REDCAR ENERGY CENTRE

Non-Technical Summary

OXF11366
Draft
17 July 2020

rpsgroup.com

Contents

Tables

Figures

1 INTRODUCTION

1.1.1 This document is the Non-Technical Summary of the Environmental Statement for Redcar Energy Centre (the proposed development) on land at the former Teesside Steel works at Redcar, North Yorkshire. The Non-Technical Summary has been produced by RPS on behalf of Redcar Holdings Limited (the Applicant).

1.1.2 The Application Site occupies an area of industrial land adjacent to the redundant Teesside Steel Works. The site location is shown on Figure 1.

1.1.3 Taking into account the nature and scale of the development proposed, a process of Environmental Impact Assessment has been undertaken in accordance with UK legal requirements to identify the likely significant environmental effects of the proposed development. An Environmental Statement has been prepared, setting out the findings of the assessment process. The Environmental Statement accompanies a planning application submitted to Redcar and Cleveland Borough Council.

1.1.4 This summary document provides an overview of the assessment findings. Details of how to view the full Environmental Statement or to obtain further copies of this Non-Technical Summary are provided at the end of this document

2 THE PROPOSED DEVELOPMENT

2.1 The Site and Surrounding area

2.1.1 The Application Site is located approximately 4.5 km west of Redcar town centre and 8.5km north east of Middlesbrough city centre (see Figure 1– Site Location Plan).

2.1.2 The Application Site occupies an area of approximately 10.1 ha of industrial land. The north and north eastern boundaries of the Application Site are delineated by an earth bund 2-3 metres high. Beyond the earth bund, to the north and north-east, lies Coatham Sands and an area of reclaimed land known as South Gare, which separates the Application Site from Bran Sands.

2.1.3 The south western boundary of the site is bordered by an access road for the Redcar Bulk Terminal (and the Application Site). The surrounding landscape to the south, east and west is heavily dominated by industrial, distribution and storage activities.

2.1.4 The Application Site is directly adjacent to the Teesmouth and Cleveland Coast Site of Special Scientific Interest (SSSI) which borders the site to the north, which is important for its coastal habitats. The Teesmouth and Cleveland Coast Special Protection Area (SPA) and Ramsar is located approximately 80 metres from the site boundary and supports internationally important numbers of wintering and breeding birds.

2.1.5 Other ecologically important sites in the local area include Saltholme Nature Reserve on Bran Sands approximately 109 metres to the north; Seaton Dunes and Common Local Nature Reserve located 2.7km to the north west on the opposite side of the Tees Estuary; and the Teesmouth National Nature approximately 1.5km to the west of the Application Site again, on the opposite side of the Tees Estuary.

2.1.6 Further afield the Northumbria Coast SPA and SSSI is approximately 15km to the north west of the development site, and the North York Moors SPA, Special Area of Conservation (SAC), SSSI and National Park is approximately 14km to the south.

2.1.7 The nearest residential receptor is an isolated dwelling located approximately 2.3km to the east of the Application Site at Marsh Farm on the western edge of Warrenby. The closest more densely populated areas to the Application Site are located approximately 3km to the south east on Broadway West, Dormanstown and 3km to the east of the site along York Road, Coatham.

2.1.8 The Teesdale Way runs through the sand dunes along the coast to the north. It forms part of the long-distance walk route from the Cumbrian Pennines to the North Sea, terminating close to Redcar at South Gare Breakwater to the north of the Application Site. The England Coast Path is long distance National Trail around the coast of England. Its closest point to the Application Site is over 2km to the east within Cleveland Golf Course.

2.1.9 The nearest heritage receptor is the Grade II listed South Gare Lighthouse approximately 2.2km to the north of the Application Site. There are also three Grade II buildings located 2.3km to the east of the development site at Marsh Farm.

2.1.10 The environmental features listed above are shown on Figure 3.

2.2 Description of the Development

2.2.1 The Application Site is broadly rectangular in shape with the exception of the access road and the northern part of the site, which is defined by the existing shape of the coastline.

2.2.2 The proposed development includes the following key components:

- a Materials Recovery Facility incorporating a Bulk Storage Facility;
- an Energy Recovery Facility; and
- an Incinerator Bottom Ash Recycling Facility.

2.2.3 The three operational components split the Application Site into three distinct areas: the Material Recovery Facility to the west, the Energy Recovery Facility occupying the area to the east, and the Incinerator Bottom Ash Recycling Facility to the north.

Material Recovery Facility

2.2.4 The Materials Recovery Facility would receive up to 200,000 tonnes per annum (tpa) of Municipal Solid Waste, and/ or Commercial and Industrial waste. The facility would separate, recover and store the waste, sorting it into recyclable and non-recyclable materials.

2.2.5 The recyclable material would be reprocessed into products, materials or substances for their original uses or new ones as part of the circular economy. The non-recyclable materials left behind (residual waste) would be processed into waste fuel (or Refused Derived Fuel) which can be used in the attached Energy Recovery Facility or in the wider economy.

2.2.6 As part of the proposed Materials Recycling Facility, a dedicated Bulk Storage Facility would be provided where unprocessed and processed recyclable materials, residual waste and Refused Derived Fuel can be stored and/ or bulked up to be transported off-site.

2.2.7 The process equipment would be wholly enclosed within the Materials Recovery Facility building.

Energy Recovery Facility

2.2.8 The proposed Energy Recovery Facility would recover energy from residual waste comprising of mixed Commercial & Industrial waste, Municipal Solid Waste; and / or Refused Derived Fuel using a two-line process. It would be capable of generating up to 49.9 Mega Watts of electricity from up to 450,000 tonnes per annum of waste. The mixed waste stream would have a predicted average net calorific value of 9.2 MJ/kg.

2.2.9 The precise sources of treated waste fuel have yet to be determined as they would be subject to securing commercial contracts.

2.2.10 The electricity generated by the Energy Recovery Facility would be provided:

- directly to the National Grid and/or
- directly by private wire agreement to existing and future planned business in the South Tees Development Corporation area, including users such as advance manufacturing which are classed as energy intensive users.

2.2.11 In addition, the proposed Energy Recovery Facility would be a Combined Heat and Power ready facility to ensure that where possible, it would be capable of exporting energy to end users with minimal modification should future plans change.

2.2.12 It is likely that waste would be brought to the Application Site along the existing highway network and infrastructure by heavy goods vehicles (HGVs) with a minimum load of 6 tonnes. In addition, where feasible waste may also be brought to the Application Site through the existing rail and port infrastructure in the area.

2.2.13 The process equipment to convert waste to energy would be enclosed within buildings. The main Energy Recycling Facility building would be divided into several operational areas, relating to different functions. These include:

- waste reception and storage;
- combustion of waste; and
- energy recovery.

2.2.14 The gases that are produced during the combustion of waste would undergo appropriate treatment to meet the strict limits set under the EU Industrial Emissions Directive (Council Directive 2010/75/EU), before being released to atmosphere via the stack. This would be enforced by the Environment Agency through the Environmental Permit. The flue gas treatment system would be subject to the assessment of Best Available Techniques, which is a requirement of the Environmental Permitting Regulations process.

Incinerator Bottom Ash Recycling Facility

2.2.15 Incinerator Bottom Ash is the incombustible material from the combustion process, approximately equivalent to 25% of the weight of the waste treated (112,500 tonnes per annum).

2.2.16 The Incinerator Bottom Ash Recycling Facility would allow the material to be managed as a resource; this allows it to be recovered and recycled rather being classified as waste.

2.2.17 The Incinerator Bottom Ash Recycling Facility would include the infrastructure that is required to receive, store and process the Incinerator Bottom Ash along with producing recyclable metals and creating secondary aggregate material which can be used in construction.

Access and Parking

2.2.18 Access to the Application Site is via a series of internal access roads which serve the industrial area. The internal road merges with the A1085 Trunk Road as a single road via a roundabout approximately 2.7km to the south east of the Application Site. The A1085 provides a strategic access to Middlesbrough and beyond to the north and south via the A19.

2.2.19 Traffic access and movement around the Application Site has been designed to ensure efficiency, and to maximise vehicle and pedestrian safety. Designated internal access routes have been included in the design and would be used by all waste delivery vehicles, maintenance vehicles and vehicles delivering/removing materials from the Application Site. All routes would be hard surfaced and appropriately maintained.

2.2.20 Staff and visitor traffic would be segregated from HGV traffic on site. A separate car park with 41 car parking spaces would be provided in front of the Materials Recovery Facility, giving pedestrian access to the office building. 50 car parking spaces are provided to the side of the Energy Recovery Facility giving direct pedestrian access to the Office element incorporated into the building. Cycle parking would also be provided for both staff and visitors compromising of 12 cycle spaces, with more to be made available on demand.

Appearance

2.2.21 Redcar Energy Centre would comprise a series of buildings, the size and design of which is governed by the technical equipment they contain. However, the layout, massing and colours of the buildings have been designed to reduce its overall landscape and visual impact.

Landscape Strategy

2.2.22 The proposed development includes a landscaping scheme. The scheme would be in-keeping with the surrounding habitats and the proposed planting would be sympathetic to the adjacent coastal

dune system. The landscaping strategy would include planting along the northern boundary of the Application Site as well as around and between the car parks and office entrances. An attenuation pond would be provided in the north of the Application Site that would form part of the proposed drainage strategy. It is intended that the planting on the northern boundary and the attenuation pond would act as a natural buffer to the adjacent Site of Special Scientific Interest. This natural buffer area would be protected from activity on site by a 5m concrete wall along the edge of the Incinerator Bottom Ash Recycling Facility Area. The wall would be set back from the base of the existing bund to protect the integrity of the bund. Planting on site will be low maintenance and resilient to climate change.

Drainage and Flood Risk

2.2.23 An outline drainage scheme has been prepared as part of the design of the Redcar Energy Centre and is included as part of the Environmental Statement. The scheme includes connecting the foul water from the Application Site to existing services, and managing surface water drainage within the Application Site using a sealed drainage system. Roof runoff would be collected and used in the process. Other clean surface water (for example, from car parking areas) would be managed through a discharge into the River Tees. This water would be directed to the attenuation pond in the north west of the Application Site and through oil interceptors prior to discharging via the south of site near the access road.

Lighting

2.2.24 The plant would operate on a 24-hour continuous basis. External site lighting would be selected and positioned at low level in order to minimise light pollution, visual impact on the local environment and energy use but also to ensure good working conditions and safety for personnel and security.

Sustainability

Energy Use

2.2.25 The plant would generate sufficient electricity to power itself, in addition to providing electricity for export. The plant would use around 5.5 Megawatts of the overall power (up to 49.9 Megawatts) generated, with the remainder being transmitted via the on-site substation to the local electricity distribution network.

Waste

2.2.26 The main waste generated by the combustion process is Incinerator Bottom Ash. It would be transferred from the Energy Recovery Facility to the adjacent IBA Recycling Facility where metals would be recovered, and the remaining ash converted into secondary aggregate for use within the construction industry.

Residues and Emissions

2.2.27 The Air Pollution Control system would generate residues which would be managed within a fully enclosed system. The residues would be stored in sealed silos and discharged into fully contained disposal vehicles to avoid the release of dust from handling and transfer of this material. All transfers would be managed under the Environmental Permit and the duty of care requirements.

Use of Natural Resources

2.2.28 The main natural resource to be used in the process would be water. The process has been designed to minimise water consumption and maximise water re-use where possible. In order to supplement the plant's reliance on mains water, roof water from the proposed facility would be collected and stored in a rainwater tank.

2.2.29 Waste water from the boiler would be used to quench (dampen and cool) bottom ash; the water would be absorbed by the ash, evaporate or would be recirculated back into the system.

2.2.30 Other resources that would be used at the Redcar Energy Centre include urea or ammonia, lime, activated carbon and diesel fuel. There are also small quantities of other chemicals used on site for example the chemicals for boiler water treatment.

Vulnerability to Accidents and Disasters

2.2.31 The Town and Country Planning (Environmental Impact Assessment) Regulations 2017 (as amended) requires the consideration of the environmental effects as a result of the project's vulnerability to major accidents and disasters. Although such events are not considered likely, the following sources of risk have been identified:

- Flood Risk;
- Pollution;
- Fire; and
- Transport.

2.2.32 According to the Environment Agency flood map, the entire Application Site is located within Flood Zone 1, which is an area of low probability of flooding (less than 1 in 1,000 annual probability). There are no surface watercourses on the Application Site; the nearest watercourse is the River Tees approximately 870 metres to the west.

2.2.33 The proposed drainage strategy would include measures to maintain water quality and protect ground and surface water from any pollutants within the site runoff. Therefore, the risk of major accidents or disasters as result of operational pollution is not likely. Release of pollutants during construction would be prevented and controlled through best practice measures implemented by a Code of Construction Practice.

2.2.34 Energy from waste facilities can present fire hazards and associated toxic gas release. These areas of the plant and its process are well-understood, and the design of the facility would incorporate measures to remove or significantly reduce such risks in accordance with the applicable legislation and standards. The operation of energy plants is subject to a number of regulatory regimes and monitored on a continuous basis. An emergency shut down procedures would be in place and implemented if an incident occurred that could endanger life.

2.2.35 Fire water runoff from the sprinkler discharge would be managed principally by containment within the REC.

2.2.36 From a traffic and transport perspective, the movement of waste and other delivery vehicles along the highway are governed by legislation in the same way that all other vehicles on the highway are governed. The potential for accidents and / or disasters is therefore, the same as any other vehicle on the highway.

Construction

2.2.37 The proposed development is anticipated to use standard construction methodologies (including piling) for infrastructure and buildings. The existing corrugated buildings would be demolished, and a new road network installed.

2.2.38 The timing of the proposed development would depend on securing planning permission and the discharge of planning conditions. It is envisaged that construction would take approximately 32 months from starting on site to the end of commissioning.

2.2.39 The proposed development would use standard construction methods (including piling) for infrastructure and buildings.

2.2.40 The broad sequence of construction activities is likely to be:

- creation of the barrier wall between the Application Site and the adjacent Teesmouth and Cleveland Coast SSSI;
- demolition, site clearance and enabling works;
- infrastructure works, including construction of internal roads and drainage works;
- construction of substructures;
- erection of superstructures;
- installation of process equipment;
- completion of superstructures and building finishes;
- commissioning; and
- planting in accordance with the landscape strategy.

2.2.41 The Application Site would also be temporarily fenced during construction. Site access during construction would be via the existing site entrance

2.3 Summary of Key Parameters

2.3.1 Table 2.1 sets out the parameters that formed the basis of the assessment.

Table 2.1: Schedule of dimensions

Structure	Length (metres)	Width (metres)	Height (metres)
Gatehouse	12.6	4.3	5.6
MRF Offices	21	21	6
Sprinkler Tanks (MRF)	8 (diameter)		10
MRF Building	168.	121	17.5
IBA Building	43	26	17.5
Conveyor	172	5.5	7.5
Stacks			90
Flue Gas Treatment	42	52	30
ACC Unit	74	30	24.9

Structure	Length (metres)	Width (metres)	Height (metres)
ERF Offices	15	37	24
Turbine Hall	51	26	25
Boiler Hall	66	40	49
Bunker	65	37	38
Tipping Hall	63	34	24
Sprinkler Tanks (ERF)	8 (diameter)		10
Substation	11	5.5	6
Transformer	7.5	25	6.3

3 NEED AND ALTERNATIVES CONSIDERED

3.1 Need for the Development

3.1.1 The proposed Redcar Energy Centre forms three main elements; the principal function of the which is the generation of renewable, sustainable and low carbon energy through the combustion of fuel in the form of residual waste including Refuse Derived Fuel through the proposed Energy Recovery Facility element. The main function of the Energy Recovery Facility is the generation of energy, whilst also providing sustainable waste management. The proposed Materials Recovery Facility and Incinerator Bottom Ash Recycling Facility both perform a waste recycling function.

3.1.2 The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. The Framework, together with the Waste Management Plan for England and other national planning documents, establishes an urgent national need for power generation stations including those which generate renewable and low carbon energy; and for sustainable waste management facilities which divert waste from landfill.

3.1.3 There is a national need to provide additional energy recovery facilities to meet the needs of recovering energy from the Refuse Derived Fuel that is currently exported to the EU each year. There is also a national need to recover value from the Commercial &Industrial waste arising in England and the UK through further recycling and energy recovery.

3.1.4 The development plan policy for the Application Site is made up from Redcar and Cleveland Local Plan (adopted in 2018) and the Joint Tees Valley Minerals and Waste Core Strategy. Both are supportive of the need for the development.

3.1.5 Policy SD6 'Renewable and Low Carbon Energy' from the Local Plan supports the principle of, and encourages, renewable and low carbon development. Policy ED6 'Promoting Economic Growth', together with the South Tees Development Area Supplementary Planning Document, provides support for suitable employment related sui-generis uses which expressly include energy generation, and waste management development to be provided in the South Tees area in which the Application Site is located.

3.1.6 The Waste Core Strategy Policy MWCS6 sets out the waste strategy for managing waste arising in the Tees Valley, including making provision for sufficient waste management capacity.

3.1.7 Policy MWCS7 requires land to be identified in order to develop waste management facilities to meet the requirements of the Tees Valley to recover value from Municipal Solid Waste and Commercial & Industrial waste.

3.1.8 Furthermore, the draft Joint Tees Valley Waste Management Strategy (2020 to 2035) identifies a need from 2019 for a new modern energy recovery facility of 420,000 tonnes per annum with the ability to utilise heat produced through development of Combined Heat and Power.

3.1.9 The proposed Redcar Energy Centre would help deliver the energy recovery and waste management needs at a national and regional/local level.

3.2 Alternatives Considered

Site Location

3.2.1 No other sites were considered by the Applicant for the proposed Redcar Energy Centre. The main reasons for the selection of the Application Site, taking into account environmental effects/considerations, were:

- the Application Site falls within the South Tees Development Corporation Area where regeneration is supported with a focus on specialist employment uses and suitable employment related uses such waste management facilities;
- the Application Site falls within the South Tees Area, and the vision of Redcar and Cleveland Borough Council for this area (as part of the South Tees Area Supplementary Planning Document) includes the following aims:
  - facilitate the comprehensive redevelopment of the area to create a world class industrial park including uses aligned with a low carbon and circular economy based on the principle of reduced energy costs and waste minimisation;
  - provide support for new energy generation including renewable energy in the South Tees Area and in particular that development which supports the area's energy needs.
- the Application Site is identified within the Tees Valley Joint Minerals and Waste Core Strategy as an area where proposals for large waste management facilities should be located including clusters of waste management and processing facilities;
- the Application Site is located in close proximity to the other major conurbations of the Tees Valley and the wider region with excellent connections to the strategic highway network;
- the Application Site is also well connected to sustainable transport modes with access to the existing rail and port infrastructure in close proximity;
- the Application Site is comprised of brownfield land within a heavily industrialised setting; and
- the site itself is not sensitive in terms of environmental constraints.

Site Layout and Design

Site Constraints and Opportunities

3.2.2 An evaluation of site constraints and opportunities was undertaken to inform the site layout and design. Constraining factors that affected the layout and the design of the project included the following that are shown on Figure 3:

- Teesmouth and Cleveland Coast Site of Special Scientific Interest which borders the Application Site to the north;
- Teesmouth and Cleveland Coast Special Protection Area and Ramsar which is located approximately 80 metres from the Application Site boundary;
- Saltholme Nature Reserve on Bran Sands approximately 109m to the north;
- Seaton Dunes and Common Local Nature Reserve located 2.7km north west of the Application Site on the opposite side of the Tees Estuary;
- Teesmouth National Nature Reserve located 1.5km to the west of the site on the opposite side of the Tees Estuary;
- Marsh Farm located approximately 2.2km to the east, the closest residential receptor to the Application Site; and
- Grade II listed South Gare Lighthouse located 2.2km to the north of the site is the nearest heritage receptor

3.2.3 The proposed Redcar Energy Centre provides the following opportunities:

- fits comfortably within the Application Site and surrounding area and make an efficient use of the brownfield site and access roads;
- responds well with its surroundings;

- conforms with the South Tees regeneration vision, and will act as a catalyst for other development;
- provides significant employment;
- provides the renewable and low carbon energy to meet the urgent national need, with the potential to serve the planned future development of the South Tees Development Corporation area with both electricity and Combined Heat and Power;
- provides the added benefits of sustainable waste management through energy recovery facilities which recover energy from residual waste which would otherwise be landfilled, together with recycling and bulk storage facilities.

3.2.4 The findings of the Environmental Impact Assessment process have influenced the iterative design process of the proposed development, through the identification of the above constraints, responses during the consultation process, identification of environmental effects and development of mitigation measures.

3.2.5 A number of revisions and iterations to the site layout have been implemented through the Environmental Impact Assessment process, including the following

- the site size was reduced to the current 10.1ha with the site layout being revised as a consequence;
- the Incinerator Bottom Ash Recycling Facility was reduced in size which meant that a conveyor was required to move the material;
- a 20,000m^2 Material Recycling Facility was provided on the Application Site;
- quick access/egress for lorries to the bunker and Materials Recycling Facility was provided;
- no building envelope was included for the fuel gas treatment;
- the building size was slightly increased to allow for larger tipping hall;
- space for queuing at the weighbridge was provided;
- the lorry route in and out of the tipping hall was revised allowing scope for future extensions; and
- the building within the Incinerator Bottom Ash Recycling Facility area was moved from the northern boundary to the western boundary of facility.

4 CONSULTATION, SCOPE OF ASSESSMENT AND METHODOLOGY

4.1 Scoping and Consultation

4.1.1 Scoping is the process of identifying the issues to be addressed during the Environmental Impact Assessment process. This process sets the context for the assessment process.

4.1.2 A request for a Scoping Opinion was submitted to Redcar and Cleveland Borough Council on 28 April 2020. A response was provided on 28th May 2020.

4.1.3 Responses were received from a range of consultees contacted by the local planning authority. Taking into account the nature, size and location of the proposed development, the information provided within the Scoping Opinion and other consultation responses provided throughout the assessment process, the following topics have been identified as requiring consideration within this Environmental Statement:

Table 4.1: Structure of Environmental Statement

Structure of ES	
Non-Technical Summary	Summary of the ES using non-technical terminology
Volume 1: Text	
	Glossary
Chapter 1	Introduction
Chapter 2	Project Description
Chapter 3	Need and Alternatives Considered
Chapter 4	Environmental Assessment Methodology
Chapter 5	Planning Policy
Chapter 6	Landscape and Visual Impact Assessment
Chapter 7	Ecology and Ornithology
Chapter 8	Hydrology and Flood Risk
Chapter 9	Geology, Hydrogeology and Contamination
Chapter 10	Traffic and Transport
Chapter 11	Air Quality
Chapter 12	Noise and Vibration
Chapter 13	Other Environmental Effects
Volume 2: Figures	
Including all figures and drawings to accompany the text.	
Volume 3: Appendices	
Including specialist reports forming technical appendices to the main text.	

4.2 Environmental Assessment Methodology

4.2.1 The assessment of each environmental topic forms a separate chapter of the Environmental Statement. For each environmental topic, the following have been addressed:

4.2.2 Methodology and assessment criteria;

- Description of the existing environmental (baseline) conditions;

- Identification and assessment of the significance of likely effects arising from the proposed development;
- Identification of any mitigation measures proposed to avoid, reduce and, if possible, remedy any adverse effects; and
- Assessment of any cumulative effects with other proposed developments planned in the area.

4.2.3 In terms of significance, effects are generally described using the following scale:

- Substantial: Only adverse effects are normally assigned this level of significance. They represent key factors in the decision making process. These effects are generally, but not exclusively, associated with sites or features of international, national or regional importance that are likely to suffer a most damaging impact and loss of resource integrity;
- Major: These beneficial or adverse effects are considered to be very important considerations and are likely to be material in the decision making process;
- Moderate: These beneficial or adverse effects may be important, but are not likely to be key decision making factors. The cumulative effects of such factors may influence decision making if they lead to an increase in the overall adverse effect on a particular resource or receptor;
- Minor: These beneficial or adverse effects may be raised as local factors. They are unlikely to be critical in the decision making process, but are important in enhancing the subsequent design of the development; and
- Negligible: No effects or those that are beneath levels of perception, within normal bounds of variation or within the margin of forecasting error.

4.2.4 Such effects may be beneficial or adverse.

5 SUMMARY OF ENVIRONMENTAL EFFECTS

5.1 Landscape and Visual Impact Assessment

5.1.1 The landscape and visual impact assessment identifies and addresses the existing landscape and visual resources within the project site and the surrounding study area. This includes identification of the character and features of the landscape, and consideration of the changes that would result from the proposed development.

5.1.2 A 25 km radius study area was adopted for the assessment and a computer-generated Zone of Theoretical Visibility was mapped. This is the theoretical area from which any part of the project would potentially be visible, and broadly defines the study area for both the landscape character and visual assessment. This identifies the theoretical areas from which the proposed development would be visible.

5.1.3 The overall context of the Application Site is that of an existing industrial site, with existing chimneys and large-scale industrial buildings within the immediate vicinity. The existing local landscape / townscape is heavily influenced and dominated by industrial land uses along the River Tees, the scale of which is large enough to continue to feature within, and have a characterising effect upon, views over 20km away.

5.1.4 The proposed development would include a range of measures that have been designed to reduce or avoid significant adverse landscape and visual effects. The overall external design of the proposed building, including its layout, massing and colours, has been developed to aid in reducing its overall landscape and visual impact.

5.1.5 The effects of construction activity would be temporary with minimal demolition and releveling of hardstanding proposed. Construction activity within the site would lead to temporary impacts on landscape character. The significance of effect on the site and immediate surrounds would be Minor Adverse. There would also be direct effects of a Negligible Adverse significance upon the district level Redcar Industrial Townscape Tract (RPS 2020). Beyond this, within landscape townscape indirectly effected, effects would range from Negligible to Adverse to No Change. There are no significant effects upon the landscape resource at the construction phase.

5.1.6 The effects on views during construction would be temporary, and due to the topography and existing industrial setting within the study area, the majority of the low-level construction activity would be concealed. The height of the cranes required during construction are anticipated to be a slightly greater height than the proposed 90 metre exhaust stacks and would appear as new elements within existing views. Given the existing industrial skyline, the effects at construction are considered to be comparable to that of the operational phase detailed below, with the exception of one viewpoint from the entrance to the project site where there would be increased potential to see vehicular traffic associated with the construction phase, resulting in a Negligible Adverse effect, which is not significant in terms of Environmental Impact Assessment.

5.1.7 The proposed development would complement the adjoining uses and be of a comparable scale to the existing sizeable industrial buildings. The proposed development would therefore be consistent with the local industrial / commercial character of the urban area of Redcar.

5.1.8 It is considered that the changes resulting from the proposed development which would occur on the site and within its immediate surrounds, and within the wider existing Redcar Industrial Townscape Tract (RPS 2020, would be accommodated within this industrial area. The poor condition of the existing townscape at the site provides the opportunity for introducing new elements without significant adverse effects. The proposed modern design of the building, together with an appropriate site layout and landscape strategy, would seek to ensure that the site would

function well and contribute to the overall character and quality of the area, and introduce a renewed sense of place. From adjacent character areas, the proposed development site would be seen in the context of the industrial fabric of Teesside, allowing it to become part of the local landscape/townscape character.

5.1.9 In terms of views, it is anticipated that a building of this scale would cause some localised obstruction to near views but given the existing industrial baseline this would not be considered significant. However, the nature of views, beyond the immediate vicinity, would be highly industrial in nature given the existing neighbouring land-use of the estuary. Views are often interrupted by vertical elements of chimneys, pylons and turbines. Although the project and stack height of 90m (as shown on the ZTV) may be visible over greater distance in periods of excellent visibility, due to the industrialised context of baseline views it is considered that the potential effects upon these longer distance views would not be significant.

5.1.10 It is considered that the landscape/townscape character within the Redcar urban area has the capacity to absorb the proposed further developments and that the character of the Redcar Industrial and Redcar Residential areas would remain intact. Depending on the quality of other new development, there is potential for a beneficial cumulative effect in the long term as well designed industrial changes occur within the industrial area of Redcar. It is not considered that the project would contribute to any significant adverse cumulative effect on the industrial or urban landscape of Redcar.

5.1.11 Cumulative visual effects are the effects on views and visual amenity enjoyed by people. No combined cumulative visual effects are identified from close (less than 1 km) residential receptors as a result of additional effects or combined effect of the proposed development with the cumulative schemes. Any combined cumulative effect on views for residential receptors of medium distance (1 to 5 km) would be barely distinguishable in the industrial and urban context and therefore not significant. From close viewpoints, particularly along the Teesdale Way, the scale and nature of the cumulative schemes and the proposed development would not change the character and nature of the views. From viewpoints further afield Redcar Energy Centre and the other proposed developments would be viewed in combination as a minor addition to the urban and industrial fabric of Redcar.

5.1.12 Overall, the quality and character of the landscape/townscape and visual resources would be maintained, and would have the capacity to accommodate the proposed development without significant effects. Potential cumulative effects would be relatively small in the context of an existing industrial urban area and it is not considered that the proposed development would contribute to any significant adverse cumulative effect.

5.2 Ecology and Ornithology

5.2.1 The proposed Redcar Energy Centre is situated adjacent to the Teesmouth and Cleveland Coast Site of Special Scientific Interest and approximately 80 metres from the Teesmouth and Cleveland Coast Special Protection Area/Ramsar site designated for the internationally important populations of waterbirds. There are several underpinning Sites of Special Scientific Interest designated for coastal habitats, marine mammals and bird species they support.

5.2.2 The baseline environment within the footprint of the Application Site is of very low ecological value. The field surveys found no evidence of protected species and the main habitat component was bare ground. The desk study identified notable records of common and grey seal within 1.1 km, brown hare within 0.2 km from the site and small heath and wall butterfly within 0.7 and 1.3 km respectively. Other than roe deer and weasel, no other notable terrestrial species was included in the desk study.

5.2.3 The area surrounding the Application Site, particularly Bran Sands, was shown to be an important feeding and roosting area for populations of waterbirds. Five out of the seven named features of the Teesmouth and Cleveland Coast Special Protection Area/Ramsar citation were recorded using the area to varying degrees, along with the majority of the primary components of the waterbird assemblage. Records of numerous other species on one or more conservation lists also occurred infrequently and/or in low abundance.

5.2.4 Standard mitigation measures are to be adopted, following industry best practice during the construction phase in order to minimise adverse construction effects as far as reasonably practicable. The erection of a 5-metre-high concrete wall along the north east boundary early on in the construction phase will help prevent pollution incidents impacting coastal habitats, attenuate construction noise and block ground level construction work from visibility at Bran Sands. The 5-metre-high wall has been included as an embedded mitigation feature.

5.2.5 The temporary noise and visual disturbance, and potential for ground and water pollution during the construction (and similarly during demolition), have been assessed. The impacts of noise, visual impact and air quality during operation have also been assessed.

5.2.6 The assessment concludes that with the implementation of mitigation measures the impact of the proposed development during the construction, operation and decommissioning phase would be not significant in terms of the EIA Regulations. While there will be some adverse impacts from noise disturbance during the construction phase, these are temporary and will not impact the long-term survival of any species or population. The majority of habitats within the designated sites (comprising the intertidal muds/sands) are not sensitive to air pollution impacts; being inundated by the sea twice daily, their nutrient status is driven by the marine ecosystem. Therefore, the assessment of potential effects has focused on the dune complex within the South Gare and Coatham Dunes as both the most sensitive habitat and closest receptor. These have developed on lime-rich tipped slag and are therefore less sensitive to increased nitrogen deposition than those on acidic habitats. The assessment has shown that the emissions during the operation of the Redcar Energy Centre will lead to increased nitrogen deposition. However, given the historical setting of the sand dunes downwind of the former Teesside Steelworks, the historic deposition rates are likely to have been substantially higher than they are currently. As such, the modelled change in air quality resulting from the operational Redcar Energy Centre is unlikely to lead to changes in habitat type (i.e. a move from a dune habitat to more of a stable habitat) and is unlikely, therefore, to be significant.

5.2.7 The main potential for cumulative effects arises from the Teesmouth CCPP with regards to changes in air quality on the Teesmouth and Cleveland Coast Special Protection Area and Ramsar. Although small changes are predicted in both the proposed development and the Teesmouth CCPP, they are unlikely to make a significant difference to the features for which the sites were designated.

5.3 Hydrology and Flood Risk

5.3.1 The closest watercourse to the site is the River Tees which flows in a northerly direction 870 metres to the west of the site and discharges into the North Sea. The River Tees is fed by a complex network of Main Rivers, ordinary watercourses and drainage ditches with water features (ponds, drainage ditches) within a 1 km radius of the Application Site.

5.3.2 The Redcar and Cleveland Strategic Flood Risk Assessment (May 2016) indicates that the risk of fluvial flooding within the borough of Redcar and Cleveland is minimal.

5.3.3 The Environment Agency's Flood Map for Planning identified that the site is located within Flood Zone 1, at low risk of flooding from tidal sources. Tidal flood defences are present along the

coastline approximately 850 m to the north of the site. The Environment Agency have indicated that no Agency flood defence infrastructure is present within the vicinity of the Application Site.

5.3.4 The Environment Agency provided modelled flood data extracted from the 2011 Tidal Tees Integrated Flood Risk Modelling Study and 2015 Tidal Tees Integrated Flood Risk Modelling Study. Modelled flood extents for a 1 in 1,000-year event plus climate change (undefined allowance) indicate the Application Site is predicted to be unaffected during such an event.

5.3.5 The undefended modelled flood water level at the node closest to the site indicates a flood water level of 4.11 m Above Ordinance Datum (AOD). Digital Terrain Model data at the proposed development site indicates that the average topography is approximately 7.1 m AOD. Therefore, the Application Site is located approximately 2.99 metres above the '1 in 200-year' flood level and 1.84 metres above the '1 in 1000 year plus climate change' level.

5.3.6 The majority of the Application Site is currently at very low risk of flooding with localised areas at low risk of flooding from surface water. No other significant risk of flooding was identified.

5.3.7 The construction activities of the proposed development have the potential to have a detrimental effect on flood risk through the increase in impermeable areas within the construction compounds. The construction phase of the proposed development has the potential to have a detrimental effect on water quality of nearby watercourses and ecological habitats through introducing sediments or spilt contaminants (stored oils / fuels / chemicals) into these environments. This may be due to excavation, wheel washing, and dust and mud on site. Suspended sediments can reach surface waters through rainfall runoff.

5.3.8 A Code of Construction Practice (CoCP) would be prepared post consent and agreed with Redcar and Cleveland Borough Council prior to the commencement of construction. The CoCP would include measures to control runoff from the construction works and thereby movement of sediment into the water bodies and drainage infrastructure. Spill procedures and use of spill kits, together with appropriate drainage systems and containment, would be employed. The project would use appropriate storage and siting of stockpiles during construction, including provision of gaps, to prevent blockage of watercourses and allow unrestricted passage of surface water.

5.3.9 All construction compounds would include temporary construction drainage in order that no increase in surface water runoff is caused. They will be located away from the ecological habitats to the north and the River Tees / Tees Estuary to the west.

5.3.10 With the above proposed mitigation measures, the effect of the construction work on on-site and off-site receptors with regards to flood risk and hydrology is expected to be Minor Adverse and therefore not significant.

5.3.11 During operation there would be an increase in the impermeable surface area and would therefore be expected to increase surface water runoff, in turn increasing surface water flood risk. A surface water drainage strategy has been developed which would attenuate any increase in runoff caused by the development with an allowance for additional runoff caused by climate change.

5.3.12 The operation of Redcar Energy Centre would be managed in accordance with the Environmental Permit which will incorporate emergency spill procedures and ongoing water quality monitoring to ensure that no adverse pollution is caused to surrounding habitats or environment.

5.3.13 The overall effects of the operational / maintenance activities on hydrology and flood risk will be minor adverse which is not significant.

5.3.14 The decommissioning impacts have been determined to be similar to and no worse than construction impacts in relation to hydrology and flood risk, and therefore are at worse minor adverse and unlikely to be significant.

5.3.15 There would be no significant cumulative effects.

5.4 Geology, Hydrology and Contamination

5.4.1 The Application Site is understood to be underlain by Made Ground to a depth of approximately 5 metres associated with reclamation of the site and surrounding area from the Tees Estuary. The Superficial geology comprises Tidal Flat Deposits which are classified as a Secondary Undifferentiated Aquifer. The underlying Bedrock is indicated to consist of the Mercia Mudstone group which extends to considerable thickness and s classified as a Secondary B Aquifer.

5.4.2 The Teesmouth and Cleveland Coast Site Special Scientific Interest which is protected owing to its geological and biological importance is situated immediately adjacent to the Application Site. Human health receptors have also been identified associated with the construction and operational phases.

5.4.3 The Application Site has been subject to a Phase 1 Preliminary (Environmental) Risk Assessment (PRA) which identified the potential for soil and groundwater contamination to be present associated with past uses of the site and surrounding area, including reclamation of land from the Tees Estuary by raising land levels using imported materials and spoil tipping. The Preliminary Risk Assessment also identified the potential for ground gas to impact the Application Site.

5.4.4 A Code of Construction Practice would be developed post consent and implemented during the construction phase to mitigate the potential hazards to identified receptors during the construction phases. A Phase 2 Site Investigation would be undertaken prior to construction to investigate potential contaminants as identified by the Preliminary Risk Assessment. This would include an assessment of the risk to human health receptors, controlled waters receptors and infrastructure. Any unacceptable risks to such receptors would be managed through remediation or mitigation prescribed by a Remediation Strategy.

5.4.5 In addition, the nature of the development would result in the area of low permeability surface cover increasing. This would reduce the infiltration of rainfall thereby reducing soil leaching and will also limit the potential for the mobilisation of any post development residual shallow soil contamination reducing the risk to any off-site receptors.

5.4.6 From a geology, hydrogeology and contamination perspective the proposed development is considered to have the potential for a minor adverse impact to receptors during the construction phase.

5.4.7 The operational phase effects to groundwater and the Teesmouth and Cleveland Coast SSSI are considered to be somewhere between no change to medium beneficial depending on the degree of existing contamination and the nature of the remediation / mitigation incorporated into the development. On this basis, the significance of effect is considered to be no change to moderate beneficial.

5.4.8 There are no cumulative effects for geology, hydrogeology and contamination.

5.5 Traffic and Transport

5.5.1 The Application Site is accessed from the public highway network via the South Tees Development Corporation access, taken from a five-arm roundabout with A1085 Trunk Road and the Wilton Site access road. Beyond which, traffic generated at the Application Site travels along A1085 Trunk Road to the north east, and along A1085 Trunk Road, the A66 and A1053 to the south west.

5.5.2 Traffic volumes generated during the construction and decommissioning phases are expected to be less than that generated when the site is operational. Therefore, the operation of REC will generate the greatest number of vehicle movements.

5.5.3 This Environmental Statement chapter sets out the estimated operational HGV movements along the adjacent highway network.

5.5.4 Baseline traffic flows were established using Department for Transport data taken from 2018 within a study area that extends from the site access at A1085 Trunk Road, to the A66 and A174 via the A1053 Greystone Road.

5.5.5 A Code of Construction Practice (CoCP) would be prepared post consent and agreed with Redcar and Cleveland Borough Council prior to the commencement of construction. The CoCP would include measures for the planning and management of construction traffic in terms of routeing, loads and general good practice. The CoCP would seek to minimise the effects of construction traffic upon sensitive receptors along the affected road network.

5.5.6 Environmental impact assessments determined that the effects of driver delay, severance, pedestrian delay, accidents, pedestrian amenity, road safety and hazardous, dangerous loads would be negligible.

5.5.7 The assessments have calculated the REC development to result in negligible increase in traffic flows on most parts of the local road network and slightly greater increase along other parts of the highway network where baseline traffic flows are very low. The sensitivities of receptors have been identified as low or negligible and the magnitudes of impacts have been identified to be generally negligible. No significant environmental effects are predicted.

5.6 Air Quality

5.6.1 A study of the air quality impacts of the proposed development has been undertaken for both construction and operational phases. The size of the study areas differ; the area for the construction phase (dust impacts) is up to 350 metres from the Application Site boundary, and includes roads up to 500 metres from the site entrance. Stack emissions during the operational phase are assessed up to 10 km from the Application Site for ecological receptors, and 3 km for human health receptors.

5.6.2 Impacts during the construction of REC, such as dust generation and exhaust emissions from construction related vehicles are predicted to be of short duration. The results of the risk assessment of construction dust impacts, undertaken using the Institute of Air Quality Management (IAQM) dust guidance, indicate that that the risk of dust impacts will be medium. Implementation of the highly recommended mitigation measures described in the IAQM construction dust guidance will reduce the residual dust effects to a level categorised as “not significant”.

5.6.3 The agreed mitigation measures would be included in a Code of Construction Practice (CoCP), which would be approved in writing by the Local Planning Authority prior to the commencement of constructions works.

5.6.4 The impacts of emissions on human health from the operation of REC have been assessed using an atmospheric dispersion model. This includes an assessment to determine a suitable stack height for the Proposed Development to ensure adequate dispersion of pollutants. Emissions have been modelled at the maximum allowable concentration limits in the Industrial Emissions Directive (IED) and Best Available Technique (BAT) documents for waste incineration. This gives a ‘worst case’ assessment. The predicted contributions have been added to ambient concentrations and the total pollutants concentration compared with the relevant Environmental Assessment Levels. The model has been run using five years of hourly sequential meteorological data to allow the impacts to be assessed for a wide range of conditions. The cumulative impacts of REC and other projects has also been considered. The results of the dispersion modelling reported in the ES

indicated that predicated contributions and resultant environmental concentrations of all pollutants would be of “negligible” significance.

5.6.5 An assessment of cumulative effects where the impacts associated with the REC together with other developments and plans was undertaken. Three developments were identified for inclusion, the closest of which was 681 metres from the site. The assessment concluded no significant cumulative impacts were associated with either construction dust or stack emissions.

5.6.6 Overall, the air quality effects of the proposed development, both separately and cumulatively, are not considered to be significant.

5.6.7 There are no cumulative effects with regards to air quality.

5.7 Noise and Vibration

5.7.1 The nearest residential noise sensitive receptors (NSRs) are located approximately 2.3 km to the south east of the proposed REC, at Marsh Farm. The nearest non-residential NSRs are located close to the northern boundary of the site (the Saltholme Nature Reserve).

5.7.2 The baseline acoustic environment at the nearest residential dwellings would be affected primarily by noise from the sea (wind and waves), road traffic movements on the A1085 Trunk Road and train movements on the ‘Bishop and Tees Valley Line’. Other noise sources typical of the urban environment, including commercial land uses, would also contribute to the baseline acoustic environment.

5.7.3 As other industrial and commercial land uses are located in close proximity to the ecological sensitive sites, it is considered very likely that sound from these land uses will have been historically affecting the baseline acoustic environment.

5.7.4 Standard measures would be adopted, following ‘Best Practicable Means’ (BPM) during the construction phase in order to minimise adverse construction noise effects as far as reasonably practicable.

5.7.5 Mitigation measures applied as part of the project design include the erection of a 5 m high wall along the north-eastern boundary of the site, which will act to attenuate noise levels on the nearest ecologically sensitive area (the Saltholme Nature Reserve), creating both a sound and visual barrier. The ‘incinerator bottom ash’ (IBA) building will contain IBA processing equipment and will act as a further sound and visual barrier, which has been relocated following liaison with Natural England

5.7.6 Noise from construction activity, including impact piling (if undertaken), would result in, at worst, a minor to moderate adverse effect at the nearest part of the nearest ecologically sensitive area, the Saltholme Nature Reserve. However, construction noise levels across the wider Saltholme Nature Reserve site would be lower, with a lower associated noise impact and lower adverse effect (minor to negligible). Furthermore, during the breeding season (May to August inclusive) the sensitivity of the Nature Reserve site is lower, such that during this period, at worst, minor adverse effects would result. On this basis, it is considered that the potentially moderate adverse effect would not be significant overall.

5.7.7 Noise from operation of the Redcar Energy Centre would result in at worse a minor adverse effect, which is not considered significant in EIA terms.

5.7.8 Operational road traffic movements generated by the proposed facility on the public highway are negligible compared to baseline and there would be no change in road traffic noise levels and as such no adverse impact at residential NSRs.

5.7.9 Noise from operation of the Redcar Energy Centre at the nearest residential dwellings, 2.2 km to the south east, would be of a very low magnitude and would not be likely to be audible/discernible above the baseline acoustic environment either externally, or internally within dwellings.

5.8 Other Environmental Effects

5.8.1 A scoping report was submitted to Redcar and Cleveland Borough Council in April 2020 for the proposed Redcar Energy Centre (see Appendix 4.1). The scoping process confirmed that the key areas required to be considered within the Environmental Statement (ES) are:

- Landscape and Visual Resources (Chapter 6);
- Ecology and Ornithology (Chapter 7);
- Hydrology and Flood Risk (Chapter 8);
- Geology, Hydrogeology andContamination (Chapter 9);
- Traffic and Transport (Chapter 10);
- Air Quality (Chapter 11);
- Noise and Vibration (Chapter 12);

5.8.2 This chapter of the Environmental Statement provides an overview of the topic areas for which significant effects are not considered likely in terms of the Environmental Impact Assessment (EIA) Regulations, including details of the reasons which effects in relation to these topic areas were scoped out of the assessment and details of supporting information, where appropriate.

Land Use, Agriculture and Recreation

5.8.3 The Application Site is located within Redcar Bulk Terminal and comprises predominantly open land which has been used for the storage of materials from the terminal. All construction and operational activities of the REC would take place within the red line boundary and would not lead to the loss of agricultural land and therefore, this topic has been scoped out.

5.8.4 There are no Public Rights of Way (PRoW) or public access within or adjacent to the Application Site. The nearest PRoW is the Teesdale Way located approximately 175 metres to the north of the Application Site. This PRoW provides access to South Gare Lighthouse via the South Gare Breakwater and Tod Point Road and is well-used by dog walkers and visitors to the lighthouse. There would be no direct effects on the PRoW as a result of the proposed development given that the PRoW is not adjacent to the Application Site. This conclusion was confirmed by the PRoW Officer in their response to the scoping report.

5.8.5 The proposed development is likely to be visible from the Teesdale Way PRoW, however due to the location of the Application Site within an industrial area, effects are not likely to be significant. Visual effects on the PRoW are assessed in Chapter 6: Landscape and Visual Assessment which confirms this conclusion.

5.8.6 The proposed development would not result in the loss or diversion of any recreation facilities.

Historic Environment

5.8.7 There are no Scheduled Monuments or Listed Buildings located within or adjacent to the Application Site. The nearest listed buildings are located approximately 2.2 km to the north and 2.2 km to south east of the Application Site. The buildings to the south east comprise three Grade II listed buildings at the same location: Marsh Farmhouse and Farm Cottage, Barn and Stable, and

Garden Wall. A further Grade II listed building - South Gare Lighthouse - is situated on the headland to the north of the Application Site.

5.8.8 The Application Site does not contribute to the setting or significance of any designated asset outside of its boundary and therefore, the proposed development will not impact upon the significance of any designated heritage assets.

5.8.9 The proposed development is located on a brownfield site which has previously been used for storage for the bulk shipping terminal nearby. Due to the Application Site's recent development history, the likelihood of any buried remains being present beneath the site is low.

5.8.10 Considering the historic environment baseline, it is not likely that the proposed development would result in significant effects in terms of historic assets or buried archaeology. Therefore, it is proposed that the historic environment is scoped out of the ES. This approach was agreed by the Natural Heritage Manager in his scoping response.

5.8.11 A Historic Desk Based Assessment (DBA) outlining the baseline environment and the likely potential for buried archaeology has been undertaken and is included as Appendix 13.1. The HER records the line of a former 19th century tramway crossing the Application Site. However, following further land reclamation work and redevelopment of the Application Site and adjacent land in the 1970s, any archaeological evidence for this locally-important feature has been removed.

5.8.12 The assessment has also considered the potential for other, as-yet undiscovered, archaeological assets within the Application Site. Based on the HER data for the surrounding study area, and its historic topographical location on tidal mudflats at the mouth of the River Tees, the Application Site is considered to have negligible potential for additional archaeological assets.

5.8.13 Ground levels within the Application Site and surrounding area have also been raised through land reclamation and industrial development throughout the 20th century, and most particularly for development of the Teesside Works in the 1970s. The proposed development would not affect any heritage assets. No further archaeological measures are considered necessary as part of the proposed development.

Socio-economics and Community

5.8.14 At the peak of construction, approximately 450 people may work at the Application Site. During operation, the REC would employ up to 100 full time equivalent employees comprising operation and maintenance staff, clerical and administrative staff and plant management. The ERF plant operations and maintenance staff would be employed within up to five shift teams. In addition, approximately 100 additional contractors will be temporarily employed during the planned annual shutdowns.

5.8.15 Given the temporary nature of the construction phase and the numbers of predicted employees during the operation phase, no additional pressures are envisaged on housing and on existing community facilities and significant effects are unlikely to occur. The Request for a Scoping Opinion (Appendix 4.1) proposed that a topic chapter for socio-economics and community should be scoped out of the ES. No objections were raised to this approach in the Scoping Opinion (Appendix 4.1).

Human Health

5.8.16 The Application Site is located within an existing industrial area and is over 2km from the nearest residential property.

5.8.17 Consideration has been given to the potential health pathways associated with the proposed development. The following potential health effects have been identified:

5.8.18 Changes to local air quality during construction (dust); and

5.8.19 Changes in traffic flows, noise levels and air quality during construction and operation.

5.8.20 Exposure to dust during construction has been considered in Chapter 11 (Air Quality) of this ES. The dust assessment concluded that with the implementation of the Institute of Air Quality Management (IAQM) highly recommended dust controls, the residual dust impacts would be not significant. The increase in traffic numbers as a result of the proposed development have been predicted in Appendix 10.1: Transport Assessment and the environmental impacts associated with these changes in traffic have been assessed in Chapter 10: Traffic and Transport. The chapter concluded that the sensitivities of receptors to traffic were considered to be low or negligible and the level of effects were predicted to be negligible adverse.

5.8.21 Some employment would be generated by the proposed development during construction and operation; however, it is not anticipated that the net increase in jobs would be sufficient to generate significant health effects.

5.8.22 Chapter 11: Air Quality also includes an assessment of the stack emissions from the proposed development through detailed dispersion modelling using best practice approaches. The results of dispersion modelling reported in this assessment indicate that predicted contributions and resultant environmental concentrations of all pollutants considered would be of “negligible” significance.

5.8.23 The main dust mitigation measure is containment. Taking into account the fact that the processes would be largely contained, and the distance to sensitive receptors, the risk of dust impacts during operation is predicted to be not significant based on professional judgement.

5.8.24 Exposure to changes in noise levels have been assessed in Chapter 12 (Noise and Vibration) of this ES in terms of noise generated during the operation of the REC and from operationally generated traffic. The nearest residential noise sensitive receptors (NSRs) are located approximately 2.3 km to the south east of the proposed Redcar Energy Centre (REC), at Marsh Farm. Operational road traffic movements on the public highway are negligible compared to baseline and there would be no change in road traffic noise levels and as such no adverse impact at residential NSRs.

5.8.25 Noise from operation of the REC at the nearest residential dwellings, 2.3 km to the south-east, would be of a very low magnitude and would not be likely to be audible/discernible above the baseline acoustic environment externally, or internally within dwellings.

5.8.26 On this basis, a separate assessment of health impacts associated with these pathways is not considered necessary within this ES. Given the nature of the proposed development and the lack of any additional health pathways likely to result in significant effects, a separate health assessment in the form of an additional chapter or Health Impact Assessment is not considered necessary and has been scoped out of the ES.

5.8.27 The Scoping Opinion from Redcar and Cleveland Borough Council (see Appendix 4.1 of the ES) agrees with the proposed approach to scope human health out of the ES and that a separate chapter for human health is not necessary.

Climate Change

Climate Change Resilience

5.8.28 Resilience to future climate change has been considered during the design process and this would continue during the detailed design stage. The design of the proposed development has taken into account potential future climate change scenarios, for example, future flood risk and resilience to

extreme weather events. The conceptual surface water drainage strategy for the proposed development (Appendix 8.2) has been designed to take flood risk into account, with an allowance for climate change. The ES sets out details of the proposed development's resilience to climate change in Chapter 2: Project Description and Chapter 8:Hydrology and Flood Risk of the ES.

Climate Change: Changes to Future Environmental Conditions

5.8.29 Consideration of predicted changes in baseline environmental conditions, including changes resulting from climate change, are set out within each ES topic chapter (Chapters 6 to 12), where robust information is available at the time of writing.

5.8.30 This has been based on the information available from the UK Climate Projections project (UKCP18), which provides information on plausible changes in the climate for the UK (Environment Agency and Met Office, 2018) and on published documents such as the UK Climate Change Risk Assessment 2017 (Committee on Climate Change, 2016).

5.8.31 Climate data from the UKCP18 database has been used from a 25 km2 grid square containing the site, based on a medium emissions scenario. Mean air temperature and annual average precipitation data for the period 2020 to 2079 have been used to inform the consideration of how environmental conditions may change at the Application Site and in future.

5.8.32 The assessment of effects for each topic takes into account identified trends or changes predicted to arise as a result of climate change.

Effects of the Project on Climate Change

5.8.33 Greenhouse gas emissions can occur throughout the lifecycle of a development, including during construction and operation of a proposed development. This can be affected by factors such as material use and energy demand.

5.8.34 The design of the proposed development has given consideration to measures to minimise and mitigate greenhouse gas emissions, where possible. Such measures would be set out in the Design and Access Statement and summarised in Chapter 2: Project Description of the ES.

5.8.35 No further assessment of greenhouse gas emissions is considered necessary or appropriate at this stage.

5.8.36 Taking into account the above approach, it is not considered that a separate chapter on climate change is required to form part of the ES. This approach has been agreed with Redcar and Cleveland Borough Council through the Scoping Opinion (Appendix 4.1).

Daylight, Sunlight and Microclimate

5.8.37 All the proposed works for the proposed development will be undertaken within the boundaries of the Application Site. Due to the location of the proposed works and the nature of the surrounding land use it is not considered likely that the proposed development will have significant effects in relation to daylight and sunlight. In addition, the nature of the proposed development is not likely to result in microclimate changes and therefore this topic is also scoped out of the assessment. This approach is in line with the Scoping Opinion from Redcar and Cleveland Borough Council (see Appendix 4.1 of the ES).

Material Assets

5.8.38 The EIA Regulations refer to 'material assets', including architectural and archaeological heritage. The phrase 'material assets' has a broad scope, which may include assets of human or natural

origin, valued for socio-economic or heritage reasons. Material assets are in practice considered across a range of topic areas within an ES, in particular the socio-economic and historic environment chapters. These topics have been scoped out of the assessment as significant effects are not considered likely (outlined above), therefore a separate chapter on material assets is proposed to be scoped out of the assessment. This approach is in line with the Scoping Opinion from Redcar and Cleveland Borough Council (see Appendix 4.1 of the ES).

Major Accidents and Disasters

5.8.39 The EIA regulations require consideration of vulnerability to major accidents and/or disasters. The risk of major accidents and disasters has been considered in Chapter 2: Project Description. Furthermore, each topic chapter has assessed the likely environmental effects related to a major accident or disaster which could occur in relation to that particular discipline. Therefore, a separate chapter assessing the risk of major accidents and disasters is not considered necessary. This approach is in line with the Scoping Opinion from Redcar and Cleveland Borough Council (see Appendix 4.1 of the ES).

Residues and Emissions

5.8.40 The generation and management of flue gas treatment residue is described in Chapter 2: Project Description of the ES. No other residues will be generated by the proposed development. Stack emissions are described in Chapter 11: Air Quality and will be managed through the Environmental Permit. On this basis, a separate chapter is considered unnecessary. This approach is in line with the Scoping Opinion from Redcar and Cleveland Borough Council (see Appendix 4.1 of the ES).

Waste

5.8.41 Wastes generated from the construction of the proposed development will be managed through a Site Waste Management Plan that will be prepared post consent. IBA generated from the operation of the proposed development will be recycled at the on-site facility and will be managed through Environmental Permit along with other operational wastes. A summary of the construction and operational wastes will be provided in the Project Description chapter of the ES. No significant effects are envisaged and therefore, a separate chapter is considered unnecessary. This approach is in line with the Scoping Opinion from Redcar and Cleveland Borough Council (see Appendix 4.1 of the ES).

Radiation and Heat

5.8.42 Given the nature of the proposed development, no significant radiation or heat effects are anticipated, and these effects have been scoped out of the assessment measures to control energy demand and improve energy efficiency. Such measures would be set out in the Design and Access Statement and summarised in Chapter 2: Project Description of the ES.

6 FURTHER INFORMATION

6.1.1 This Non-Technical Summary provides a summary of the Environmental Statement accompanying the planning application for the proposed development at part of the Redcar Bulk Terminal.

6.1.2 Copies of the full Environmental Statement, including this Non-Technical Summary can be viewed by contacting:

Redcar and Cleveland Borough Council.

Mandela House

Redcar and Cleveland House

Kirkleatham Street, Redcar

Yorkshire TS10 1RT

6.1.3 Copies of the Environmental Statement and planning application documents can be viewed on the local planning authority website:

6.1.4 https://www.redcar-cleveland.gov.uk/resident/planning-and-building/planning-permission/Pages/Comment-on-a-Planning-Application.aspx Further copies of the Environmental Statement can be obtained from:

RPS

20 Western Avenue

Milton Park

Abingdon

Oxfordshire

OX14 4SH

6.1.5 Electronic copies of the Environmental Statement (on CD) can be purchased from the above address at a cost of £10 (including postage and packaging). Paper copies of the Environmental Statement are also available from the above address, although an administrative charge will be made to cover the cost of copying (£460).

7 REFERENCES

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

Institute of Lighting Professionals (2011) Guidance Notes for the Reduction of Obtrusive Light GN01

Redcar and Cleveland Borough Council (2018) Local Plan

Figure 1: Site Location Plan

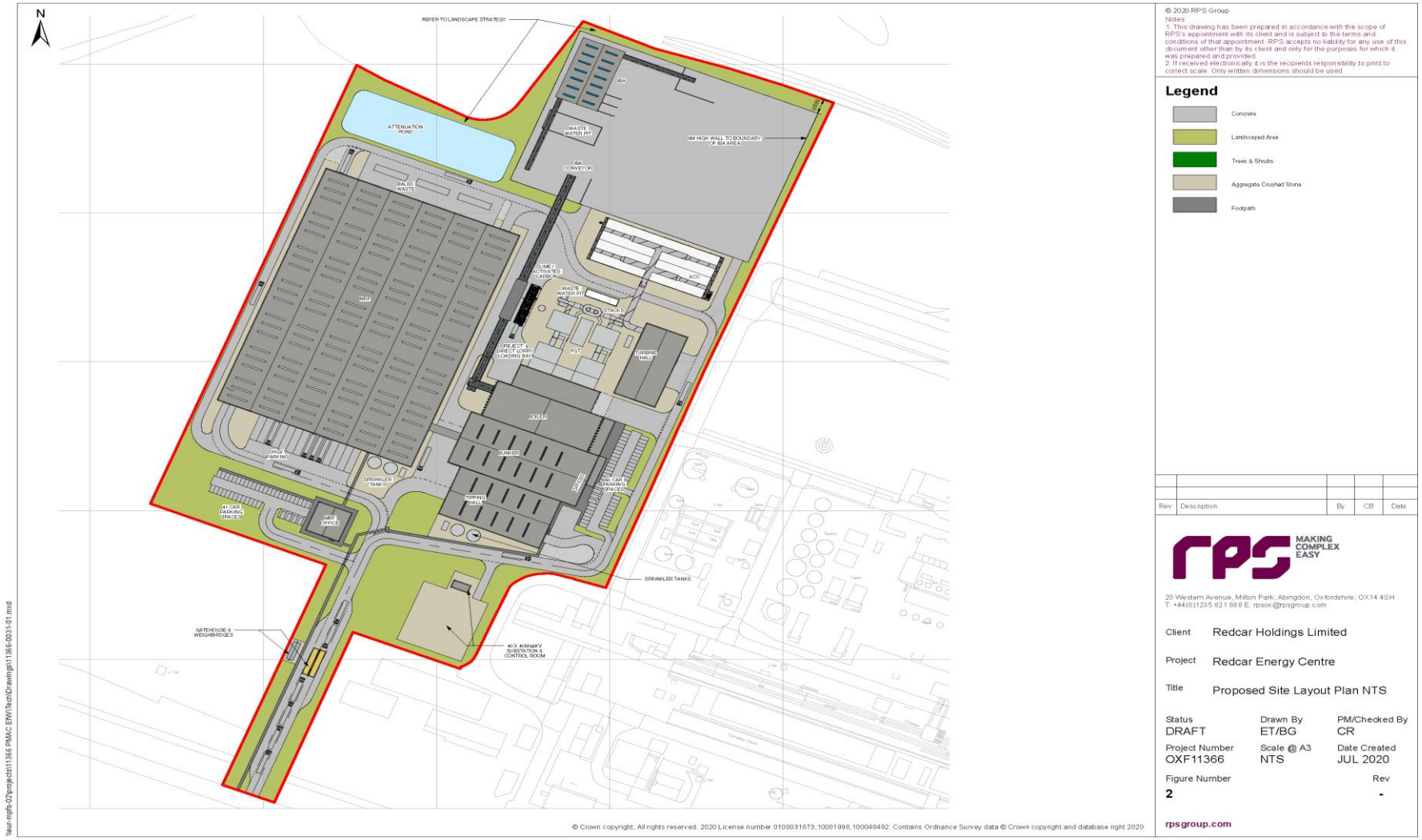

Figure 2: Proposed Site Layout

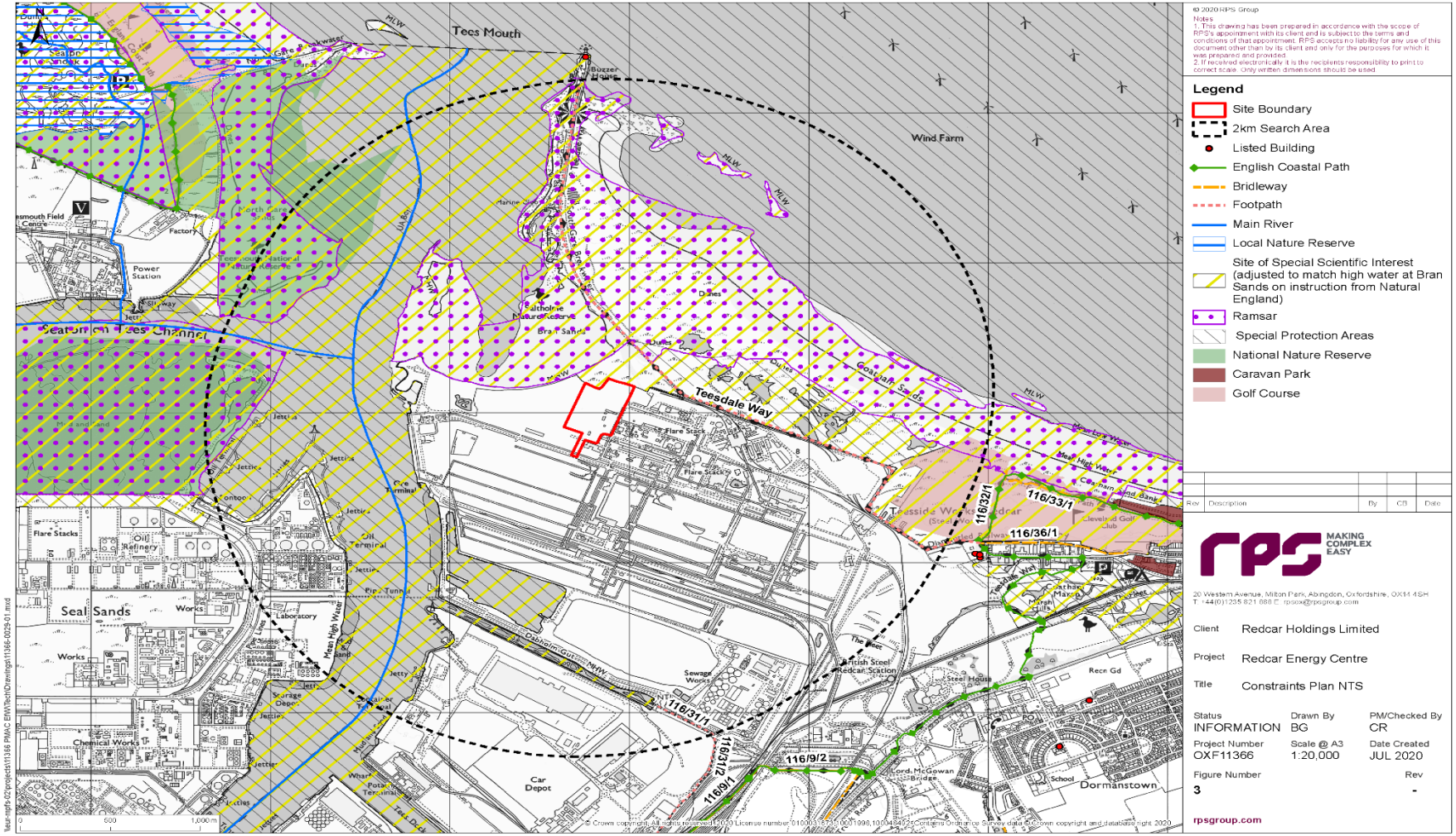

Figure 3: Constraints Plan