are not required. No significant effects were identified within the assessment.

Decommissioning Phase

- 4.4.12 Decommissioning effects are considered to be similar to construction effects outlined above.

Visual Plume (Steam)

- 4.4.13 It is envisaged that there will not be any visible plumes (steam) during the construction and decommissioning phases. The likelihood and mitigation measures for visible atmospheric emissions of steam during the operational phase of the Proposed Development are discussed below.
- 4.4.14 Chapter 8: Air Quality (ES Volume I, Document Ref. 6.2) provides an assessment of the frequency of a visual plume. The visibility of an atmospheric plume is due to the relative humidity of the exit gas and is the visual condensation of water vapour. Despite not being suggestive of atmospheric pollutant levels, it can be perceived as being linked by some people. It also increases the Proposed Development's visual footprint on the skyline.
- 4.4.15 Emissions of steam from the Proposed Development stack will be minimised by controlling the combustion conditions. The concept design of the plant specifies that the stack gas temperature will be maintained above 140°C, which is the temperature specified in EU Guidance as being above the dew point of the gas so as to minimise visible plume emissions. The plume visibility implications have been considered as part of the BAT assessment for the Proposed Development and concluded to not have a significant impact.
- 4.4.16 As discussed in in ES Volume III Chapter 8B: Air Quality (Document Ref. 6.4) and ES Volume I Chapter 17: Landscape and Visual Amenity (Document Ref. 6.2), the 'average' visible plume length is expected to be 42 m with plumes visible for up to 72% of the time. The longest plume can be expected to extend for 2,348 m with plumes over 115 m visible 9% of the time on average.

Smells

- 4.4.17 It is envisaged that there will not be any odour emissions during the construction and decommissioning phases. Odour sources and mitigation measures to be implemented during the operational phase of the Proposed Development are discussed below.
- 4.4.18 Several potential odour release sources have been identified; predominantly around storage and handling of some of the process residues, chemicals and reagents which are required to mitigate operational stack emissions are also a potential source of odour if experienced at high concentrations.
- 4.4.19 Odour could potentially be generated through the receipt and handling of ammonia/urea and amines at the Proposed Development. The presence of an odour may cause annoyance and depends on a number of factors that vary between individuals. Odour events may only last a few seconds but could cause annoyance if they frequently recur or are perceived to be particularly offensive.

-
- 4.4.20 It is considered that appropriate storage and handling procedures will be implemented at the Proposed Development. It is further considered that the largely industrial setting of the Proposed Development will also support a lower impact on the nearby receptors.
- 4.4.21 An Odour Management Plan is therefore not considered to be required. Odour levels around the plant will be regularly monitored by site management to assess the effectiveness of the installed odour control measures.
- 4.5 EPA 1990 Section 79(1) f) Any Animal Kept in Such a Place or Manner as to be Prejudicial to Health or a Nuisance
- 4.5.1 No animals will be kept at the Site.
- 4.6 EPA 1990 Section 79(1) fa) Any Insects Emanating from Premises so as to be Prejudicial to Health or a Nuisance
- 4.6.1 Due to the operational nature of the Proposed Development, it is not considered to be a suitable habitat for vermin based on experience of other similar developments.
- 4.6.2 Litter on site has the potential to attract vermin or be blown into neighbouring properties. Regular inspections of the Site, boundary fence, gates and access road in the immediate vicinity of the facility entrance will be carried out. Staff will be encouraged to correctly dispose of litter as part of the site rules and site induction.
- 4.6.3 Pests and vermin are therefore not expected to create a statutory nuisance.
- 4.6.4 Due to the nature of the process, no insects are expected to emanate from the Proposed Development or be attracted to it.
- 4.7 EPA 1990 Section 79(1) fb) Artificial Light Emitted from Premises so as to be Prejudicial to Health or a Nuisance
- 4.7.1 An Indicative Lighting Strategy has been prepared (Document Ref. 5.11) and prior to the commissioning of the Proposed Development a detailed lighting scheme will be submitted to Redcar and Cleveland Borough Council for approval, covering construction and operational effects. The external lighting scheme will be designed in accordance with relevant standards, such as the Guidance Notes for the Reduction of Obtrusive Light published by the Institute of Lighting Engineers (2020) and/ or Chartered Institution Building Services Engineers (CIBSE) requirements – as appropriate.
- 4.7.2 The external lighting scheme will be designed to provide safe working conditions in all areas of the Site whilst reducing light pollution and the visual impact on the local environment. This is likely to be achieved by the use of luminaires that eliminate the upward escape of light.
- 4.7.3 The lighting required during the construction and operation stages of the Proposed Development will be designed to reduce unnecessary light spill outside of the Site boundary.

- 4.7.4 Construction temporary site lighting is proposed to enable safe working on the construction site in hours of darkness. Construction temporary lighting will be arranged so that glare is minimised outside the construction site.
- 4.7.5 Artificial light is not expected to cause a statutory nuisance.
- 4.8 EPA 1990 Section 79(1) g) Noise Emitted from Premises so as to be Prejudicial to Health or a Nuisance, and ga) Noise that is Prejudicial to Health or a Nuisance and is Emitted from or Caused by a Vehicle, Machinery or Equipment in a Street
- 4.8.1 Through noise prediction modelling undertaken, the ES Volume I Chapter 11: Noise and Vibration (Document Ref. 6.2) concludes there would be minor adverse or negligible adverse effects relating to the following activities of the Proposed Development:
- daytime construction noise effects;
 - potential vibration levels from piling during construction;
 - construction traffic noise;
 - daytime and night-time noise during operation;
 - operational traffic noise; and
 - decommissioning.
- 4.8.2 As no significant noise effects are predicted to occur at residential receptors, no additional mitigation is required.
- 4.8.3 However, best practice methods will be applied during construction, operation (including maintenance) and decommissioning to minimise noise.

Construction Phase

- 4.8.4 During construction, the construction contractor will follow Best Practicable Means to reduce noise and vibration impacts. Best Practicable Means include the following (where practicable):
- all construction plant and equipment will comply with national and EU noise emission limits;
 - proper use of plant with respect to minimising noise emissions – all vehicles and mechanical plant will be fitted with effective exhaust silencers and maintained in good efficient working order;
 - selection of inherently quiet plant where appropriate – for example and where practicable major compressors will be ‘sound reduced’ models fitted with properly lined and sealed acoustic covers which will be kept closed whenever the machines are in use, and all ancillary pneumatic percussive tools will be fitted with mufflers or silencers of the type recommended by the manufacturers;
 - machines in intermittent use will be shut down in the intervening periods between work or throttled down to a minimum;

- materials should be handled with care and be placed, not dropped. Materials should be delivered during standard working hours where possible; and
- all ancillary plant such as generators, compressors and pumps will be positioned so as to cause minimum noise disturbance, i.e. furthest from receptors or behind close boarded noise barriers; if necessary, acoustic enclosures will be provided and/or acoustic shielding.

Operational Phase

- 4.8.5 During operation the following best practice methods to reduce noise impacts will be considered during the detailed design of the Proposed Development, including:
- the selection of quiet plant to reduce noise emissions;
 - the selection of external cladding that provides a weighted sound reduction;
 - the selection of louvres/ baffles that provide a weighted sound reduction;
 - if necessary, provision of acoustic treatment to the stack – the stack is the dominant source contributor to the overall noise levels, therefore providing acoustic attenuation to the stack will help to reduce the overall predicted noise levels; and
 - if necessary, provision of cladding, louvres/baffles, silencers and air inlets to reduce tonal noise from the Proposed Development during its operation.
- 4.8.6 Noise emissions from the Proposed Development are therefore not anticipated to represent a statutory nuisance.

Decommissioning Phase

- 4.8.7 Decommissioning effects are considered to be similar to construction effects outlined above, unless specified otherwise.
- 4.9 EPA 1990 Section 79(1) h) Any Other Matter Declared by any Enactment to be a Statutory Nuisance

Traffic and Abnormal Loads

- 4.9.1 Traffic and the effect of abnormal loads during construction, operation (including maintenance) and decommissioning of the Proposed Development have been assessed and is reported in ES Volume I Chapter 16: Traffic and Transport (Document Ref. 6.2).
- 4.9.2 A Framework Construction Traffic Management Plan has been developed for the Proposed Development to detail how traffic will be managed (see ES Volume III, Appendix 9A: Transport Assessment (Document Ref. 6.4)).
- 4.9.3 No significant adverse effects on other road users have been identified.

5.0 CONCLUSIONS

5.1 Potential for Nuisance

5.1.1 This Statement has identified the matters set out in Section 79(1) of the EPA 1990 in respect of statutory nuisance and considers whether the Proposed Development could cause a statutory nuisance.

5.1.2 Potential nuisance aspects have been considered in Section 4 of this Statement and through embedded mitigation no statutory nuisance effects are considered likely to occur.

5.1.3 The operation of the Proposed Development would be regulated by the Environment Agency through an Environmental Permit and would undergo regular monitoring and reporting. Embedded mitigation and appropriate controls will be secured by appropriate DCO requirements. As a result, it is not expected that the construction, operation, maintenance or decommissioning of the Proposed Development would engage Section 79(1) and give rise to any statutory nuisance under the EPA 1990.

6.0 REFERENCES

British Standards Institute (1994) BS 6069-2:1994 - Characterisation of air quality. Glossary.

British Standards Institute (1998) ISO 140-4: Acoustics. Measurement of sound insulation in buildings and of building elements. Field measurements of airborne sound insulation between rooms.

Department for Energy and Climate Change (2011) Overarching National Policy Statement for Energy EN-1.

Department for Environment, Food & Rural Affairs and Environment Agency (2016) Risk assessments for your environmental permit. Available from:
<https://www.gov.uk/guidance/risk-assessments-for-your-environmental-permit>

Environment Agency (2013) CHP Ready Guidance for Combustion and Energy from Waste Power Plants. Available from:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/296450/LIT_7978_e06fa0.pdf

Environment Agency (2017a) Technical Guidance Note (Monitoring) M1: Sampling requirements for stack emission monitoring. Version 8. Available from:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/635269/LIT_4736.pdf

Environment Agency (2017b) (withdrawn December 2019). Technical Guidance Note (Monitoring) M2: Monitoring of stack emissions to air. Available from:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/854060/LIT_6405.pdf

European Commission (2010) Directive 2010/75/EU on industrial emissions (integrated pollution prevention and control (Recast)) (Industrial Emissions Directive (IED)).

Institute of Air Quality Management (IAQM) (2014) Guidance on the assessment of dust from demolition and construction. Version 1.1.

Institution of Lighting Professionals (2020) Guidance Note 01 for the Reduction of Obtrusive Light. (Online). Available at: <https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2020/>