Ferrybridge D CCGT Power Station

Proposed Combined Cycle Gas Turbine Generating Station
Environmental Impact Assessment Scoping Report

Keadby Generation Ltd

Project Number: 60546352

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Quality information

Prepared by	Checked by	Approved by
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1. Introduction

Background

1.1 AECOM Infrastructure and Environment Ltd ('AECOM') has been commissioned by Keadby Generation Ltd a subsidiary of SSE Generation (hereafter referred to as 'the Applicant') to prepare this Environmental Impact Assessment (EIA) Scoping Report to inform the scope and content of an EIA for a proposed Combined Cycle Gas Turbine (CCGT) Generating Station on the site of the Ferrybridge Power Station at Stranglands Ln, Knottingley WF11 8SQ (hereafter referred to as the 'Proposed Development' or 'Ferrybridge D CCGT Power Station)) (see Figure 1).

1.2 The Proposed Development will provide up to 2 gigawatts (GW) of electrical generation capacity and will be constructed largely within the boundary of the existing Ferrybridge Power Station site (and associated land within the ownership of the Applicant), although it will also include a gas supply pipeline connection to the National Transmission System (NTS) outside the existing Power Station site.

1.3 This Scoping Report considers the environmental context of the Proposed Development Site and the potential environmental impacts of the Proposed Development. Where impacts are considered to have the potential to cause significant environmental effects, these are identified and the proposed approach to be used to characterise the impacts and understand the significance of their effects is outlined. This report also outlines issues perceived to be non-significant which it is proposed do not require formal assessment as part of the EIA.

1.4 The EIA is an iterative process that feeds into the engineering design process to mitigate significant environmental effects where they are predicted to occur. The final design iteration, along with the findings of the EIA will be reported in an Environmental Statement (ES), in accordance with The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017 ('EIA Regulations') and will be submitted with the Development Consent Order (DCO) Application in accordance with Regulation 5 (2)(a) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended) ('APFP Regulations').

Consenting Regime

1.5 The Proposed Development falls within the definition of a 'nationally significant infrastructure project' (NSIP) under Section 14(1)(a) and 15(2) of the Planning Act 2008 as a 'generating station exceeding 50 MW'. It is also a 'Schedule 1' development under the EIA Regulations as it constitutes "Thermal power stations and other combustion installations with a heat output of 300 megawatts or more". As such, an EIA is required for the Proposed Development and an ES must be prepared in accordance with these Regulations to accompany the DCO application.

1.6 As a NSIP project, the Applicant is required to seek a DCO to construct and operate the power station, under Section 31 of the Planning Act 2008. The DCO application will be prepared in accordance with Section 37 of this Act and secondary legislation including the EIA Regulations and the APFP Regulations (detailed above). The DCO application will be submitted to the Planning Inspectorate (PINS) who will examine the application and make recommendations to the Secretary of State, who will subsequently determine whether or not a DCO should be granted for the Proposed Development.

1.7 Figure 2 illustrates the Indicative DCO Site boundary, which comprises the proposed generating station and associated infrastructure including water and electricity connections. A gas connection will also be required, but the connection point and route for this is not yet defined. The indicative areas of search for the gas connection are shown on Figure 2.

1.8 A description of the Indicative DCO Site and Proposed Development is presented in Sections 2 and 3 of this report.

1.9 As the Applicant proposes to provide an Environmental Statement with the Application for a DCO, this Report constitutes the Applicant's notification under Regulation 6 (2a) of the EIA Regulations that it proposes to provide an Environmental Statement in respect of the Proposed Development.

Objectives of Scoping

1.10 Having determined that the Proposed Development requires an EIA ('screening'), scoping forms the next key stage of the EIA process, providing a framework for identifying likely significant environmental impacts arising from the Proposed Development and distinguishing the priority issues to be addressed within the ES. Scoping also allows stakeholders an early opportunity to comment on the proposed structure, methodology and content of the EIA.

1.11 This Scoping Report has been prepared as part of a request to the PINS for a formal Scoping Opinion on the information to be provided in the ES, pursuant to Regulation 10 of the EIA Regulations.

1.12 Table 1.1 presents a list of information that should be included in a Scoping Report, as prescribed by Regulation 10 of the EIA Regulation and as highlighted in PINS Advice Note 7 'Environmental Impact Assessment: Screening, Scoping and Preliminary Environmental Information' (PINS, 2015)[1], and the location in this report where the information is presented.

Table 1.1: Information provided in the Scoping Report (based on Advice Note 7)

Description of Information Required	Section in Scoping Report where the Information is Presented
A plan showing: • the DCO site boundary and associated development; • permanent land take required for the NSIP; • temporary land take required for construction, including construction compounds; • existing infrastructure which would be retained or upgraded for use as part of the NSIP; • existing infrastructure which would be removed; and • features including planning constraints and designated areas on and around the site, such as national parks or historic landscapes	Figures 1-3
A description of: • the NSIP Site; • the NSIP development; and • its possible effects on the environment.	Section 2 (Description of the Existing Environment) Section 3 (Project Description) Section 6 (Scope of the Assessment for each environmental topic)
An outline of the main alternatives considered and the reasons for selecting a preferred option	Section 4 (Project Alternatives)
Results of desktop and baseline studies where available	Section 6 (Baseline Conditions for each environmental topic)
Guidance and best practice to be relied upon, and whether this has been agreed with the relevant bodies	Section 6 (Scope of the Assessment for each environmental topic)
Methods used or proposed to be used to predict impacts and the significance criteria framework used	Section 6 (Scope of the Assessment for each environmental topic) and Section 8 (EIA Process)
Any mitigation proposed and predicted residual impacts	Section 6 (Scope of the Assessment for each environmental topic)
Where consequential or cumulative development has been identified, how the developer intends to assess these impacts in the ES	Section 8 (EIA Process)

[1] It is noted that this advice note has not been updated since the implementation of the 2017 EIA Regulations. It therefore contains reference to now repealed 2009 EIA Regulations. It is considered, however, that the technical content of this Note remains valid.

Description of Information Required	Section in Scoping Report where the Information is Presented
An indication of any European designated nature conservation sites that are likely to be significantly affected by the proposed development and the nature of the likely significant impacts on these sites	Section 2 (Description of Existing Environment); there are no internationally designated sites located within 20km of the Site
Where a developer seeks to scope out matters, a full justification for scoping out such matters	Section 7 (Non-Significant Issues)
Key topics covered as part of the developer's scoping exercise	Sections 6 (Potentially Significant Environmental Issues) and 7 (Non-Significant Issues)
An outline of the structure of the proposed ES	Section 8 (EIA Process)

2. Description of the Existing Environment

History of the Main Site

2.1 Ferrybridge 'C' is the third power station to be built at Knottingley on the western bank of the River Aire. The construction of Ferrybridge 'A' took place between 1924 and 1925 and the power station had a generating capacity of 125 megawatts ('MW'). Ferrybridge 'B' (generating capacity of 300 MW) was consented in April 1953 and constructed between 1955 and 1957. Ferrybridge 'A' was closed in 1976. The chimneys were demolished and the boiler room and turbine hall converted into offices and workshops. Ferrybridge 'B' operated until 1992, when it was closed and demolished.

2.2 Ferrybridge 'C' was constructed to the west of the sites of Ferrybridge 'A' and 'B' further from the River Aire. It was consented in August 1961 by the then Minister of Power as an extension to the existing generating station "…by the addition of an area of approximately 300 acres and the construction of a new section to be known as Ferrybridge "C" Generating Station…". The Central Electricity Generating Board ('CEGB') started construction of Ferrybridge 'C' later in 1961. The Power Station first supplied electricity to the National Grid on 27 February 1966 and was completed in 1968.

2.3 The Power Station as built comprised four coal-fired boiler units, each with a generating capacity of up to 500 megawatts ('MW'), eight concrete natural draft cooling towers, two emissions stacks, boiler and turbine houses and an electrical switch house as well as workshops and an administration block. The Power Station also included four 17.5 MW gas turbine generators (two were retired in the late 1990s) to provide the ability to start the coal-fired plant in the absence of an external power supply.

2.4 In September 2001 the Secretary of State for Trade and Industry granted consent under Section 36 of the Electricity Act 1989 for the installation of flue gas desulphurisation ('FGD') plant to two of the coal-fired boiler units (Units 3 and 4). The FGD works were commenced in 2006 with the plant becoming operational in 2009. The units not fitted with FGD plant (Units 1 and 2) were closed in 2014.

2.5 Following damage in a fire in 2014, Unit 4 never fully operated in FGD mode and shut down in 2015. The last remaining unit (3) ceased generating electricity on 31 March 2016.

The Proposed Development Site

2.6 For the purposes of this report, the Proposed Development Site is split into two linked areas – the 'Main Site' and 'Gas Connection Search Areas' (see Figure 2).

2.7 The Main Site encompasses the proposed gas-fired generating station; construction lay down area, electricity and water connections, and access points. The entirety of the land required for these components is within the boundary of the existing Ferrybridge Power Station site and/or the Applicant's existing land ownership although a small additional encroachment into the River Aire may be required to facilitate replacement or upgrade of the existing cooling water abstraction and discharge infrastructure depending upon the selection of cooling technology.

2.8 The Site lies within the administrative area of Wakefield Metropolitan District Council (WMDC), with the boundary of Selby District Council following the River Aire, just beyond the Ferrybridge 'C' Power Station site boundary to the northeast.

2.9 The settlement of Castleford is located across the A1(M) motorway (which runs adjacent to the Site) approximately 750m, at its nearest point, to the west of the Site. The residential area of Brotherton is located immediately to the east of the Site boundary. A number of other houses and residential areas are located in the vicinity of the Ferrybridge power station site.

2.10 The Main Site includes the current footprint of the former Ferrybridge 'C' Power Station site including the coal yard to the north of the existing electricity transmission infrastructure. The site excludes land occupied by the Ferrybridge Multifuel (FM) 1 and 2 complexes to the west of the Main Site boundary and that occupied by the Siniat Ltd plasterboard factory to the east.

2.11 The Main Site can therefore be described as an area of land bounded approximately described by the following boundaries:

- The A1(M) motorway and the River Aire to the north;
- The River Aire and the boundary of Siniat's plant to the east;
- The A1(M) and the site boundaries of FM1 and FM 2 to the west; and
- Hinton Lane and Stranglands Lane to the south (excluding the cricket pitch boundary).

2.12 The Site boundary along the River Aire is currently an approximate centre line along the river, coincident with the WMDC administrative boundary. This is to allow the replacement or upgrade of cooling water infrastructure should this be required.

2.13 The location for the development of the main electricity generating station has yet to be decided and would either be on the former coal yard site or on the site currently occupied by the now redundant coal fired electricity generating station ('Ferrybridge 'C'). The final selection will be determined through ongoing engineering appraisals and is dependent on a number of technical and environmental factors including the selection of appropriate cooling technology, ground conditions, proximity to residential receptors and access to the existing grid and water connections.

2.14 It should be noted that where existing infrastructure is shown within the indicative DCO (Application Site) boundary (Figure 1) such as the structures associated with the Ferrybridge 'C' Power Station (including the eight existing natural draught cooling towers and infrastructure associated with coal handling and storage), these are subject to a separate decommissioning and demolition activity being undertaken by SSE and where existing structures are not required as part of the Proposed Development, these will be removed in advance of the development of the proposed CCGT. Appropriate permissions for the demolition activities have been or are being sought from the relevant planning authority and the Environment Agency as appropriate. The Proposed Development therefore does not include any demolition activities associated with the Ferrybridge 'C' Power Station.

2.15 The Gas Connection Search Areas show the areas under consideration for the gas supply connection to National Grid Transmission gas network and associated infrastructure. At present, there are a number of potential indicative route corridors for the gas connection, both of which are shown on Figure 2.

2.16 These corridors consist of a northern and southern route between the Main Site and Feeder 29 of the National Grid transmission system with a number of sub-options between them.

2.17 The Gas connection search area lies within the administrative areas of Selby District Council (SDC) and North Yorkshire County Council (NYCC).

2.18 The northerly route is approximately described as a connection to Feeder 29 south of the village of Hambleton and running approximately southwest, passing to the north of the village of Burton Salmon before passing through Brotherton Ings lagoons and crossing the River Aire to enter the Main Site to the north at the site of the former coal yard.

2.19 The southern route starts with a connection to Feeder 29 south of the village of Gateforth and runs south west to the course of the River Aire before turning west and crossing the Aire to enter the Main Site to the south near the former coal–fired power station structures.

2.20 As the gas connection route has yet to be finalised, corridors of approximately 250 m width are shown on Figure 2. These corridors will be further evaluated and refined in order to determine the most appropriate route for the pipeline. The pipeline itself will be buried underground at a minimum depth of 1.2m and will be circa 600 to 800 mm in diameter, although a wider width will be required to facilitate its construction. (estimated 30-40m construction width).

The Main Site

2.21 The purpose of the Proposed Development is to utilise the former Power Station site for future power generation purposes, by installing a high efficiency gas-fired CCGT power station that can achieve a similar, or greater, electrical output capacity to the former coal-fired power station whilst reducing carbon

and other pollutant emissions, avoiding the need for solid fuel handling, transport and storage and reducing the footprint of the power station itself. The proposed CCGT will therefore be a more efficient, smaller and cleaner replacement power station than Ferrybridge 'C'.

2.22 The timing of the construction and commissioning of the CCGT plant and the decommissioning and demolition of the existing coal-fired plant is still under review. There is, however, not expected to be any significant overlap in the timing of the coal-fired plant decommissioning and demolition works and the construction and operation of the CCGT.

2.23 The Proposed Development will connect to the existing National Grid 275 kV sub station within the Power Station site.

2.24 The Main Site currently comprises the former coal-fired power station, including the sub-station, turbine and boiler houses, cooling towers, a range of other buildings and structures, the main coal stockyard and associated rail loop, access roads and open storage areas.

2.25 Vegetation within the Main Site is limited, with the majority of the Main Site comprising hardstanding, buildings/structures and bare ground, although there are areas of woodland around the Main Site boundaries.

2.26 A number of environmental receptors have been identified within the vicinity of the Main Site, each of these are detailed below and under each environmental discipline (note this may not be an exhaustive list at this stage). All distances are given as the shortest distance between the receptor and the closest point of the Main Site boundary (see Figure 2).

Residential

2.27 The following settlements:

- The village of Ferrybridge immediately to the south of the Main Site boundary, in particular the residential area off Stranglands Lane and the farms and bungalows on Kirkhaw Lane;
- The village of Brotherton, immediately to the east of the Main Site boundary at its closest point;
- Oakland Hill Park, a residential community located approximately 450m to the west of the Main Site boundary at its closet point on the opposite site of the A1(M) motorway;
- The town of Pontefract located approximately 500m to the south of the Main Site Boundary at its closest point on the opposite site of the A1(M) road; and
- The town of Castleford located approximately 750m to the west of the Main Site Boundary at its closest point on the opposite site of the A1(M) road.

2.28 In addition, Hall Farm is located approximately 300m north of the Main Site boundary and Holmfield farm is located approximately 400m west of the Main Site boundary at their closest points both on the opposite site of the A1(M) road.

Traffic and Transport

2.29 The A1(M) runs north-south along the western boundary of the Site with the junction with the M62 located approximately 500m to the southwest of the Main Site boundary at its closest point.

2.30 The main existing access to the site is off the B6136, Stranglands Lane which runs approximately east-west along the southern boundary of the Main Site. A second access is located at the end of Kirkhaw Lane which joins Stranglands Lane to the south east of the Main Site.

2.31 The closest motorway access is Junction 33 of the M62 (located approximately 2km south of the Main Site) which provides access to both the A1(M) and the M62 via the A162 which runs north-south, and via Stranglands Lane .

Ecology

2.32 The nearest statutory and non-statutory nature conservation designations are:

- Fairburn and Newton Ings Site of Special Scientific Interest (SSSI), which lies approximately 0.85 km northwest of the Main Site. This site has been designated for its value as wetland habitat;
- Well Wood Local Nature Reserve (LNR), which lies approximately 1.2 km northwest of the Main Site; and
- Fairburn Ings Local Nature Reserve (LNR), which lies approximately 1.5 km northwest of the Main Site and encompasses part of Fairburn and Newton Ings SSSI;
- Fryston Park Local Wildlife Site (LWS) located north west of the Main Site boundary. Immediately north of FM2. Since its designation, this woodland area has been separated from the main part of the LWS by the construction of the A1(M) motorway, leaving this 3.4 hectares of woodland isolated on the east side of the motorway.
- Bank of River Aire, Fairburn – Brotherton Site of Importance for Nature Conservation (SINC) is associated with the opposite bank of the River Aire to the Main Site, and is located immediately north of one of the potential gas connection corridors.

2.33 There are no international nature conservation designations (Natura 2000) sites within a 20 km radius of the Main Site, the nearest being Skipwith Common Special Area of Conservation (SAC) which is located just over 20 km to the northeast, and Thorne Moor SAC which is located approximately 24 km to the southeast.

2.34 In addition to nature conservation designations, Wakefield Metropolitan District Council Site Specific Policies Local Plan identifies areas of strategically important habitats that are together referred to as the Wakefield Habitat Network (WHN). The WHN includes Fryston Park and other peripheral habitats within the Main Site, as well as the River Aire adjacent to the Main Site.

Hydrology/ Flood Risk, Geology and Hydrogeology

2.35 The River Aire, an Environment Agency Main River, flows from north to south along the eastern boundary of the Main Site. In addition, Fryston Beck, classified as an Ordinary Watercourse, collects run off from the A1(M) motorway and land to the west of the motorway, passes through the Site (partially culverted) and discharges into the River Aire close to the south eastern corner of the Main Site. Part of the drain running around the perimeter of the former Coal Yard at the northernmost part of the Main Site is also classified as an Ordinary Watercourse.

2.36 The north of the Main Site (the coal yard) and land to the eastern boundary lies within an area classed by the Environment Agency as being in Flood Zone 2 (areas at risk of flooding between 1 in 100 and 1 in 1,000 year fluvial flood, or between 1 in 200 and 1 in 1,000 year tidal flood). Land to the south (former Ferrybridge ‘C’ Power Station) is located in Flood Zone 1 (areas at risk of flooding from fluvial and tidal flood events less than 1 in 1000 years).

2.37 The Main Site boundary, to the east and northwest, lies directly adjacent to areas located in Flood Zone 3 (areas at risk of flooding from a 1 in 100 year or greater fluvial flood or a 1in 200 year tidal flood) with the flood extent encroaching on to the Site in small areas.

2.38 The Geology of the site is understood to be made ground overlying a superficial geology of glaciofluvial sands and alluvium across most of the site with the Breighton Sand Formation underlying part of the southern part of the Main Site.

2.39 The solid geology is understood to comprise primarily of Dolostone of the Cadeby Formation.

2.40 The superficial geology is classed as a Secondary ‘A’ Aquifer with the solid geology classed as a Principal Aquifer. Groundwater vulnerability is classed as high.

Cultural Heritage

2.41 None of the structures on site appear in List of Buildings of Special Architectural and Historic Interest. SSE has also received certification from Historic England that no such listing will be applied to the site within 5 years (from the date of confirmed certification, 17 July 2017).

2.42 The search area for all designated heritage assets has been set to 3km, however, those assets of the highest significance i.e. Grade I and Grade II* listed building and scheduled monuments will be included in an extended study area of 5km.

2.43 There are 6 Scheduled Monuments (SMs) within this study area. These are:

- Ferrybridge Henge, consisting of a prehistoric enclosure, and two round barrows located due south of the Main Site on the opposite site of Stranglands Lane;
- Ferry Bridge, crossing the River Aire approximately 250m west of the south-eastern point of the Main Site boundary;
- St John's Priory, Pontefract, located approximately 2km to the south-west of the Site;
- Pontefract Castle, located approximately 2.5km to the south-west of the Site;
- Steeton Hall medieval manor, located approximately 5km to the north-east of the Site; and
- Fairburn Ings located 3km to the north-west.

2.44 There are two Conservation Area located within 3km of the Site:

- Knottingley, 300m to the south-east;
- Pontefract located approximately 3km to the south-west of the Main Site;

2.45 There are no listed buildings located within the site boundaries; however, there are a number of listed buildings located within 3km of the Site, including;

- Church of St. Edwards;
- Manor House to the north-east,
- Ferry Bridge;
- The main building for Ferrybridge A site to the east;
- Buildings associated with Fryston Hall Farm in the north-west;
- Church of St. Andrew to the south; and
- Ferrybridge War Memorial to the south.

2.46 There are also listed buildings located within Pontefract, Hillam, Brotherton, Ledsham, Byram and Knottingley.

2.47 There are two registered parks and gardens within the assessment area, Friarwood Valley Garden in Pontefract and Ledston Hall and Park located over 4km to the north-west. The ZTV will be used to assess if these assets are to be included within the extended study area.

Landscape

2.48 The Main Site lies within National Character Area 30 (Southern Magnesian Limestone) which features slow rolling ridge running north-south which is intersected by river valleys running west-east. Of particular relevance to the Site is the River Aire. The Character Area has an agricultural context but is heavily influenced by urban and industrial infrastructure with mines, shale tips, transport routes, power lines and industrial settlements, including the immediate setting of Ferrybridge 'C' power station which dominates the local character.

2.49 The Site is located within the Limestone Escarpment local Landscape Character Type (Landscape Character Assessment of Wakefield District, (Wakefield Metropolitan Borough Council, 2004) and is

described as being predominantly urban around Castleford and Pontefract although contains several areas of woodland such as Fryston Park, Well Wood and Holywell Wood.

2.50 Although the Site is not specifically covered by any landscape related designations the West Yorkshire Green Belt and designated Green Corridors (WMDC) lie immediately to the west of the Site.

The Gas Connection Search Area

2.51 As discussed above, a number of corridors are currently under consideration for the gas connection to the north of the Main Site. These search areas are shown on Figure 2.

2.52 All indicative gas connection corridors comprise mainly agricultural land but also include roads, railway lines, the River Aire and a number of drains and ditches. The gas connection route will be designed to avoid, wherever possible, residential areas, woodland and other major technical and environmental constraints. A description of the environmental constraints for both route options is outlined below.

Residential

2.53 The settlements of Burton Salmon, Birkin and Knottingley lie in close proximity to one or more route corridors.

Traffic and Transport

2.54 Whichever route is selected, a crossing of the A162 to the west of the Main Site will be required. In addition a number of minor (C class) roads may require crossings (depending on the route selected. These include:

- Ledgate Lane in Burton Salmon;
- Fairfields Lane and Woodlands Lane, south of the village of Hillam;
- Hillam Common Lane between the villages of Hillam and Gateforth;
- Roe Lane, north of the village of Birkin;
- Pale Lane, south of Gateforth;
- Birkin Lane between the villages of Byram and Birkin;
- Birkin Lane, north of the village of Birkin;
- Intake Lane between the villages of Beal and Birkin; and
- Haddersley Road between the villages of Birkin and West Haddersley.

2.55 A number of Public Rights of Way (PRoW) are also crossed by the routes, but no national trails.

2.56 All routes require a crossing of the East Coast Mainline railway line.

Ecology

2.57 There are no international, national or local statutory nature conservation designations on, or in the likely zone of influence of, the alignment of any of the potential routes.

2.58 Desk study information has not yet been obtained to allow identification of all non-statutory nature conservation designations on, or in the likely zone of influence of, the alignment of any of the potential routes. The only designation currently known is:

- Bank of River Aire, Fairburn – Brotherton Site of Importance for Nature Conservation (SINC), which lies immediately north of one of the potential gas connection corridors.

2.59 In addition to nature conservation designations, Wakefield Metropolitan District Council Site Specific Policies Local Plan identifies areas of strategically important habitats that are together referred to as the

Wakefield Habitat Network (WHN). The WHN includes the River Aire at the crossing points for the potential routes.

Hydrology/ Flood Risk, Geology and Hydrogeology

2.60 All of the routes will require a crossing of the River Aire in order to access the Main Site. No other crossings of this river are envisaged.

2.61 There are numerous small watercourses and field drains under the jurisdiction of the Selby Area Internal Drainage Board and Lead Local Flood Authority that may require crossing.

2.62 The routes cross land designated as Flood Zones 1, 2 3a and 3b – functional floodplain. Flood Zone 3b comprises land where water has to flow or be stored in times of flood. The southern route, adjacent to the River Aire, passes through an EA flood storage area.

2.63 There are no historical or active landfills within 1km of any of the routes.

Cultural Heritage

2.64 With the exception of the Ferry Bridge (see above), there are no other Scheduled Monuments within 250m of any of the pipeline routes. There is one conservation area, Hillam and there are 5 listed buildings, namely:

- The main building for Ferrybridge A site;
- Old toll house, Ferrybridge;
- Ferrybridge War Memorial;
- Birkin House; and
- Burton Salmon War Memorial.

2.65 The western part of the site is located close to a prehistoric landscape. Excavations were undertaken as part of the construction of the A1(M) in the vicinity of the site. At the Holmfield Interchange to the south-west, a substantial prehistoric settlement was excavated, which included features from the Neolithic onwards. To the west, an area known as Site D was excavated and a chariot burial was discovered here, along with a number of ring ditches, a possible pit alignment and a Beaker burial of Bronze Age date.

Landscape

2.66 The routes lie within National Character Area 30 (Southern Magnesian Limestone) and National Character Area 39 (The Humberhead Levels), a flat, low-lying and large scale agricultural landscape.

3. Project Description

The Proposed Development

3.1 The Proposed Development comprises the construction and operation of a CCGT power station with a capacity of up to 2 GW, comprising up to two high efficiency combined cycle gas turbine units.

3.2 The CCGT plant will be designed to operate for an expected period of at least 25 years after which ongoing operation will be reviewed and if it is not appropriate to continue operation the plant will be decommissioned

3.3 The Proposed Development will comprise a range of buildings and structures the tallest of which will be the CCGT exhaust stacks (one for each unit, anticipated to be circa 90 m tall). There will also be one or more stacks associated with a proposed 'black start' facility (see paragraphs 3.23 to 3.25 below).

3.4 The main buildings and structures are anticipated to include:

- Two CCGT units, each comprising a turbine hall, heat recovery steam generator (HRSG), exhaust stack, feedwater pump building, air intake filter, electrical building, generator transformer and cooling water pumps;
- A 'black start' or peaking plant facility containing one or more gas turbine(s) or engines associated with one or more stacks;
- A gas receiving area and gas compression building;
- An auxiliary boiler;
- Workshop and stores;
- Electrical, control room and admin building;
- Water treatment plant, fire pumps and laboratory;
- Above ground raw and fire water tank;
- Above ground demineralised water tank;
- Diesel generators, comprising skid-mounted units;
- Waste water treatment plant; and
- Additional access roads and car parking.

3.5 Gas will be supplied via a new pipeline connection to the existing National Grid Transmission gas network to the north east of the Main Site.

3.6 The former Ferrybridge 'C' power station utilised cooling water abstracted from the River Aire, which was cooled through the eight natural draught cooling towers before being returned to the river further downstream. It is proposed that the existing water connection will be retained for use by the Proposed Development, although replacement or upgrade to the intake and outfall structures may be required due to their age and condition, and also to meet new legislative requirements such as the Eels Regulations. The choice of cooling technology to be employed by the Proposed Development has yet to be determined but potentially it will re-use up to four of the existing natural draught cooling towers, subject to their condition.

3.7 Boiler feedwater may be abstracted from the existing groundwater borehole that was used by the former coal-fired power station, or could be sourced from a new groundwater abstraction or an alternative source, as appropriate. This will be evaluated as the project design progresses.

3.8 Electricity generated by the Proposed Development will be exported to the National Grid via the existing National Grid 275 kV sub-station located within the power station site. Additional above ground or below ground cables will be installed between the CCGT and the sub-station.

3.9 At present there are two potential CCGT plant layout options under consideration:

- One with the CCGT power station positioned on the coal stockyard in the north of the Main Site. This area is considered large enough to accommodate the proposed units and also construction laydown and land for future carbon capture and compression equipment[2] (to meet Carbon Capture Readiness (CCR) requirements; or
- Land presently occupied by the existing coal-fired power station. Construction of the new power station would only take place following the full decommissioning and removal of the existing buildings. A portion of land within the red line boundary indicated on Figure 3 would be reserved to meet CCR requirements.

3.10 The layout will be developed following further engineering evaluation, consultation with stakeholders and on conclusion of further technical and environmental studies.

3.11 The main components of the development are described in further detail below.

Combined Cycle Gas-Fired Power Station

3.12 In a CCGT power station natural gas fuel is fired in the combustion system to drive a gas turbine, which is connected to a generator producing electricity. An amount of heat remains in the gas turbine exhaust, and this is passed into an HRSG, a type of boiler, to make steam to generate additional electricity via a steam turbine. The exhaust steam from the steam turbine is condensed back into water which is returned to the HRSG to continue the process.

3.13 The electrical efficiency of a modern CCGT power station is greater than 60%, which is considerably higher than that for a conventional coal, biomass or oil-fired generating plant.

3.14 The fuel source for the turbines will be natural gas supplied via a new pipeline to the north, connecting to the National Grid Transmission network.

Power Generation Process

3.15 The power station is anticipated to consist of up to two CCGT's with a total output of up to 2 GW, the final total being dependent on the selection of turbine manufacturer prior to construction of the plant.

3.16 In the gas turbine, gas will be mixed and combusted with compressed air and the hot combustion gases will expand, rotating the turbine blades at high speed. This will drive the generators to produce electricity for export to the national transmission system.

3.17 The hot exhaust gases from the gas turbine will then be passed through the HRSG to produce high pressure steam. This will in turn be used to drive a steam turbine connected to its own generator thereby maximising electricity generation from the fuel being combusted. The waste gases from the heat recovery boiler will be released into the atmosphere via an exhaust stack, following appropriate treatment.

3.18 Each unit will have its own stack, although these may be co-located. This will be determined during the preliminary design and subject to the findings of the air quality assessment.

3.19 A schematic of the power generation process associated with the Proposed Development is provided below in Plate 1.

[2] This is in order to meet the requirements set out in the EU Directive on the geological storage of carbon dioxide 2009/31/EC (European Commission, 2009) for the Proposed Development to be Carbon Capture Ready. It should also be noted that any carbon capture plant will not form part of the DCO application, since its deployment is currently not viable in the UK, but an area of land has been allocated for it, which will be retained by the Applicant as required. A Carbon Capture Readiness (CCR) report will be prepared for the Proposed Development and submitted to support the DCO application.

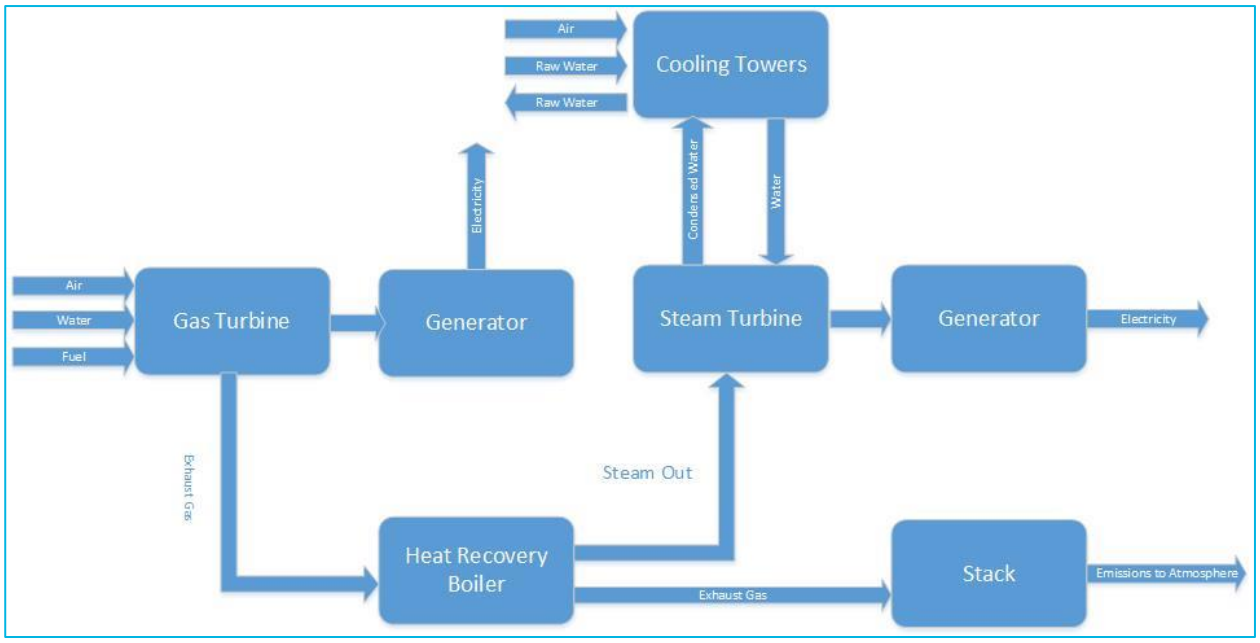

Plate 1: Power Generation Process (for a multi-shaft generation module)

Cooling System

3.20 There is a requirement for a cooling system to condense/cool the steam used in the power generation process once it has been exhausted through the steam turbine, and before it is returned to the boiler for re-use.

3.21 Four types of methods for cooling are available to this type of plant:

- Direct cooling. This involves drawing water from a source, passing it through the plant and then returning it to the source. This is the most efficient cooling method since it requires minimal pumping and no use of fans, however, the water throughput requirement is very high, as is the thermal load discharged back to the received water. It is considered that the use of direct cooling is unlikely to be achievable at Ferrybridge for the Proposed Development due to the limitations in water abstraction and thermal discharge to the River Aire.
- Wet cooling. This involves using the existing water abstraction from the River Aire and either the reuse of up to four of the eight existing cooling towers (which would be retained for this purpose) or installation of new lower level cooling towers. Cooling by natural draught cooling towers is achieved by making use of the natural passage of air up the cooling tower to reduce the temperature of the water through evaporation. This has a lower energy penalty to installing new cooling towers that require additional pumps. Use of wet cooling towers results in visible plume formation but a lower thermal load of the returned water to the river;
- Hybrid-cooling technology. This is essentially a combination of dry-cooling and wet-cooling. Water must still be abstracted from a controlled water source (the River Aire) but by using a bank of low height cooling cells a smaller volume of water needs to be abstracted than for direct water cooling, and the temperature of the returned water is also lower. However, the main benefit of hybrid cooling over the use of wet cooling is that the degree of visible plume formation is substantially reduced, although the use of cooling cells can give rise to visible water plume emissions to air under certain meteorological conditions and also results in a marginally lower plant thermal efficiency than direct water cooling; or
- Dry-cooling technology. This consists of a system of air-cooled condenser fans situated in banks. The steam is condensed directly by air in a heat exchanger (the air cooled condenser) and the condensate is returned to the steam cycle in a closed loop. The air flow is induced solely by mechanical draft from the fans. This cooling method requires electrical energy to operate the fans,

and therefore results in slightly reduced electrical output to the national transmission system; in effect therefore this slightly increases the emission of exhausts gases for each megawatt of electricity exported and reduces the thermal efficiency of the system. They are also comparatively large structures occupying more land area than other cooling options. However, the advantages of air cooled condensers are that they require no cooling water abstraction, treatment or discharge and do not give rise to any visible plumes.

3.22 At this early stage in the project design, the final cooling technology selection for the Proposed Development has not been made, but will be subject to a Best Available Techniques (BAT) assessment, taking into account the environmental effects of the water abstraction and discharge against the efficiency improvements over the use of air cooling. The BAT assessment will be used as part of the DCO application and Environmental Permit application and subject to agreement with the Environment Agency.

Peaking plant and 'Black Start' Capability

3.23 The installation of a black start gas turbine/ engines is also being considered for the Proposed Development, which would also provide the capability of being able to start the CCGT units without any assistance from the national electrical grid transmission system in the event of a total or partial shutdown of the national electrical grid transmission system (so called 'black-start' capability). Thereby the Proposed Development could then be used to help restart the national electrical grid transmission system, whereas power stations without black start capability need to draw power from the transmission system to start operation.

3.24 The inclusion of black start capability would require the use and storage of diesel fuel within the Main Site in addition to the use of natural gas during normal plant operation. This capability is subject to further appraisal to determine if there is a need for including it.

3.25 In any event, should this additional ancillary peaking plant and/ or black start capability be installed, they would be contained within the Main Site boundary. The plant would be installed in a separate building with a smaller footprint and height than the main CCGT buildings. A separate stack (or stacks) would be needed for the emissions from the plant which again would be of lower height than the proposed main stacks. If on site diesel storage is to be undertaken, this would be in one or more above ground tanks, enabling storage of up to several days of fuel.

3.26 Both peaking and black start being considered may comprise a number of gas turbines and gas engines

Electricity Sub Station and Grid Connection

3.27 The Proposed Development will connect to the existing National Grid 275 kV sub station within the Main Site.

3.28 The connection between the CCGT plant and National Grid sub station will comprise either overhead or below ground cables, or a combination of both.

Cooling Water Connection

3.29 Cooling water (if required) will be abstracted from the River Aire at the existing abstraction point, and discharged at the existing discharge point on the south side of the River at Boynton Reach. At present it is assumed that the existing pipework and associated infrastructure in the River is likely to need to be replaced or upgraded as part of the Proposed Development, due to the age and condition of the existing infrastructure. Additional works may also be required at the abstraction point to fulfil the obligations of the Eels (England and Wales) Regulations 2009, which may require the installation of an eel screen.

3.30 The volume of water required for the CCGT Power Station will be less than the abstraction currently required for the coal-fired power station due to the increased efficiency of the CCGT plant, on the assumption that direct cooling is not viable for the CCGT Power Station.

Gas Connection

3.31 The gas supply for the Proposed Development will be via a new connection to the National Grid Transmission gas network (proposed to connect to Feeder 29) approximately 9 km to the north of the Site.

3.32 The route for the connection pipeline and the connection point has not yet been finalised, and two search areas are currently being considered (see Figure 2).

3.33 At the connection point to Feeder 29, a National Grid 'Above Ground Installation' (AGI) compound of approximately 50 x 50 m will be required and an equivalent compound of approximately 50 x 50 m will be required for the Applicant's metering and Pipe Inline Gauging (PIG) equipment. This may be reduced following more detailed engineering appraisal.

3.34 These compounds and the pipeline itself are proposed to be included as associated development within the DCO application.

Access

3.35 It is anticipated at this stage that there will be up to two access points for vehicles during construction and operation: the existing access from Kirkhaw Lane and Hinton Lane. Both are capable of accommodating normal Heavy Goods Vehicle (HGV) traffic however the Kirkhaw Lane access was previously used by power station contractors and maintenance staff especially during shutdowns of the coal-fired power station and is used as the HGV access route for FM1 and FM2 power stations.

Preparation of the Site

3.36 As outlined previously, any structures within the footprint of the Proposed Development that are no longer required for it will have been removed by the Applicant prior to construction of the Proposed Development. Demolition of the existing Power Station is being progressed independently of the Proposed Development, and does not form part of the DCO application.

3.37 The coal stockyard is currently undergoing a full removal of remaining coal stocks in accordance with Environment Agency guidance and permit surrender requirements.

3.38 The existing rail loop will be retained during the construction and operation of the Proposed Development to allow rail access to Siniat and FM2 and also to enable construction materials to be brought to Site by rail if appropriate and feasible. However short term closure of the line may be necessary to facilitate elements of the construction (such as delivery of major plant); this would be done in full consultation with users of the line.

3.39 No substantial changes to existing site levels are proposed and therefore no significant spoil movements are envisaged into or from the Site to support the Proposed Development.

Construction Programme and Management

3.40 Subject to being granted development consent and following a final investment decision, it is anticipated that construction will commence in 2021, and last approximately three years.

3.41 The ES will provide further details of the proposed construction activities and their anticipated duration, along with an indicative programme of each phase of the works. It will also consider the potential cumulative effects of the decommissioning and demolition of the existing Power Station which may be undertaken at the same time as construction of the Proposed Development.

3.42 The ES will also be supported by a framework Construction Environmental Management Plan (CEMP), which will describe the specific mitigation measures to be followed to reduce nuisance impacts from:

- Use of land within the Main Site and Gas Connection Search Areas for temporary laydown areas, accommodation, etc.;
- Construction traffic (including parking and access requirements);
- Earthworks;
- Noise and vibration;
- Dust generation; and
- Waste generation.

3.43 The detailed CEMP will be produced as a Requirement of the DCO and will identify all the procedures to be adhered to throughout construction.

3.44 Contracts with companies involved in the construction works will incorporate environmental control, health and safety regulations and current guidance with the intention that construction activities are sustainable and that all contractors involved with the construction stages are committed to agreed best practice and meet all relevant environmental legislation including: Control of Pollution Act 1974 (COPA), Environment Act 1995 and Hazardous Waste (England and Wales) Regulations 2005.

3.45 All construction works will adhere to the Construction (Design and Management) Regulations 2015 (CDM).

Decommissioning

3.46 The Proposed Development is expected to operate for at least 25 years. At the end of operation it is expected that the Proposed Development will have some residual life remaining and an investment decision would then be made based on the market conditions prevailing at that time. If the operating life were to be extended the Proposed Development would be upgraded and re-permitted in line with the legislative requirements at that time.

3.47 At the end of its operating life, the most likely scenario is that the Proposed Development would be shut down and all above ground structures removed from the Site. There is limited information available at this stage regarding decommissioning methods and timescales.

4. Project Alternatives

4.1 Alternatives to the Proposed Development that have or are being considered include:

- Similar development at an alternative site;
- Alternative development within the existing Power Station site; and
- Alternative technologies.

4.2 A 'no development' alternative would not deliver the additional electricity generation capacity associated with this Nationally Significant Infrastructure Project and which NPS EN-1 recognises is urgently needed (see Section 5), and has therefore not been considered further.

Alternative Sites

Gas-Fired Power Station

4.3 The Main Site has been selected by the Applicant for the development of a CCGT generating station, as opposed to other potentially available sites for the following reasons:

- The site has a long history of power generation;
- The site has excellent grid, water and transport links and is a brownfield site which is considered more attractive to redevelop than a greenfield one for large scale power generation;
- The site is largely in the freehold ownership of the Applicant; and
- The existing coal-fired power station has closed and future redevelopment of the site would potentially allow access to the local experienced employment and contractor pool.

4.4 Within the Main Site, four potential Site Options for the Proposed Development have been identified and considered:

- The area currently occupied by the former coal-fired electricity generating station;
- Brotherton Ings ash lagoons, currently comprising man made lagoons formerly used for the disposal of ash from the coal-fired power station;
- Coal stockyard site option, located within the existing coal stockyard; and
- Adjacent to the new proposed golf course to the west of the A1(M).

4.5 The Brotherton Ings ash lagoons were ruled out due their separation from the rest of the Ferrybridge site by the River Aire. This separation means that there was no possibility of reusing the existing site services (including the existing natural draft cooling towers, abstraction and discharge points) and it would also be more challenging to develop the grid connection to the existing sub-station.

4.6 Similarly, the site adjacent to the new proposed golf course was ruled out because of the separation from the rest of the Main Site, the river and the sub-station by the A1(M). In addition, there is considerable distance to the existing abstraction and discharge points. These factors are considered to significantly affect the cooling options available for this site.

4.7 The Coal Stockyard and existing power generation equipment site options were therefore shortlisted for more detailed analysis, and remain under consideration.

Gas Connection

4.8 In addition to consideration of options for the main CCGT plant, a number of potential route corridors for the gas pipeline to connect to Feeder 29 have also been considered. These can broadly be described as a northern and southern route with a number of branch options between.

4.9 The southern route runs from a tie in at Feeder 29 south of the village of Gateforth (adjacent to the proposed connection point for the proposed Knottingley CCGT power station);and runs approximately southwest before turning west to the Main Site at a point north of River Aire at Knottingley

4.10 The northern route runs approximately west from a tie in with Feeder 29 south of the village of Hambleton to the village of Burton Salmon before tuning southwest to the Main Site.

4.11 Three connection routes into the Main Site are also under consideration, two associated with the southern pipeline route and one with the northern pipeline route:

- The southern entry route follows the route of the former ash pipeline, crossing the River Aire near the old North Road bridge to enter the Main Site from the south;
- The western entry is a variation on that route, but crossing the River Aire further north close to Siniat's premises to enter the Main Site from the west; or
- The northern entry route which enters the Main Site to the north by crossing Brothernton Ings and the River Aire.

4.12 These indicative route corridors have been developed with the assistance of a 'heat mapping' exercise which was conducted to develop these routes, taking account of a range of technical and environmental, considerations.

4.13 In addition, the southern routes were subject to an initial ecological appraisal in June 2017 to clarify the potential for great crested newt (GCN) to be present in habitats within the potential zone of influence of the routes. Where possible, sampling of identified potential habitats in the vicinity of the southern route was undertaken for environmental DNA (eDNA) to determine the potential presence or absence of GCN. The result of this work has informed the southern routes.

4.14 Similar work for the northern route has not yet been undertaken due to seasonal constraints on ecological surveys. A desk-based screening has been undertaken to identify waterbodies potentially suitable for GCN, so these can be investigated further (where relevant) in spring 2018 to inform final route selection. At present all routes remain under consideration. These routes are shown on Figure 2

4.15 Alternative gas connections into to the National Transmission System (NTS) have been discounted due to the distance of the Site from other NTS Feeders.

Alternative Developments

4.16 Alternative layouts and technologies for the new CCGT power station will be considered during the design process. A full detailed appraisal of the development options considered will be presented as part of the ES, discussing the rationale for the final site layout and design selection, as well as explaining the flexibility sought within the consent in this regard.

Alternative Technologies

4.17 A brief overview and justification for the chosen technology will be provided in the ES, including the evaluation of what constitutes BAT for this Proposed Development regarding the options currently under investigation mentioned above, for example cooling technology.

5. Planning Policy and need

5.1 This section sets out the main planning policy documents taken into account in terms of defining the scope of the EIA.

National Policy Statements

5.2 The policy framework for examining and determining applications for NSIPs is provided by NPSs. Section 104 of the Planning Act 2008 requires the Secretary of State to determine applications for NSIPs in accordance with the relevant NPSs, unless this would:

- Lead to the UK being in breach of its international obligations;
- Be in breach of any statutory duty that applies to the Secretary of State;
- Be unlawful;
- The adverse impacts of the development outweigh its benefits; or
- Be contrary to any Regulations that may be made prescribing other relevant conditions.

5.3 In July 2011 the Secretary of State for the Department of Energy and Climate Change ('DECC' which has recently been replaced by the Department for Business, Energy and Industrial Strategy) designated a number of NPSs relating to nationally significant energy infrastructure. The NPSs that are considered to be of relevance to the Project include:

- Overarching National Policy Statement for Energy (EN-1) ('EN-1') (Ref 1);
- National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2) ('EN-2') (Ref 2);
- National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4) ('EN-4') (Ref 3); and
- National Policy Statement for Electricity Networks Infrastructure (EN-5) ('EN-5') (Ref 4).

5.4 These documents, from a planning policy perspective, have been the main focus in terms of scoping the EIA.

5.5 Part 4 of EN-1 sets out a number of 'assessment principles' that must be taken into account by applicants and the Secretary of State in preparing and determining applications for nationally significant energy infrastructure. General points include (paragraph 4.1.2); the requirement for the Secretary of State, given the level and urgency of need for the infrastructure covered by the energy NPSs, to start with a presumption in favour of granting consent for applications for energy NSIPs. This presumption applies unless any more specific and relevant policies set out in the relevant NPS clearly indicate that consent should be refused or any of the considerations referred to in Section 104 of the 2008 Act (noted above) apply.

5.6 Paragraph 4.1.3 goes on to state that in considering any project, and in particular, when weighing its adverse impacts against its benefits, the Secretary of State should take into account:

- Its potential benefits, including its contribution to meeting the need for energy infrastructure, job creation and any long-term or wider benefits; and
- Its potential adverse impacts, including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce or compensate for any adverse impacts.

5.7 Paragraph 4.1.4 continues by stating that within this context the Secretary of State should take into account environmental, social and economic benefits and adverse impacts, at national, regional and local levels.

5.8 Other assessment principles include the matters to be covered within any ES, the Habitats and Species Regulations; the consideration of alternatives; criteria for 'good design'; consideration of CHP; consideration of CCS and CCR; climate change adaptation; and grid connection, amongst others.

5.9 Part 5 of EN-1 lists a number of 'generic impacts' that relate to most types of energy infrastructure, which both applicants and the Secretary of State should take into account when preparing and considering applications. These include air quality and emissions; biodiversity; landscape and visual; and flood risk impacts, amongst others. Paragraph 5.1.2 stresses that the list of impacts is not exhaustive, and that applicants should identify the impacts of their projects in the ES in terms of both those covered by the NPSs and others that may be relevant. In relation to each of the generic impacts listed within Part 5 of EN-1, guidance is provided on how the applicant should assess these within their application and also the considerations that the SoS should take into account in decision-making.

5.10 In addition to a number of the assessment principles and generic impacts covered by EN-1 (where relevant to fossil fuel generating stations); EN-2, EN-4 and EN-5 set out the factors (e.g. factors influencing site selection) and 'assessment and technology specific' considerations to be taken into account in the preparation and assessment of applications for fossil fuel generating stations, gas pipelines and electricity network infrastructure; including relevant environmental matters, such as, amongst others, noise and vibration, landscape and visual, air quality, water quality, soil and geology, transport, and biodiversity.

Other Matters that may be 'Important and Relevant'

5.11 In making decisions on applications for NSIPs, Section 104 of the PA 2008 also states that the Secretary of State must also have regard to any other matters that they consider to be both 'important and relevant' to their decision. Paragraph 4.1.5 of EN-1 provides some clarification on the other matters that the Secretary of State may consider both important and relevant. It confirms that these may include development plan documents or other documents in the local development framework.

5.12 EN-1 is clear (reflecting the terms of the Planning Act 2008), however, that in the event of a conflict between these and any other documents and a NPS, the latter prevails for the purposes of Secretary of State decision-making given the national significance of the infrastructure concerned.

National Planning Policy Framework and Planning Practice Guidance

5.13 The National Planning Policy Framework ('NPPF', Ref 5) was adopted in March 2012 and replaced the majority of Planning Policy Statements and Planning Policy Guidance Notes. The policies contained within the NPPF are expanded upon and supported by the 'Planning Practice Guidance', which was published in March 2014.

5.14 The NPPF sets out the Government's planning policies for England and how these are to be applied. It is a material consideration in planning decisions. Paragraph 3 of the NPPF makes it clear that the document does not contain specific policies for NSIPs and that applications in relation to NSIPs are to be determined in accordance with the decision making framework set out in the Planning Act 2008 and relevant NPSs, as well as any other matters that are considered both important and relevant. However, paragraph 3 goes on to confirm that matters that can be considered to be both important and relevant to NSIPs may include the NPPF and the policies within it.

5.15 Policies of particular relevance to the scope of the EIA include promoting sustainable transport; requiring good design; promoting healthy communities; conserving and enhancing the natural and historic environment; and meeting the challenge of climate change and mitigating its effects.

Local Planning Policy

5.16 The Main Site lies entirely within the administrative are of Wakefield Metropolitan District Council (WMDC), whilst the Gas Connection Search Areas lie entirely within the administrative areas of Selby District Council (SDC) and North Yorkshire County Council (NYCC).

5.17 While EN-1 (Ref 1) recognises that local development plan documents may be both important and relevant to decision making; in the event of conflict with an NPS, it is expected that the latter will prevail.

5.18 Within WMDC's area, the following development plan documents will be considered during the EIA process:

- The Wakefield Metropolitan District Council Core Strategy Development Plan Document (Ref 6);
- The Wakefield Metropolitan District Council Development Policies Development Plan Document (Ref 7);
- The Wakefield Metropolitan District Council Waste Development Plan Document (Ref 8); and
- The Wakefield Metropolitan District Council Site Specific Policies Local Plan (SSLP) (Ref 9).

5.19 The SSLP contains designated Employment Zones (EZs). Policy EZ18 Knottingley (Inc. Ferrybridge) refers to land at Ferrybridge Power Station. Policy EZ18 states:

"Within this zone permissible development proposals will be restricted to employment development directly associated with power generation and related infrastructure… Future development proposals must recognise, conserve and enhance the Fryston Park Wood Local Wildlife Site, which is situated in this zone. Development must also take full account of the parts of the site affected by flood zones. In accordance with planning policy proposals for power station and grid and primary substation must pass the exception and sequential tests and be appropriately designed within flood zone areas. This is a large site that will have a significant impact on public transport and will need to be looked at in more detail for, example regarding re-routing services or providing contributions to new services. As the site falls within the Statutory Birdstrike Safeguarding Zone for RAF Church Fenton, the Ministry of Defence should be consulted if the proposals have the potential to increase the number of birds. This site coincides with an area of high archaeological potential therefore a desk-based archaeological assessment will be required, but if this cannot assess the interest a field evaluation will be required. The site has potential ecological value and an ecological survey is required, the creation of an Employment Zone on part of the operational land at Ferrybridge Power Station, for power generation and associated uses related infrastructure only will encourage investment in power generation, including generation from renewable energy sources."

5.20 The following WMDC policies (Ref 7) are of relevance to the EIA of the Proposed Development:

- *Core Strategy:*
  - CS1 - Location of Development;
  - CS4 - Sustainable Transport;
  - CS9 - Transport Network;
  - CS10 - Design, Safety and Environmental Quality;
  - CS13 - Mitigating and Adapting to Climate Change and the Efficient use of Resources; and
  - CS14 - Influencing the Demand for Travel;
  - CS16 - WMDC LDF Core Strategy;
- *Development Policies DPD:*
  - D4 - Sites Designated for Biological and Geological Conservation;
  - D5 - Ecological Protection of Watercourse and Water Bodies;
  - D6 - Wildlife Habitat Network;
  - D7 - Protection of Trees and Woodland;
  - D8 - Landscape Character;
  - D9 - Design of New Development;
  - D12 - Landscape Design;

- D14 - Access and Highway Safety;
- D15 - Development Affecting Archaeological Sites;
- D18 - Development Affecting Historic Locations;
- D19 - Development Affecting Buildings of Local Interest;
- D20 - Pollution Control;
- D22 - Contaminated Land;
- D24 - Flood Risk;
- D25 – Drainage; and
- D28 - Sustainable Construction and Efficient Use of Resources;

- *Waste DPD:*
  - W7 - Waste Facilities within Development.

5.21 Within the administrative areas of SDC and NYCC, the following development plan documents will be considered during the EIA process:

- The 'saved' policies of the Selby District Local Plan (Ref.10);
- The 'saved' policies of the North Yorkshire Waste Local Plan (Ref.11);
- The 'saved' policies of the North Yorkshire Minerals Local Plan (Ref.12); and
- The Selby District Core Strategy Local Plan (Ref 13).

5.22 The following policies are of relevance to the EIA of the Proposed Development:

- *Core Strategy:*
  - SP1 - Presumption in Favour of Sustainable Development;
  - SP15 - Sustainable Development and Climate Change;
  - SP16 - Improving Resource Efficiency;
  - SP17 - Low Carbon and Renewable Energy;
  - SP18 - Protecting and Enhancing the Environment; and
  - SP19 - Design Quality;
- *Local Plan:*
  - GB2 - Control of Development in the Green Belt;
  - GB4 - Character and Visual Amenity of the Green Belt;
  - DL1 - Control of Development in the Countryside (Development Limits);
  - ENV1 - Control of Development;
  - ENV2 - Environmental Pollution and Contamination;
  - ENV3 - Light Pollution;
  - ENV4 - Hazardous Substances;
  - ENV7 - International Wildlife Sites;
  - ENV8 - National Wildlife Sites;
  - ENV9 - Sites of Importance for Nature Conservation ImportanceENV10 - General Nature Conservation Considerations ;
  - ENV11 - Ancient Woodland;

- ENV12 - River and Stream Corridors;
- ENV13 - Development Affecting Ponds;
- ENV15 - Conservation and Enhancement of Locally Important Landscape Areas;
- ENV20 - Landscaping Requirements;
- ENV22 - Protection of Listed Buildings;
- ENV25 - Control of Development in Conservation Areas;
- ENV27 - Scheduled Monuments and Important Archaeological Sites;
- ENV28 - Other Archaeological Sites;
- T1 - Development in Relation to the Highway Network;
- T2 - Access to Roads; and
- T8 - Public Rights of Way.

5.23 The majority of the 'saved' policies of the North Yorkshire Waste Local Plan relate to waste management facilities (defined in the Plan as "*Facilities associated with the processing and disposals of waste materials*") and are not therefore considered relevant to the Project as it is not a waste management proposal. However, Policy 5/1 'Waste Minimisation', which covers waste arisings from major new development proposals, is of some relevance.

5.24 None of the 'saved' policies contained in the North Yorkshire Minerals Local Plan are considered to be of direct relevance to the Proposed Development. SDC is currently preparing a 'Sites and Policies Local Plan' to deliver the strategic vision outlined in the Core Strategy, which is intended to supersede the remaining saved policies in the Selby District Local Plan. However, the document is at a relatively early stage of preparation and cannot be afforded any significant weight.

5.25 NYCC (with York City Council and North York Moors National Park Authority) is currently preparing a Joint Minerals and Waste Plan (Ref 14). The Plan is at a relatively advanced stage with a Publication Draft having been published. Much of the Proposed Development lies within an area identified for minerals safeguarding on the Policies Map (Area 8) subject to Policy S02 'Development within Minerals Safeguarding Areas'. In addition, the Brotherton Ings Ash Disposal Site is identified as a safeguarded waste site under Policy S03 'Waste Management Facility Safeguarding'.

The Need for the Proposed Development

5.26 The 'need' that exists for new electricity generating infrastructure, such as that proposed, is confirmed in the NPSs for energy infrastructure that were designated by the SoS for BEIS (then the Department of Energy and Climate Change) in July 2011. These NPSs form the primary basis for decisions by the SoS on nationally significant energy infrastructure that falls to be considered under the PA 2008.

5.27 As confirmed above, the NPSs of most direct relevance to the Proposed Development include EN-1, EN-2, EN-4 and EN-5. Of the four, EN-1 sets out the 'need' that exists for new energy infrastructure.

5.28 Part 2 of EN-1 'Government policy on energy and energy infrastructure development' outlines the policy context for the development of nationally significant energy infrastructure. Paragraph 2.1.2 highlights that energy is vital to economic prosperity and social well-being and, as such, it is important to ensure that the UK has secure and affordable energy. Furthermore, producing the energy the UK requires and getting it to where it is needed necessitates a significant amount of infrastructure, both large and small scale.

5.29 Section 2.2 'The road to 2050' confirms the Government's commitment to meet the UK's legally binding target to cut greenhouse gas emissions by at least 80% by 2050, compared to 1990 levels (paragraph 2.2.1). This will require major changes in how energy is generated and used. It identifies a number of key themes of Government energy policy. These include the transition to a low carbon economy; the power sector and carbon emissions; electricity market reform; and the security of energy supplies.

5.30 The section on 'electricity market reform' (paragraphs 2.2.16 - 2.2.19) highlights how around a quarter of the UK's generating capacity is due to close by the end of the decade and that while for the time being electricity margins are healthy there is still the need for investment of over £100 billion in the electricity sector alone by the end of the decade. It goes on to state that the Government is looking at a variety of reforms in order to promote investment so as to replace aging infrastructure.

5.31 Paragraphs 2.2.20 - 2.2.26 of EN-1 deal with the 'security of energy supplies'. Paragraph 2.2.20 states that it is critical that the UK continues to have secure and reliable supplies of electricity as it makes the transition to a low carbon economy. Furthermore, that to manage the risks to achieving security of supply the UK needs:

- Sufficient electricity capacity to meet demand at all times, including a 'safety margin of spare capacity' to accommodate unforeseen fluctuations in supply or demand;
- Reliable associated supply chains (for example, fuel for power stations) to meet demand as it rises; and
- A diverse mix of technologies and fuels (and fuel supply routes), so that it does not rely on any one technology or fuel.

5.32 Part 3 of EN-1 'The need for new nationally significant energy infrastructure' defines and sets out the 'need' that exists for nationally significant energy infrastructure. Paragraph 3.1.1 states that the UK needs all the types of energy infrastructure covered by EN-1 (this covers a range of electricity generating capacity, including gas) in order to achieve energy security. Paragraph 3.1.2 goes on to state that it is for industry to propose new energy infrastructure and that the Government does not consider it appropriate for planning policy to set targets for or limits on different technologies.

5.33 Notably, paragraph 3.1.3 stresses that the SoS should assess applications for development consent for the types of infrastructure covered by the energy NPSs "…on the basis that the Government has demonstrated that there is a need for those types of infrastructure and that the scale and urgency of that need…" is as described for each of them. Paragraph 3.1.4 continues that the SoS should give substantial weight to the contribution that all proposed developments would make toward satisfying this need when considering applications under the PA 2008.

5.34 As such, the need that exists for new energy infrastructure is not open to debate or interpretation and is clearly confirmed by EN-1.

5.35 Section 3.3 of Part 3 of EN-1 sets out why the Government believes that there is an urgent need for new electricity infrastructure, including:

- Meeting energy security and carbon reduction objectives - the need to ensure there is sufficient electricity generating capacity to meet maximum peak demand, with a safety margin of spare capacity to accommodate unexpectedly high demand and to mitigate risks such as unexpected plant closures and extreme weather events; and a diverse mix of power generation to reduce reliance on any one type of generation or source of fuel or power;
- The need to replace closing electricity generating capacity - at least 22 GW of existing electricity generating capacity will need to be replaced in the coming years, particularly by the end of the decade, as a result of tightening environmental regulation and aging power stations (in particular the closure of coal-fired stations); in addition to this about 10 GW of nuclear generating capacity is expected to close over the next 20 years;
- The need for more electricity capacity to support the increased supply from renewables - decarbonisation of electricity generation is reliant on a dramatic increase in the amount of renewable energy; however, some renewable sources (such as wind, solar and tidal) are intermittent and cannot be adjusted to meet demand. As a result, the more renewable generating capacity the UK has, the more generation capacity it will require overall to provide back up at times when the availability of renewable sources is low - with regard to this it is important to note that EN-1 recognises that there will still be a role for fossil fuel generation to provide a cost-effective means of 'back up' electricity generation at short notice to support renewable technologies; and
- Future increases in electricity demand - even with major improvements in overall energy efficiency, it is expected that demand for electricity will increase, as significant sectors of energy demand (such as industry, heating and transport) switch from being powered by fossil fuels to using electricity. As a result of this, total electricity consumption could double by 2050 and, depending upon the choice of how electricity is supplied; total capacity may need to more than double to be sufficiently robust to all weather conditions.

5.36 Paragraphs 3.3.15 - 3.3.24 of EN-1 deal with the urgency of the need for new electricity generating capacity. Paragraph 3.3.15 states that in order to secure energy supplies that enable the UK to meet its climate change obligations to 2050, there is an urgent need for new energy infrastructure to be brought forward as soon as possible, and certainly in the next 10-15 years.

5.37 Paragraph 3.3.23 confirms that the Government believes (based on predictions) that it is prudent, in order to minimise the risk to energy security and resilience, to plan for a minimum need of 59 GW of new electricity generating capacity by 2025. The Government would like to see a significant proportion of the balance come from low carbon generation (paragraph 3.3.22).

The role of fossil fuel generating stations

5.38 Section 3.3 (paragraph 3.3.4) of EN-1 highlights the benefits of having a diverse mix of all types of power generation:

"It means we are not dependent on any one type of generation or one source of fuel of power and so helps to ensure security of supply… the different types of electricity generation have different characteristics which can complement each other…"

5.39 With regard to fossil fuel generating station, paragraph 3.3.4 states that this:

"…can be brought on line quickly when there is a high demand and shut down when demand is low, thus complementing generation from nuclear and the intermittent generation for renewables…"

5.40 EN-1 therefore recognises the continuing role of fossil fuel generation in terms of complementing other types of generation, notably renewables, providing resilience in the UK's energy system and ensuring the security of electricity supplies.

5.41 Section 3.6 of EN-1 deals specifically with the role of fossil fuel electricity generation. Paragraph 3.6.1 states:

"Fossil fuel power stations play a vital role in providing reliable electricity supplies: they can be operated flexibly in response to changes in supply and demand, and provide diversity in our energy mix. They will

continue to play an important role in our energy mix as the UK makes the transition to a low carbon economy, and Government policy is that they must be constructed, and operate, in line with increasingly demanding climate change goals."

5.42 Paragraph 3.6.2 recognises that gas will continue to play an important role in the electricity sector, providing vital flexibility to support the increasing amount of low carbon generation and to maintain security of supply. It goes on to highlight that the UK gas market has diversified its sources of supply of gas in recent years, so that at it becomes more import dependent, companies supplying the market are not reliant on one source of supply. This protects the UK market from disruptions to supply.

5.43 Paragraph 3.6.3 confirms that some of the new conventional generating capacity needed in the UK is likely to come from new fossil fuel generating capacity in order to maintain security of supply and to provide flexible back-up for intermittent renewable energy, particularly from wind. It does however note that fossil fuel generation produces atmospheric emission of carbon dioxide but that the amount produced, depends, amongst other things, on the type of fuel and the design of and age of the power station. It goes on to state that at present coal typically produces about twice as much carbon dioxide as gas per unit of electricity generated but that new technology (carbon capture and storage) offers the prospect of reducing the carbon dioxide emissions of both fuels at a level where, whilst retaining their existing advantages, they can also be regarded as low carbon energy sources.

5.44 The continuing need for fossil fuel generation is confirmed at paragraph 3.3.8 of EN-1, as follows:

"… a number of fossil fuel generating stations will have to close by the end of 2015. Although this capacity may be replaced by new nuclear and renewable generating capacity in due course, it is clear that there must be some fossil fuel generating capacity to provide back-up for when generation from intermittent renewable generating capacity is low and to help with the transition to low carbon electricity generation. It is important that such fossil fuel generating capacity should become low carbon, through development of CCS, in line with carbon reduction targets. Therefore there is a need for CCR [carbon capture ready] fossil fuel generating stations…"

5.45 For these reasons, the Applicant considers that there is a clear and compelling national need for the development of a new gas-fired electricity generating station and has selected the Main Site on which to do so for technical, environmental and commercial reasons. The Applicant therefore proposes to seek Development Consent for the construction and operation of a gas-fired power station at the Main Site.

6. Potentially Significant Environmental issues

6.1. The following sections present a discussion of the potential environmental impacts associated with the Proposed Development that it is proposed will be considered as part of the EIA. The methodology and assessment criteria that will be used to assess the potential significance of the identified impacts are also outlined alongside potential mitigation measures for implementation following assessment.

Air Quality

Baseline Conditions: Main Site

6.2. Part of the Site is located within an Air Quality Management Area (AQMA) declared by WMDC due to the possibility of exceedances of the annual average air quality objective for nitrogen dioxide (NO_2), predominantly as a consequence of emissions from motorway traffic. WMDC have declared a total of ten AQMAs in their region.

6.3. Baseline, or existing, background air quality at the Site will be determined using data from nearby representative automatic monitoring stations, supplemented with available Local Authority diffusion tube sampling and Department for the Environment, Food and Rural Affairs (Defra) background air quality maps, where appropriate. The Applicant has been undertaken continuous and periodic air quality monitoring at the Site and in the surrounding area since the construction of FM1 in 2015 and produces annual monitoring reports for the Local authorities and local communities to review. Monitoring on the site itself has demonstrated that the air quality has improved since 2013 and recorded concentrations of nitrogen oxides in the vicinity of the motorway network are now below the air quality objective.

6.4. The assessment will be undertaken in line with the relevant regulations as detailed in Section 5.2 of EN-1 and the guidance provided in Section 2.5 of EN-2.

Baseline Conditions: Gas Connection Search Area

6.5. A second, smaller AQMA in Selby town (New Street/ The Crescent) was designated by SDC in February 2016 due to consistent elevated levels of NO_2 being recorded over a number of years, primarily as a result of traffic emissions. An Air Quality Action Plan has now been drafted for consultation. This AQMA is approximately 6 km to the east of the of the gas connection search area at its closest point.

6.6. Baseline, or existing, background air quality for the Gas Connection Search Area will be determined from available monitoring data and Defra background air quality maps (UK-AIR) (Ref 15).

Scope of the Assessment

6.7. The following potential impacts may be associated with the Proposed Development:

- Emission of pollutants to air from CCGT stack(s) and peaking plant stack(s) during operation;
- Emission of pollutants to air from vehicles associated with construction, operation and decommissioning; and
- Construction dust and mobile plant exhaust emissions generated during construction and decommissioning.

6.8. The Proposed Development, when operational, will emit known pollutants to air, via one or more stacks. These will include the combustion products nitrogen oxides and carbon monoxide, for which Air Quality Objectives (AQS) have been set as part of the National Air Quality Strategy, as well as CO_2 and potentially additional trace pollutants. The plant will be designed to comply with the requirements of the Industrial Emissions Directive (IED, Ref 16) and revised BAT Conclusions of the Large Combustion Plant BAT Reference document (Ref 17) in accordance with Environment Agency guidance (Ref 18).

6.9. An atmospheric impact assessment will be undertaken for the main point source emissions, utilising air dispersion modelling to assess the impact to air quality potentially brought about through the generation

and dispersion of emissions from the Proposed Development. The study will be desk-based and will assess the predicted concentrations of combustion pollutants specifically detailed in the IED, which are potentially hazardous to human health and designated habitats sites, at identified receptors (such as residential homes, schools, designated nature sites) within the local area, as well as the potential effect on the nearby AQMAs.

6.10. The modelling will be based on Emission Limit Values set by the IED and the BAT Achievable Emission Levels as appropriate and with the plant at full operating load, thereby presenting a worst-case scenario in the ES. Should it be deemed appropriate to model lower loads, justification for this will be provided and the load clearly stated in the assessment. Modelling will be undertaken in accordance with Environment Agency guidance (Ref 18).

6.11. The atmospheric dispersion modelling study of operational emissions will be undertaken using the Atmospheric Dispersion Modelling System (ADMS) model, currently version 5.2. ADMS is widely used by industry and the regulatory authorities.

6.12. The dispersion modelling study will be used to determine the most appropriate height for the chimney stacks (for the CCGT and, if installed, black-start or peaking plant) and configuration (single or co-located stacks) based on the resultant maximum short term and long term ground level concentrations predicted.

6.13. Potential impacts on ecological receptors will be assessed, including statutorily designated habitat sites within 15 km of the proposed CCGT plant and non-statutory habitat sites within 2 km of the proposed CCGT plant, in accordance with EA guidance (Ref 18).

6.14. An air quality impact assessment will also be undertaken on the effects of road traffic on the local road network associated with the construction of the Proposed Development, in accordance with the methods outlined in the guidance for local authorities (Ref 19). The Design Manual for Roads and Bridges (DMRB) (Ref 20) screening model will be used supplemented by detailed ADMS-Roads dispersion model as necessary, depending on background concentrations and predicted percentage traffic increase as a result of the Proposed Development. Both tools have been specifically designed to assess the impact of road traffic emissions in the UK.

6.15. Should modelling be required, the assessment would utilise local traffic data attained during the proposed traffic and transport assessment (see the Traffic and Transport section below), including traffic numbers, fleet composition, and average vehicle speeds, to calculate emission fluxes for the above listed pollutants from each road source. A number of traffic scenarios would be modelled using designated HGV routes, including present-day, and a given future date both with and without the Proposed Development and with specific reference to the AQMAs.

6.16. In addition, potential impacts and nuisance from site clearance, construction dust and mobile plant exhaust emissions generated during the construction phase of the plant and any associated pipeline will be considered using a screening assessment (Institute for Environmental Management and Assessment (IEMA, Ref 21), and supplemented by case studies where appropriate. Similar effects during the decommissioning stage will also be considered. Where necessary, mitigation measures will be recommended for the control of dust and site plant emissions during site preparation and construction works to minimise the potential effects.

6.17. National Air Quality Strategy (Ref 22) sets out Air Quality Standards (AQS) and objectives that are intended to protect the most sensitive parts of the population, and therefore compliance with such objectives removes the need for a separate Human Health Risk Assessment (HHRA) for this type of development.

6.18. Given the subjectivity that can occur when attempting to assign a level of significance to a given air quality impact, AECOM has produced a set of quantitative significance criteria for air quality matters. These are based on regulatory and expert guidance.

Noise and Vibration

Baseline Conditions

6.19. As discussed above, a number of residential receptors are located in the area surrounding the Site, including the settlements of Brotherton, Ferrybridge, Knottingley and Castleford and a number of farm properties in the immediate vicinity. The nearest such receptors are Holmfield Farm and Top Farm (430 m west), Manor Farm adjacent to Kirkhaw Lane (500 m south east) and Fryston Hall Farm (1 km north) and residential properties immediately to the south of the wider power station site on Stranglands Lane and to the west at Oakland Hill off Fryston Lane (separated from the Site by the A1(M)). Potential sensitive receptors are illustrated on Figure 6.

6.20. Potential ecological receptors include Fairburn and Newton Ings SSSI to the north of the Site and Fryston Park LWS immediately to the north of the Site.

6.21. Baseline noise monitoring has been undertaken to inform the FM1 and FM2 projects, and this will be utilised within the assessment for the Proposed Development along with supplementary information obtained to inform this EIA. It is, however, anticipated that additional monitoring will be required to reflect the specific site layout and changes that have occurred in the area.

Scope of the Assessment

6.22. The following potential impacts are likely to be associated with the Proposed Development:

- Construction and decommissioning noise and vibration impacts (including construction and decommissioning traffic on public roads);
- Operational noise impacts from the new plant; and
- Operational noise impacts from road traffic on public roads.

6.23. Based on the distance between the Main Site and the nearest residential receptors, significant vibration impacts associated with operational activities are considered unlikely, although they will still be considered as part of the EIA.

6.24. The scope of the noise and vibration assessment will be:

- Identification of nearest noise sensitive receptors;
- Liaison with Local Authorities' Environmental Health Officer(s) to agree scope and methodology of noise assessment, including baseline noise monitoring locations and measurement protocol;
- Establishment of baseline noise levels in the locality; and
- Assessment of the impact of predicted noise levels at the nearest noise sensitive receptors from the construction, operation and decommissioning of the proposed power station and associated connections, including:
  - Construction noise and vibration (including construction traffic on public roads); and
  - Operational noise and vibration (including site traffic on public roads).

6.25. The noise and vibration assessment will be carried out in accordance with the following guidance:

- Overarching National Policy Statement for Energy (EN-1, Ref 1);
- National Policy Statement for Fossil Fuel Electricity Generating Infrastructure (EN-2, Ref 2);
- National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines (EN-4, Ref 3);
- National Planning Policy Framework, 2012, (Ref 5);
- Noise Policy Statement for England, 2010 (Ref 23); and
- Planning Practice Guidance for Noise, 2014 (Ref 24).

6.26. Additionally, reference will be made, but not be limited, to the following:

- British Standard (BS) 5228 'Code of practice for noise and vibration control on construction and open sites. Part 1: Noise (Ref.25) & Part 2: Vibration (Ref.26);
- International Organisation for Standardisation (ISO) 9613-2 'Attenuation of sound during propagation outdoors. Part 2: General method of calculation'(Ref.27);
- BS 4142 'Methods for rating and assessing industrial and commercial sound' (Ref.28);
- BS 7385 'Evaluation and measurement for vibration in buildings'(Ref 29);
- BS 6472 'Guide to evaluation of human exposure to vibration in buildings'(Ref 30);
- Control of Pollution Act 1974;
- Calculation of Road Traffic Noise (CRTN) (DoT, Ref.31); and
- DMRB Volume 11 Section 3 Part 7:' Traffic Noise and Vibration'.

6.27. Baseline noise monitoring requirements will be agreed in advance with the Environmental Health Officer at WMDC. The monitoring procedures will conform to BS 7445: 2003 'Description and Measurement of Environmental Noise', and monitoring will be undertaken in close proximity to local sensitive receptors including weekend and weekday times, ideally (subject to adequate security) over a minimum five day unmanned monitoring period (Thursday to Monday suggested).

6.28. Noise levels associated with enabling and construction works will be calculated (at chosen sensitive receptors) using the data and procedures given in BS 5228. The need for prediction of vibration levels will be further considered depending upon the types of activities required. Additionally, noise increases at sensitive receptors due to any construction traffic on public roads will be calculated according to the methods given in CRTN. The assessment of construction works will include the electrical, water and gas connections.

6.29. The operational noise impact of the Proposed Development will be predicted using computer noise modelling software (SoundPLAN, Cadna-A or bespoke), based on information on plant layout, and the operating conditions and the levels of noise generated by plant items and vehicles, as provided by the client. The modelling software enables a detailed implementation of the proposed equipment and buildings, existing surrounding buildings and ground features. The software implements the methodology in ISO 9613-2 for the calculation of noise levels from industrial sources.

6.30. The significance of the noise impact of the Proposed Development during operation will be assessed using the method given in BS 4142 and World Health Organisation (WHO) guidance (Ref 33). BS 4142 provides a method for rating the acceptability of increases in existing noise levels at noise-sensitive receptors affected by noise from industrial sources at proposed developments, and the WHO guidance provides information regarding assessment of sleep disturbance. Further details of the approach will be discussed and agreed as required with the Environmental Health Officer at WMDC.

6.31. Additionally, the tonal, impulsive and irregular characteristics of the noise emissions from the new power station will be considered and assessed against the prevailing noise climate to the sensitive receptors.

6.32. The construction, operation and decommissioning of the Proposed Development may have a potentially significant impact on traffic flows on local roads around the site. The change in road traffic noise levels, at a selection of relevant receptors, will be predicted using the standard methodology outlined in the CRTN. The predictions will be based on baseline and with-development traffic data provided as part of the proposed traffic and transport assessment (see Traffic and Transport section below).

6.33. The significance of changes in road traffic noise levels will be assessed based on a range of relevant guidance including the DMRB (Ref 32).

Ecology

Baseline Conditions

6.34. Information on nature conservation designations in the vicinity of the Site has been provided in Section 2 and is not duplicated here. The only designation directly associated with the Main Site is Fryston Park LWS. This woodland contributes to the WHN (see Section 2 above), is likely to be considered a priority habitat under Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC Act), and may support populations of protected species. While it has not been recorded from the LWS for a number of years, the woodland has potential to support the regionally rare and nationally scarce green-flowered helleborine (*Epipactis phyllanthes*), a species of orchid.

6.35. Most of the Main Site is currently occupied by the built structures and hard landscaping of Ferrybridge C, and a large area of bare ground associated with the former coal stock yard. As a consequence areas of semi-natural habitat are limited in extent and largely restricted to peripheral areas, and therefore it is considered very unlikely that there will be any habitat or protected species constraints to the progression of works on the Main Site.

6.36. Depending on the final choice of location for the Proposed Development, all built structures will have been removed at the time of construction. All built structures were surveyed in 2017 to determine their potential suitability for roosting bats; no suitable structures were found and no further survey work is considered necessary.

6.37. There are localised areas of young semi-mature plantation and self-sown broad-leaved woodlands on the boundaries of the coal stockyard, where there are also associated areas of dense scrub and small areas of species-poor neutral grassland. At least some of these might be considered priority habitats under Section 41 of the NERC Act. All trees and woodlands are unsuitable for roosting bats. There are also three man-made waterbodies on the edge of the coal stock yard. These waterbodies were surveyed for GCN in 2017, with negative results returned.

6.38. Land between the power station site and the coal stock yard includes a potential area of open mosaic habitat adjacent to the rail loop. This habitat is of limited extent and has developed over railway ballast. It is known to support scattered scrub of butterfly-bush (*Buddleja davidii*), but there is no detailed survey data for this location.

6.39. The River Aire flows along the eastern boundary of the Main Site. An invasive plant survey was undertaken in 2017 for the Ferrybridge C demolition prior approval, encompassing the river and most of the Main Site. This recorded extensive populations of Himalayan balsam (*Impatiens glandulifera*), but no other controlled weed species. The River Aire and adjacent habitats have also been considered for their potential to support otter, but as this work was undertaken for the demolition the result are not fully translatable to the Proposed Development.

6.40. The only other habitats present in association with the Main Site are of relatively limited extent. Ornamental plantings occur locally and were inspected in 2017 for invasive plant species. Fryston Beck flows under the Main Site in an artificially aligned channel. Only a short section of the beck emerges aboveground in the east of the main site, and again only as an artificially aligned channel.

6.41. Currently there is no detailed data on the baseline conditions associated with the potential Gas Connection routes, although a number of ponds have been visited and surveyed to resolve their suitability for GCN. Review of online aerial photography indicates that most of the land associated with the potential routes is under intensive arable cultivation. Other habitats of relatively higher nature conservation importance may occur locally.

6.42. Designated and sensitive sites up to a maximum radius of 20km from the Main Site are illustrated on Figures 4 to 6)

Scope of the Assessment

6.43. The following potential impacts may be associated with the Proposed Development:

- Permanent loss of habitats within the Main Site and at the AGI during construction;
- Temporary impacts on habitats within the Gas Connection route during construction;
- Disturbance of habitats and protected species (including noise, dust and light impacts) in the vicinity of the Main Site and Gas Connection route during construction, operation and decommissioning;
- Temporary and permanent impacts on aquatic habitats and water quality in the River Aire due to construction works at the abstraction and outfall points; and
- Air quality and lighting impacts on ecological receptors in the vicinity of, or downwind of, the Main Site during operation.

6.44. In accordance with good practice, potential impacts on relevant ecological features will be assessed in accordance with Guidelines for Ecological Impact Assessment in the UK and Ireland (Ref 34). This will include assessment of conflicts and compliance with relevant legislation and policy also. Any requirements for impact avoidance and mitigation to remove or reduce potential for significant ecological effects will be identified. Proposals for ecological enhancement will also be made.

6.45. As described in Section 3, an eel screen is expected to be required at the cooling water abstraction from the River Aire to fulfil the obligations of the Eels (England and Wales) Regulations 2009.

6.46. As outlined in the Air Quality section above, the Proposed Development will result in emissions to air. Potential air quality impacts on relevant nature conservation designations will be described in the Air Quality impact assessment, with additional consideration and assessment in the Ecology chapter as appropriate. However as there are no Ramsar or Natura 2000 sites within 20 km of the Proposed Development, there are considered to be no likely significant effects on international nature conservation designations as a result of changes in air quality.

6.47. A summary of the additional ecological surveys (with timescales) proposed to be undertaken to facilitate an adequate assessment of the likely effects of the Proposed Development on designated sites, habitats and protected/ notable species and to adequately inform the DCO application, is provided in Table 6.1 below.

6.48. Surveys for the following species have been scoped out:

- Reptiles – there is no suitable reptile habitat within the Main Site area. Grass snakes (Natrix natrix) may be present in habitats affected by the Gas Connection route options e.g. in ditches/ streams/ ponds and the River Aire and its associated riparian habitat, but there will be no net loss of habitats for this species. Potential impacts are considered avoidable and appropriate mitigation can be specified without a need for survey data.
- Breeding birds – the layout of the Proposed Development within the Main Site is unlikely to coincide with nesting habitats for birds, so impacts are unlikely. Due regard will still be given to the potential for certain Schedule 1 bird species to occur, particularly little ringed plover (Charadrius dubius), see Table 6.1. Given this, and with the stated exceptions, breeding bird surveys are not considered necessary and are not required for purposes of specifying or implementing relevant mitigation. Survey is also not considered to be necessary for the Gas Connection route as the impacts will be temporary and vegetation removal can be programme to be undertaken outside the breeding bird season; and
- Wintering and passage birds – there is potential for the arable farmland crossed by the Gas Connection route to support aggregations of wintering birds. However, the proposed works will be incremental in progression and only require temporary ground disturbance after which habitats will be reinstated. On this basis no adverse impact on the conservation status of wintering birds is likely and in this context surveys are not required; and
- White clawed crayfish (Austropotamobius pallipes) – there are no known records of this species in the lower reaches of the River Aire, and it is reasonable to assume that the species is absent.

Table 6.1: Scope of Ecology Studies and Surveys for EIA

Study/ Survey	Scope/ Methodology	Timing	Main Site	Gas Connection Route(s)	AGI Location(s)	Abstraction & Discharge Point to River Aire
Desk study	Development footprint and Gas Connection Search Area. 1 km radius for protected species records, notable habitats and local nature conservation designations; 5 km radius for national nature conservation designations (SSSIs); and 10 km radius for international nature conservation designations (SPA, SAC and Ramsar sites).	Q4 2017 /Q1 2018	P	✓	✓	✓
Phase 1 Habitat survey	All habitats within the development footprint and Gas Connection Search Area, and immediate surrounds to place site into context (to a maximum distance of 50m out).	April to Aug 2018, surveys may be undertaken early than April for scoping purposes but if so consideration would be given to the need for a second visit in the growing season	✓	✓	✓	✓
Great crested newt – Habitat Suitability Index (HSI) assessment	HSI of all relevant ponds within Main Site, within Gas Connection Search Areas and within 250 m.	April to August 2018	C	✓	✓	✓
Great crested newt – eDNA	eDNA surveys of all relevant ponds identified as potentially suitable for GCN on Main Site, within Gas Connection Search Areas and within 250m.	Mid-April to June 2018	C	✓	✓	✓
Great crested newt – size class assessment	A minimum of six surveys of relevant ponds confirmed to support GCN as a consequence of eDNA survey BUT only if potentially necessary for purposes of protected species licensing.	April to June 2018	x	IR	IR	IR
Bat activity – walked transects	Maximum of one walked dusk/dawn transect per month (depending on the assessed habitat quality and in accordance with good practice guidance).	May to Sept 2018	IR	IR	IR	IR
Bat activity – remote static detector	Maximum of 5 days of automated bat monitoring per month (depending on the assessed habitat quality and in accordance with good practice guidance).	May to Sept 2018	IR	IR	IR	IR

Study/ Survey	Scope/ Methodology	Timing	Main Site	Gas Connection Route(s)	AGI Location(s)	Abstraction & Discharge Point to River Aire
Bat roost potential (BRP)	Site walkover to assess the suitability of buildings and trees for roosting bats.	No seasonal restrictions, but best completed when trees are not in leaf	C	IR	IR	IR
Bat roost – trees	Tree climbing to inspect features identified in the BRP survey. Dusk emergence and dawn swarming surveys where necessary to determine roost presence/ likely absence.	May to September 2018	IR	IR	IR	IR
Bat roost – buildings	Dusk emergence and dawn re-entry surveys of buildings identified with bat roost potential.	May to September 2018	x	IR	IR	IR
Badger	All habitats within the development footprint and Gas Connection Search Area, and immediate surrounds to place site into context (to a maximum distance of 50m out, where accessible).	No seasonal restrictions, but better when badger is reliably active (typically February to October) but vegetation not in peak growth	✓	✓	✓	✓
Fish	Fish surveys of the River Aire at the abstraction and discharge locations	July to Oct 2018	x	x	x	IR
Aquatic macroinvertebrates	Macro-invertebrate survey of affected section of River Aire at abstraction and discharge points.	Sept/ Oct 2018	x	x	x	IR
Schedule 1 bird species	Minimum of three visits. Targeted survey to resolve presence of specially protected species. Main risk species likely to be little ringed plover, but other species will be considered based on habitat and desk study data.	April to June 2018	✓	IR	IR	IR
Otter and water vole	All suitable riparian habitats within Main Site, Gas Connection Search Areas including River Aire and field drainage ditches within Gas Connection Search Areas. Survey during low flow conditions.	May to September 2018 (earlier start possible for otter in isolation)	P	IR	IR	IR
Controlled weed species	All habitats within the development footprint and Gas Connection Search Area, and adjacent land where there is potential for conflict with relevant legislation.	May to October 2018	C	IR	IR	IR
KEY: ✓ = will be undertaken; x = will not be undertaken; C = completed; P = in progress, IR = if required						

Habitats Regulations Assessment

6.49. There are no SACs, SPAs or Ramsar sites (collectively known as Natura 2000 sites) within 20 km of the Main Site (the closest, Skipwith Common SAC is 20 km distant). No adverse impacts are anticipated at this distance, due to there being no likely source-receptor pathways by which impacts might occur. On this basis, Habitat Regulations Assessment is not considered necessary. This is consistent with Environment Agency guidance for environmental permitting which advises a cut off distance of 10 km for assessment of air quality impacts on international designations (except for coal-fired power stations, where the distance is increased).

6.50. The relevant matrices from The Planning Inspectorate (PINS) Advice Note 10: Habitats Regulations Assessment (Ref 35) will be completed as required to ensure a compliant submission.

Water Resources and Flood Risk

Baseline Conditions

6.51. The River Aire is located to the north east and east of the Site and Fryston Beck, a tributary of the River Aire, is located to the south-west and is partially culverted beneath the site. There are a number of other watercourses located either on or in close proximity to the Site including surface water ponds in the north of the Site, and surface water drains to the south and east.

6.52. The Aire and Calder Navigation system begins to the south east of the Proposed Development Site and emerges from the River Aire

6.53. There are also a number of Lead Local Flood Authority and Selby Area Internal Drainage Board watercourses, land drains and ditches crossing the Gas Connection Search Areas including Marsh Drain, Main Drain, Old Eye, The Fleet, Maspin Moor Drain and Brotherton Ings.

6.54. The Applicant holds water abstraction and discharge consents to abstract and discharge cooling water directly from and into the River Aire.

6.55. There are no known surface water bodies with designations for nature conservation importance in hydrological connectivity to the Site.

6.56. The Environment Agency Flood Map identifies that the Main Site, to the south (area of the former Ferrybridge ‘C’ Power Station), lies in Flood Zone 1 whilst land to the north (coal stockyard) and to the east is located in Flood Zone 2. The eastern boundary of the Main Site is located directly adjacent to the River Aire Flood Zone 3 extent which encroaches into the Site is small areas to the east and north east.

6.57. Parts of the Gas Connection Search Areas are also located within Flood Zone 2, Flood Zone 3a and Flood Zone 3b. The definition of these flood zones according to the National Planning Policy Guidance (NPPG) (Ref 36) are:

- Flood Zone 1 is land that has a low probability of flooding (less than 1 in 1,000 annual probability of river or sea flooding (<0.1%));
- Flood Zone 2 is land that has a medium probability of flooding (between 1 in 100 and 1 in 1,000 annual probability of river flooding (0.1-1%), or between 1 in 200 and 1 in 1,000 annual probability of sea flooding (0.1-0.5%);
- Flood Zone 3a is land that has a high probability of flooding (1 in 100 year or greater annual probability of river flooding (>1%), or a 1 in 200 or greater annual probability of flooding from the sea (>0.5%); and
- Flood Zone 3b (functional floodplain) is land where water has to flow or be stored in times of flood. This is usually defined as land with an annual probability of flooding 1 in 20 (5%) or greater, or is designed to flood in an extreme (0.1%) flood.

Scope of the Assessment

6.58. The Proposed Development has the potential to impact surface waterbodies in various ways. During construction, potential impacts include contamination from suspended solids in site runoff and

accidental discharge of pollutants held on site. Preventative measures will be included within the scheme design. Potential impacts during the operational phase include those associated with long-term changes to drainage and flow. These could affect receiving waterbodies in terms of their use and attributes, such as their ability to support aquatic life, dilute and remove pollutants and associated impacts such as erosion and flood risk.

6.59. The scope of the water resources and flood risk chapter will therefore be to consider all controlled surface waterbodies, which are in hydraulic connectivity with the Site, and have the potential to be impacted upon during the life span of the Proposed Development.

6.60. Information from previous assessments at the Site, supported by an updated desk based study, will be used to confirm all potential receptors and to establish the baseline. This will include all available water quality monitoring data from EA monitoring regimes (including the Water Framework Directive (WFD, Ref 37), historical pollution incidents and local abstraction and discharge consents.

6.61. The Humber River Basin Management Plan (Ref 38) will also be utilised to establish surface waterbody status and objectives under the WFD and to establish measures that have been determined to be required for local waterbodies to meet good Ecological Status under the Directive and associated UK Regulations. Consultation will be undertaken with the EA, the Wakefield and Selby Councils, the Selby Area Internal Drainage Board, the Canals and Rivers Trust, and Yorkshire Water in order to obtain all relevant flood risk and water resource quality data and other related information.

6.62. The potential impacts of the Proposed Development on the water environment will be assessed. This includes the potential impacts during both construction and operation and includes an assessment of surface water and food risk. The ES will identify the baseline receptors (and their importance) and conditions both at the Main Site and along the Gas Connection Search Areas and within the surrounding area; it will identify the direct and indirect impacts of the Proposed Development on these resources and identify any key sensitivity.

6.63. Any potential impacts identified will be measured against WFD ecological and chemical status/ potential and objectives. Mitigation measures will be proposed as appropriate with respect to identified impacts on surface waterbodies, and the significance of any residual effects will be presented

6.64. The assessment will be undertaken in consideration of Section 5.15 of EN-2 (Ref 2) and Section 2.5 of EN-4 (Ref 3) and demonstrate that appropriate measures will be put into place to avoid or minimise any adverse impacts.

6.65. In relation to changes in drainage regime, the magnitude of this impact will depend on the proposed extent of hard standing and the implication on run-off rates within the Site. The significance of this impact will be assessed as part of the ES. The proposals will be designed to ensure that sufficient attenuation is provided for storage of surface water run-off, so as to minimise the potential risk of flooding. The volume of attenuation that will be provided on-site will be informed by the results of hydrological modelling that will be undertaken.

6.66. Potential impacts on groundwater are considered in the Geology, Hydrology and Land Contamination section below.

6.67. A Flood Risk Assessment (FRA) is required in accordance with the National Planning Policy Framework (NPPF) (Ref 39) and NPS EN-1 (Ref 1) due to the size (over 1 ha) and location of the Proposed Development (partly in Flood Zones 2, 3 and 3b). The FRA will consider risks to the Proposed Development from flooding as well as identify how, if at all, the risk of flooding will change as a result of development of the site (including taking climate change into account). Where appropriate, recommendations to manage flood risks to an acceptable level will be made, considering the vulnerability of the proposed development to flooding, so that the development remains safe throughout its lifetime. This will inform the design of the Proposed Development (including finished ground and floor levels) as well as the EIA.

6.68. The EIA will also consider the potential for impacts on surface watercourses and waterbodies, including impacts on the River Aire due to the construction of the water abstraction and outfall infrastructure, and impacts on land drains and ditches crossed by the water and gas connections.

Geology, Hydrogeology and Land Contamination

Baseline Conditions

6.69. The Site as an existing power station subject to an Environmental Permit benefits from a substantial quantity of ground condition information, particularly as the coal-fired generation equipment has moved in to the decommissioning phase. This information (both desk based and intrusive) will be used to identify ground contamination (both potential and actual) and to provide a ground condition baseline on which to base the assessment.

6.70. It is anticipated that demolition works may require additional targeted investigation and possibly remediation works. The reports produced as a result of this work will be used to support and refine the baseline assessment of ground conditions.

6.71. The geology beneath the Main Site comprises Made Ground, overlying variable superficial deposits of glaciofluvial sands and gravels, alluvium and Breighton Sand, generally increasing in thickness towards the River Aire. The underlying bedrock is inferred to comprise Cadeby Formation dolostone and has been encountered at shallow depths (<2.0m bgl) during intrusive investigations. Coal mining has taken place at depth beneath the main power station and a mine entry has been identified on site; it is likely that this has been infilled.

6.72. The superficial deposits are classified by the EA as a Secondary A Aquifers and the Cadeby Formation bedrock is classified as a Principal Aquifer. Shallow groundwater has been recorded in some but not all of the monitoring wells over time. Three groundwater abstraction wells are located on site.

6.73. Fryston Beck is located on site and is culverted beneath part of the site. The River Aire runs along the eastern boundary of the main power station site. The Applicant holds discharge consents to discharge water directly into the River Aire.

6.74. The PFA pipeline route largely follows the River Aire to the east of the site, crossing it twice. The pipeline also crosses the Aire and Calder Navigation (canal) as well as a number of field drains.

6.75. Prior to development in the 1960s, the site was largely undeveloped farmland. There were a number of former quarry and sand and gravel pits, some of which are inferred to have been infilled. In addition, waste disposal sites have been identified on site and close to the site boundary. Asbestos is understood to be present in at least one of the tips and other potential contaminants of concern are likely to also be present.

6.76. Many potentially contaminative activities have been undertaken at the site since it was developed as a power station. Given the history of the site and the large volumes of substances / materials stored, potential source areas associated with site operations may exist. Spills / leaks and observations of surface staining have also been reported over time. Although ground investigations have been conducted, not all of the potential source areas have been targeted. A targeted intrusive investigation may therefore be required.

6.77. The 2008 intrusive investigation completed to support the site's (IPPC) Environmental Permit (EP) application encountered free phase product (weathered diesel) by the Package Boiler House (Zone D). A remedial system was installed and it is understood that product continues to be recovered.

6.78. Groundwater monitoring has been completed since 2008 to support the site's EP. To support the surrender of the permit for the main site, soil and groundwater data mirroring that collected in 2008 is likely to be required. In addition, if spill records show that there have been potential losses to ground during the permit lifetime then these locations will also be targeted.

6.79. The surrounding area to the southeast of the main site has a long history of commercial / industrial land use (since the 1930s) and as such, potential off site sources may exist.

Scope of the Assessment

6.80. The following potential impacts may be associated with the Proposed Development:

- Disturbance of contaminated soils and contamination perched groundwater and creation of new pathways to sensitive receptors (including construction workers and controlled waters) during construction;

- Pollution of soils, and controlled waters within or near the Main Site and Gas Connection Search Areas during construction and decommissioning, for example due to the spillage of polluting materials (if an appropriate Environmental Management Plan is not adhered to); and
- Pollution of soils and controlled waters within or near the Main Site and Gas Connection Search Areas during operation, for example due to the spillage of polluting materials (if materials are not appropriately stored at the Proposed Development in accordance with an appropriate Operational Environmental Management Plan and/or an appropriate drainage system is not implemented and maintained).

6.81. A desk based assessment (Phase 1) will be completed to identify potential contaminative uses of the Gas Connection Search Areas. A recent Phase 1 has already been completed for the Main Site. This will be reviewed to determine whether it remains appropriate for the current development and amended or supplemented as appropriate.

6.82. This desk based assessments will identify the potential for land contamination and potential pathways to sensitive receptors and consider the potential for contaminants associated with current and historic land use in and around the Main Site and Gas Connection Search Areas to be present within the footprint of the Proposed Development.

6.83. The results of the desk based assessment and conceptual site model will be used to assess data gaps and uncertainties and, if required an initial scope for additional site investigation, which may also be required to assess possible foundation solutions. It is anticipated that the requirements for any intrusive investigation will be discussed and agreed in advance with the Environment Agency and WMDC /SDC.

6.84. An assessment of potential impacts on existing ground conditions and sterilisation of potential mineral deposits will be undertaken as part of the EIA, including the potential for the Proposed Development to result in land contamination, as defined in the Part 2A of the Environment Act 1995. Consideration will also be given to potential impacts associated with the construction and operation of the Proposed Development and how these will be prevented or minimised.

6.85. Based on the assessment of the baseline and the identification of any potential impacts, the ES will make recommendations for mitigation measures. These may include the recommendation for further intrusive investigation to address residual data gaps or better delineate identified contamination hotspots or plumes, quantitative risk assessment, remediation and validation. It will also make recommendations for possible mitigation measures to be employed by contractors, should any previously unidentified contamination be encountered during the construction phase.

Cultural Heritage

Baseline Conditions

6.86. There are no designated assets within the footprint of the Main Site or within the Gas Connection Search Areas with the exception of the Grade I Listed Building and Scheduled Monument Ferry Bridge (List Entry Number: 1167483, National Heritage List for England (NHLE), Ref 40). The area surrounding the site was subject to an archaeological desk-based assessment and investigative works to inform the original golf course construction (now the site of FM2), which concluded that there was a low potential for archaeological features to be present. The assessment was followed up by an archaeological watching-brief in 2005 by On-Site Archaeology which found that the Site had been repeatedly disturbed during its previous use as a coal and refuse tip in the 19th and early 20th centuries. Further investigations and studies have been undertaken on the wider site to inform the consent applications for FM1 and FM2.

6.87. The Main Site is accordingly considered to have low potential for archaeological features due to levels of modern disturbance.

6.88. Archaeological investigations undertaken prior to the construction of the A1(M) revealed a number of prehistoric features approximately 150 m to the north and northwest of the Site: the most significant being an Iron Age chariot burial. Another SM can be found just over 1 km to the south of the Site comprising of Ferrybridge Henge, a prehistoric enclosure and two round barrows. This was set within a prehistoric landscape, recorded during construction of the Holmfield Interchange.

6.89. There are a number of listed buildings located within 5km of the Site and the corridors associated with the Gas Connection Search Areas pass close to a number of listed buildings.

6.90. A large portion of the proposed site was assessed as part of the FM1 project and as such agreed mitigation measures for construction works are already in place and would be utilised in the construction of the Proposed Development. Within the portion of the golf course that was not assessed as part of the FM1 project; the 1953 OS map depicts a sand and gravel pit within the north-eastern corner. This was infilled prior to the 1965 edition OS map and has itself been truncated by the creation of a water feature for the golf course

6.91. There are two Conservation Areas located within 3 km of the Main Site or the Gas Connection Search Areas, namely, Pontefract and Knottingley.

6.92. There may be further non-designated heritage assets, including archaeological sites, find spots and historic landscape character areas in close proximity to the Main Site and Gas Connection Search Areas which have the potential to experience physical effects and impacts upon their setting.

Scope of the Assessment

6.93. The following potential impacts may be associated with the Proposed Development:

- Physical impacts and/ or impacts on the setting of non-designated heritage assets, including archaeological sites and historic landscape character areas, within the Main Site and Gas Connection Search Areas during construction; and
- Impacts on the setting of designated and non-designated heritage assets, including listed buildings, conservation areas and historic landscape character areas, in the vicinity of the Main Site and Gas Connection Search Areas during construction and operation.

6.94. A desk-based archaeological assessment will determine, as far as is reasonably possible from existing records (including the North Yorkshire and West Yorkshire Historic Environment Records (HERs), Historic England Archive and the NHLE) and visits to relevant archives and local studies libraries, the nature of the archaeological resource within a study area of 1 km for non-designated heritage assets. A larger study area of 3 km, or larger if appropriate, will be used to identify designated heritage assets and the results will be used to identify any impacts that the Proposed Development may have on the receptors. An extended study area of 5km will be used to identify those assets of the highest significance. An inventory of all heritage assets will be cross-referenced to figures and the report narrative. This baseline collation of data will be supported by site visits to identify the potential for any unknown archaeological assets, the potential for survival of archaeology and to establish the setting of identified heritage assets.

6.95. Due to the scale of the Proposed Development there is the potential for the setting of these heritage assets to be impacted; therefore potential setting impacts upon designated and non-designated heritage assets will be assessed. The Zone of Theoretical Visibility (ZTV) (to be undertaken as part of the landscape and visual impact assessment as discussed in the Landscape and Visual Amenity section below) will be used as a tool of assessment to identify areas of visibility, however as the setting of a heritage asset is not a solely visual concept, other aspects such as aural intrusion, experience, and historical associations must also be taken into account. The assessment will follow current professional good practice and guidance including that produced by the Chartered Institute for Archaeologists (CIfA) and Historic England (HE):

- CIfA standard and Guidance for historic environment desk-based assessment (Ref 41);
- CIfA Code of Conduct (Ref 42);
- Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment (Ref 43); and
- Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets (Ref 44).

6.96. It is possible that sufficient heritage information will be available following the desk-based research to provide an adequate baseline assessment for the EIA. However, should this prove not to be the case following the initial assessment, the need for further archaeological evaluation such as geophysical survey will be discussed and agreed with WMDC, NYCC and West Yorkshire Archaeology Service.

6.97. The purpose of the EIA will be to assess the potential impacts of the Proposed Development upon the significance of the heritage resource and to understand the level of harm to that resource. The aim will then be to propose appropriate mitigation to resolve the harm caused, where possible.

6.98. Once all of the potential heritage receptors have been identified, they will be assigned a 'value'. This is not solely a reflection of their designated or non-designated status but is determined through a number of factors including their heritage interest which can be expressed as artistic, archaeological, architectural or historic. The impact from the Proposed Development upon the significance of the heritage assets will then be quantified and expressed within the EIA. This will produce an initial significance of effect of the Proposed Development upon the heritage resource, taking into account any design or embedded mitigation.

6.99. Following the impact assessment process, any potential mitigation strategies required will be considered and recommendations made. The significance of residual effects remaining after mitigation will be assessed according to accepted criteria for assessing heritage assets.

Traffic and Transport

6.100. Road traffic access to the Site will be via the existing access route off Stranglands Lane via Kirkhaw Lane or via Stranglands Lane and Hinton Lane. The Study Area for this appraisal covers the same area as the previous transport work undertaken to support the planning/ DCO applications for FM1 and FM2 which included the following highway network:

- Western Access – Stranglands Lane / Hinton Lane/ Fryston Lane;
- Eastern Access – Stranglands Lane / Kirkhaw Lane;
- Stranglands Lane / Old Great North Road / The Square;
- A162 Ferrybridge Bypass;
- A162 Ferrybridge Bypass / Low Street Roundabout; and
- M62 Junction 33 (with A162).

6.101. Traffic surveys were recently undertaken on the above highway network in April 2017 to support a planning application to extend the operating hours of FM1 to 10pm. Long term Automatic Traffic Count (ATC) data is also available from the Department for Transport (DfT) and Highways England Webtris websites for the A162, Ferrybridge Bypass and the M62 J33 (MIDAS data) respectively. It has been established from the 2017 local counts on Stranglands Lane that the weekday morning and evening peak are 0745–0845 hours and 1630–1730 hours respectively.

6.102. Typical capacities for a variety of road types are provided within the DMRB (Ref 18). The assumed capacities, which are quoted in the DMRB as one-way flows, are 1,020 vehicles per hour in each direction or 2,040 vehicles in two-directions. This is equivalent to 48,960 vehicles per day in two directions for single carriageway roads and 97,920 for dual carriageways. By comparing the hourly flows on the roads examined with the capacity limits indicated above, it is apparent that the roads within the vicinity of the Site are operating well below their respective capacity limits, even at peak times. This would indicate that there is a low degree of sensitivity of the study area, in terms of traffic flow capacities, to changes in these flows.

6.103. The road safety record on the surrounding roads is good with a low accident record. This is against a background of additional FM1 construction and operational traffic from 2013 onwards and FM2 construction traffic since 2015. There are no black spots or repeated accidents that stemmed from highway infrastructure deficiencies. The Kirkhaw Lane / Stranglands Lane T-junction (the proposed site access) has no recorded injury accidents over the last five full years.

Scope of the Assessment

6.104. The following potential impacts may be associated with the Proposed Development:

- Generation of traffic during construction (and decommissioning) affecting the local and strategic road network;
- Generation of traffic during operation affecting the local and strategic road network; and
- Construction of gas pipeline affecting road and rail links and Public Rights of Way (PRoWs).

6.105. The principal vehicle movements are anticipated to be associated with the construction phase of the development. The volume of construction vehicles associated with the delivery of plant and the labour force has not been determined at this stage but based on other similar sized CCGT power station construction projects is likely to be between 600 and 900 one-way vehicle movements per day during the peak construction period.

6.106. Again, based on other similar sized CCGT projects, it is anticipated that during the operational phase of the development, that there will be a work-force of approximately 40 people that will be required on a shift basis to be spread over a 24 hour period. Around 30 corporate staff will also be based at the site. Staff will travel to and from work in a variety of directions. Fuel will be delivered by pipeline and other operational and maintenance consumables are likely to be minimal. Therefore it is considered that the effects of operational traffic would be negligible and a detailed assessment of the operational phase of the development is not proposed for the ES.

6.107. To fully address the impacts of the construction phase on the transport network, a Transport Assessment (TA) will be produced (though this will be confirmed following determination of the number of construction movements, in liaison with WMDC, SDC and NYCC). The scope for the TA will follow the guidelines set out in the DCLG 'Planning Practice Guidance' document (Ref 45). WMDC, SDC, NYCC and Highways England will be consulted so that their specific requirements can be accommodated within the TA scope.

6.108. The traffic and transport chapter in the ES will summarise the salient points from the TA. It will also relate the magnitude and significance of potential impacts to criteria contained in the 'Guidelines for the Environmental Assessment of Road Traffic' (Ref 46).

6.109. The scope of the TA will cover the following key areas:

- A review of national, regional and local transport policy including the National Planning Policy Framework (Ref 5) and the West Yorkshire Local Transport Plan 2011-2026 (Ref 47);
- A description of baseline and future baseline conditions, including link and junction flows (described further above), a review of highway safety issues including examination of personal injury accident data and consideration of accessibility by all main transport modes;
- Calculation of construction traffic flows over the period of construction;
- Distribution and assignment of construction traffic flows to the road network, including the identification of routes for abnormal loads such as the delivery of generators and transformers;
- Local network impact analysis – the size of the study area is to be confirmed with the local authorities and Highways England, and key junctions may be identified by these stakeholders that require detailed capacity analysis;
- Consideration of the local public rights of way for leisure and commuting uses, and whether their use would be affected by the Proposed Development;
- Cumulative impact assessment – including consideration of the traffic likely to be generated by any other current and proposed developments at the Ferrybridge site (e.g. IBA Ash Plant, Demolition of Ferrybridge C, FM2 construction traffic followed by FM2 operational traffic). Careful consideration of the timing of each of these development flows will be given so that appropriate traffic flows are added for each forecast year. The peak months of combined traffic flows will be identified and assessed; and
- The formulation of mitigation measures, such as a Construction Worker Travel Plan to promote sustainable journeys during the construction phase of the development and where possible reduce single occupant car journeys, and a Construction Traffic Management Plan to seek to control the routing and impact that HGVs will have on the local road network during construction.

6.110. A summary of any residual and cumulative impacts will be provided should the proposed mitigation not fully address the impact of the development on the transport network.

Land Use, Agriculture and Socio-Economics

Baseline Conditions

6.111. The WMDC SSLP (Ref. 9) designates Employment Zones. EZ18 Knottingley (including Ferrybridge) refers to land within the Ferrybridge Power Station complex as being intended for employment development associated with power generation and related infrastructure, including generation from renewable energy sources.

6.112. The Economic Regeneration Strategy for the Wakefield District (2007–2015, Ref 48) was produced to tackle the economic decline caused by the deterioration of traditional industries. The strategy aims to identify priorities for future action, and deliver an economically viable and sustainable growth in the region. Priorities of the strategy include:

- Developing enterprise and innovation, by attracting, retaining and supporting knowledge based business; and
- Increasing skills, by developing, attracting and retaining skills needed to create competitive business. 6.9.3

6.113. The Proposed Development is currently primarily occupied by buildings and services for the existing Ferrybridge 'C' Power Station. However, the proposed gas pipeline will cross largely agricultural land.

Scope of the Assessment

6.114. The following potential impacts may be associated with the Proposed Development:

- Temporary loss of agricultural land and disruption to agricultural activities during construction of the gas connection pipeline and AGI;
- Permanent loss of an area of agricultural land (up to 100 x 50 m) at the gas connection point;
- Creation of direct and indirect employment during construction, operation and decommissioning;
- Temporary disruption to PRoWs within the Gas Connection Search Areas during construction of the gas connection; and
- Nuisance and health and safety.

6.115. Potential traffic, noise, air quality/ dust and visual impacts on local residents and other sensitive receptors will be assessed as part of the Traffic and Transport, Noise and Vibration, Air Quality, and Landscape and Visual Amenity assessments described in other parts of this Report.

6.116. The methodology for assessing land use, agriculture and socio-economic impacts will follow standard EIA guidance and will involve:

- Review of relevant baseline conditions at the Main Site/ Gas Connection Search Areas and locality;
- Assessment of socio-economic policy justification for the Proposed Development and the contribution of these activities to SDC's socio-economic policy objectives;
- Estimate of employment generated during the construction, operational and decommissioning phases;
- Assessment of the impact of the Proposed Development on agricultural land and businesses, and PRoWs, that may be affected by the Proposed Development;
- Consideration will also be given to whether there are any impacts that are not assessed in other ES chapters (Traffic and Transport, Noise and Vibration, Air Quality, and Landscape and Visual Amenity) that might affect recreational activities and land use in the immediate surroundings of the Main Site; and
- Assessment of the likely scale, permanence and significance of effects.

6.117. Although the gas connection will affect a relatively large area of Provisional ALC Grade 2 and 3 land, only the area of permanent land take for the AGI and PIG equipment (approximately 0.5 ha) will be permanently affected.

6.118. The social and economic policy context review will consider relevant policy at various levels including: local (WMBC/SDC), regional (Yorkshire and Humber) and national (in terms of urban regeneration and neighbourhood renewal). The assessment will be carried out using a number of recognised data sources including, but not limited to the following:

- Office of National Statistics Labour Force and Neighbourhood Statistics;
- Annual Business Inquiry;
- Annual Population Survey;
- Census 2011; and
- Travel to Work Data.

6.119. Wherever possible the impacts of the socio-economic assessment will be appraised against relevant national standards such as those provided by HM Treasury and Homes and Communities Agency (HCA). Where no standards exist, professional experience and judgement will be applied and justified.

6.120. A summary will be provided of key residual impacts of the Proposed Development and how the Proposed Development fits into local and regional socio-economic objectives, as well as its overall impact on the contribution to the local economy and community.

Landscape and Visual Amenity

Baseline Conditions

6.121. The Main Site lies within National Character Area 30 (Southern Magnesian Limestone) which features a low rolling ridge running north-south which is intersected by river valleys running west-east. Of particular relevance to the Site is the River Aire (located to the north east and east of the Main Site). The Character Area has an agricultural context but is heavily influenced by urban and industrial infrastructure with mines, shale tips, transport routes, power lines and industrial settlements, including the immediate setting of the former Ferrybridge 'C' power station which dominates the local character.

6.122. The Main Site is located within the Limestone Escarpment local Landscape Character Type (Landscape Character Assessment of Wakefield District, Ref 49) and is described as being predominantly urban around Castleford and Pontefract although contains several areas of woodland such as Fryston Park, Well Wood and Holywell Wood.

6.123. Although the Site is not specifically covered by any landscape related designations, the West Yorkshire Green Belt and designated Green Corridors (WMDC) lie immediately to the west of the Site.

6.124. A number of residential areas lie in close proximity to the Site including the edge of Castleford to the west and Brotherton to the east, as well as a number of farm properties to the west and north, and residential properties off Fryston Lane to the West, Kirkhaw Lane to the east and Stranglands Lane to the South. A number of PRoWs and outdoor recreation areas exist within the surrounding area including Pontefract Park and Racecourse, New Fryston and Fairburn Ings, although it is anticipated that any views that may be available will be restricted due to intervening structures and the distance of the view. Other potential key sensitive receptors may include road users and users of facilities and commercial buildings.

6.125. The Gas Connection Search Areas are located entirely within the Humberhead Levels National Landscape Character Area (LCA), which is a *"flat, low-lying and large scale agricultural landscape"* (Ref 50).

6.126. A Landscape Character Assessment was undertaken by SDC in 1999 (Ref 51). The Main Site and Gas Connection Search Areas are located within the River Aire Corridor Local LCA, which is described as follows:

"The River Aire Corridor…was a prime highway for trade and communication and is fringed by strategically sited historic villages. Although much of it is open or semi-enclosed farmland, the character of this river corridor is strongly influenced by large scale industrial and infrastructure development, in particular by power stations and the M62 motorway."

6.127. Sensitive visual receptors including residents, road users and users of PRoWs are located around the Main Site and Gas Connection Search Areas (see description in Section 2 above).

Scope of the Assessment

6.128. The following potential impacts may be associated with the Proposed Development:

- Temporary changes to landscape character and views from sensitive receptors in the vicinity of the Main Site and Gas Connection Search Areas during construction and decommissioning; and
- Permanent changes to landscape character and views from sensitive receptors in the vicinity of the Main Site and AGI during operation.

6.129. The proposed method of landscape and visual impact assessment has been devised to address the specific impacts likely to result from a development of its scale and nature. The methodology draws upon the following established best practice guidance:

- Guidelines for Landscape and Visual Impact Assessment, Third Edition. (GLVIA3, Ref 52);
- An Approach to Landscape Character Assessment (Ref 53);
- Visual representation of development proposals. Technical Guidance Note 02/17(Ref 54); and
- Landscape Institute Advice Note 01/11: Photography and photomontage in landscape and visual impact assessment (Ref 55).

6.130. The EIA process requires that a clear distinction is drawn between landscape and visual impacts, as follows:

- Landscape impacts relate to the degree of change to physical characteristics or components of the landscape, which together form the character of that landscape, e.g. landform, vegetation and buildings; and
- Visual impacts relate to the degree of change to an individual receptor's view of that landscape, e.g. local residents, users of public footpaths or motorists passing through the area.

6.131. The assessment of impacts on built heritage, including impacts on the setting of listed buildings and structures, will be addressed by the cultural heritage assessment – see the Cultural Heritage section above.

6.132. A detailed study of the existing landscape components, character and views of the Site and an identified study area will be carried out in consideration of the following:

- Site context;
- Topography;
- Vegetation including green infrastructure;
- Roads, public rights of way and access;
- Settlement and land-use;
- Landscape character; and
- Representative views.

6.133. This will be supported by and photographs as appropriate. The planning context with respect to landscape character and visual amenity will also be assessed, taking into account relevant European, national, regional and local planning policies. The baseline study will form the basis of the assessment of the predicted impacts of the Proposed Development.

6.134. From the initial site visit and planning policy context review, and based on a stack height of circa 90 m, a 10 km radius study area is proposed for the landscape and visual impact assessment of the Proposed Development. It is not considered that any significant landscape or visual impacts would occur beyond 10 km.

6.135. Up to ten representative views will be identified within the Zone of Theoretical Visibility (ZTV) for the main building envelope and the potential stack, as well as around the AGI for the gas connection. The ZTV will be generated using a bare ground Digital Terrain Model (DTM) and be reviewed in the field against the following criteria in order to determine the selection of representative views which form the basis of the visual assessment:

- Receptor function/ activity;
- Distance from the Site;
- Topography and elevation;
- Degree and period of exposure;
- Designation of the viewing place; and
- Distribution of receptors.

6.136. Up to four accurate Visual Representations of the Proposed Development for agreed representative views (visual receptors) will be produced in line with the guidance within the Landscape Institute Advice Note 01/11 (Ref 55) and Visual representation of development proposals. Technical Guidance Note 02/17 (Ref 54).

6.137. The location of representative views and photomontages will be agreed in consultation with WMDC, NYCC, SDC and LCC as appropriate.

6.138. Where the assessment indicates the need for mitigation as a result of significant effects on landscape character or visual amenity, these will be outlined within the ES. A detailed landscaping strategy including green infrastructure will be prepared in liaison with WMDC as a Requirement of the DCO.

Waste Management

Baseline Conditions

6.139. As a non-operational power station, current waste arisings are not significant. The decommissioning of the existing coal –fired power station and associated assets will generate waste materials but these are being addressed through the separate demolition works being undertaken by the Applicant.

6.140. All waste produced on site is defined as Controlled Waste and is regulated by the Environmental Protection Act 1990, Hazardous Waste (England & Wales) Regulations 2005 (as amended 2009) and Waste (England & Wales) (Amendment) Regulations 2012.

6.141. As a producer of waste, the Applicant has a Duty of Care to ensure that its waste is managed effectively and in full compliance with these above regulations and all applicable guidance including the EA Waste Hierarchy and Technical Guidance Note WM3 (Ref 56).

Scope of the Assessment

6.142. The potential impacts may be associated with the Proposed Development are the generation of hazardous and non-hazardous waste during construction, operation and decommissioning.

6.143. Demolition of the existing structures and any waste generated form it do not form part of this DCO application; however, waste may be generated as a result of potential modification to ground conditions in order to facilitate the new development.

6.144. The volume of waste that is anticipated to be generated is not anticipated to be significant. In the interests of cost and environmental impact, cut and fill volumes will be balanced as closely as possible.

6.145. A Construction Environmental Management Plan (CEMP), which will be produced in draft for inclusion with the ES and finalised following grant of a DCO, will set out how waste will be managed during construction, and opportunities to recycle waste will be explored.

6.146. During the operational phase, waste will be managed in accordance with the Applicant's standard waste management procedures and applicable legal requirements. There is anticipated to be relatively little waste produced from the operation of the Proposed Development, except for general waste associated with maintenance /office/ administrative activities.

6.147. The waste management assessment will involve a desk-based study to identify relevant legislation, sources of information and local strategies and plans, and estimate the likely types and volumes of wastes that are likely to arise at each stage of the Proposed Development.

6.148. Construction waste estimates will be based on engineering calculations, industry benchmark figures and on experience gained from constructing similar facilities. Operational waste will be estimated, based on typical waste figures applicable for power station facilities.

6.149. The potential significance of the projected waste arisings will be assessed in the context of baseline conditions and local infrastructure capacity, and mitigation will be identified if necessary.

Climate

Baseline Conditions

6.150. The baseline conditions for the Climate assessment – specifically, a greenhouse gas (GHG) impact assessment - will be a business-as-usual scenario whereby the Proposed Development does not proceed, for those lifecycle stages scoped into the assessment.

Scope of the Assessment

6.151. To align with the requirements of the EIA Regulations 2017 and associated published guidance (Ref 57), three separate aspects have been considered in scoping the Climate assessment:

- Lifecycle greenhouse gas (GHG) impact assessment: The effect on climate change of GHG emissions arising from the Proposed Development, including how the project will affect the ability of UK Government to meet reduction targets within its carbon budgets;
- In-combination climate change impact assessment: How the Proposed Development may impact the overall resilience of the surrounding environment against the predicted impacts of climate change; and
- Climate change resilience assessment: The resilience of the Proposed Development to impacts from projected climate change.

6.152. The relevance and applicability of each aspect has been considered in the context of the Proposed Development; Table 6.2 presents scoping outcomes and rationale.

Table 6.2: Scoping outcomes for Climate assessment

Aspect	Scoping outcome	Rationale
Lifecycle GHG impact assessment	Scoped in	Due to its nature and purpose, the Proposed Development is considered likely to result in notable GHG emissions impacts, both in terms of GHG emissions arising through and the potential GHG emissions avoided due to repowering.
In-combination climate change impact assessment	Scoped out	Proposed Development is largely within the within the boundary of the existing Ferrybridge Power Station site. The proposed gas supply pipeline to the NTS will lie outside the existing Power Station site, however it is considered unlikely to materially affect the resilience of the local area to climate change impacts once constructed.
Climate change resilience assessment	Scoped in	The Proposed Development will be exposed to predicted

6.153. With regard to the scope of the lifecycle GHG impact assessment itself, construction and operation lifecycle stages have been scoped in due to the size, nature and purpose of the Proposed Development. The decommissioning stage has been scoped out of the assessment, as the decommissioning or renewal of Proposed Development is not reasonably foreseeable and would likely require a separate EIA in any case.

6.154. The climate change resilience assessment will consider resilience in terms of both gradual climate change, and the risks associated with the predicted increase in frequency of extreme weather events. It will consider the resilience and adaptation measures for such risks within the proposed design for infrastructure and assets comprising the Proposed Development; the design of which will be assumed to adhere with current planning, design and engineering practice and codes.

6.155. Outputs from the lifecycle GHG impact assessment and the climate change resilience assessment will be presented in a standalone Climate Change Impact Report.

Cumulative Effects

6.156. An assessment of potentially significant cumulative effects with other proposed developments in the vicinity of the Proposed Development will be undertaken for each of the topics described above, and reported in the ES.

6.157. An initial search of the planning register has identified a number of other known planned developments in the vicinity of the Proposed Development (for which a planning application has been submitted, or which has been specifically requested for consideration by a key stakeholder). These are described below:

- **Ferrybridge Multifuel 2:** A 90 MWe multifuel power station, located at Ferrybridge Power Station (DCO granted in 2015);
- **Knottingley Power Project**: a proposed 1,500 MW CCGT power station including a gas supply pipeline and associated infrastructure located at former Oxiris Chemical Works, Knottingley (DCO granted in 2015);
- **Eggborough CCGT**: The construction and operation of a new CCGT generating station with a capacity of up to 2,500 megawatts, new gas pipeline to the NTS and other associated development. (DCO currently going through examinations
- **Southmoor Energy Centre**: a proposed 26 MWe Energy from Waste facility with CHP potential, located at Kellingley Colliery (planning consent granted in 2015);
- **Thorpe Marsh CCGT Power Station:** a proposed 1,500 MW CCGT power station adjacent to the site of a former coal-fired power station, that has now been decommissioned and demolished (Section 36 consent granted in 2011);
- **Thorpe Marsh Gas Pipeline:** a proposed 18 km buried steel pipeline to transport gas to the proposed Thorpe Marsh CCGT Power Station (described above) (DCO granted 2016);
- **Ferrybridge** 'C' demolition
- **IBA** facility
- **Kellingley** Colliery Business Park

6.158. This list will be refined following discussions with the Local Planning Authority.

6.159. Information on other developments that have the potential for cumulative effects with the Proposed Development will be identified in consultation with the relevant local planning authorities.

Combined Heat and Power (CHP) Assessment

6.160. Although not formally part of the EIA, it is a requirement of the NPS that applicants for all new power stations explore and develop feasible CHP opportunities. This is in order to maximise the use of waste heat and in turn the thermal efficiency of the proposed combustion plant.

6.161. A CHP investigation will be undertaken as part of the DCO application which will involve identifying and contacting potential CHP users in the local area in accordance with the EA CHP Ready Guidance (Ref 60). This will initially be based on examining a map around the Site based on a predetermined economic radius for heat transportation. Should any potential uses be identified, a 'heat map' of the local area would be produced incorporating community, commercial and industrial heat uses and opportunities. Within this 'heat map' area the identified users would then be classified into user sectors. Community opportunities would mainly consider industrial, residential and housing opportunities, though would also include any hotels, leisure centres, large corporate buildings, hospitals, universities, prisons, defence installations and accommodation complexes. Industrial opportunities would be readily identified by the industrial sector of those industries inside the 'heat map' radius.

6.162. The CHP feasibility review will consider the heat availability from the Proposed Development together with future CCR implications and the heat demand opportunities in the locality to justify the approach that will be taken for maximising CHP opportunities for the plant.

Carbon Capture Readiness (CCR) Assessment

6.163. Carbon capture technology and transport of CO_2 will not form part of the DCO application as the commercial deployment of CCS technology is not currently viable within the UK at this time. For the purposes of the DCO application and in accordance with legislative and policy requirements, CCS will be considered through preparation of a standalone supplementary report to the EIA that addresses the requirements of the DECC CCR Guidance (Ref 61).

6.164. In accordance with CCR requirements, the Proposed Development will incorporate an area set aside for the potential future installation of carbon capture technology. It is recognised that technological progress and developments in the regulatory framework for the use of carbon capture technology are likely to occur within the lifetime of the Proposed Development. Therefore, the design of the new power station will be developed with consideration for the possible future retrofitting of carbon capture technology at some future date.

6.165. The CCR requirement means that applicants must demonstrate that CCS technology (of which there are 3 key types: pre-combustion capture, post-combustion capture and oxy-fuel combustion) has been considered as part of their application and that there is sufficient land available for the future retrofit of that technology in the event that it is commercially proven at some point in the future, i.e. that the Proposed Development is considered Carbon Capture Ready (CCR).

6.166. CCR needs to be demonstrable for all new combustion generating stations with a generating capacity at or over 300 MW (and of a type covered by the European Union Large Combustion Plant Directive (Ref 62) as set out in Section 4.7 of the Overarching National Policy Statement (NPS) (EN-1) (Ref 1).

6.167. The CCR Report will outline the footprint required for the carbon capture and compression equipment, based on DECC guidance as amended by the Imperial College paper on space requirements for CCS (Ref 63). It is likely that the area to be used for CCGT construction laydown will (at least in part) be retained for CCR purposes. An appropriate route for the transport of compressed CO_2 will be considered, as well as a potential geological storage site and the high level economics of the feasibility of future retrofit of CCS to the Proposed Development.

7. Non-significant EIA issues

7.1. The aim of the Scoping Stage is to focus the EIA on those environmental aspects that may be significantly affected by the Proposed Development. In so doing, the significance of impacts associated with each environmental aspect becomes more clearly defined, resulting in certain aspects being considered ‘non-significant’. The following section provides a summary of those issues, which have been considered during the preparation of this Scoping Report, and which are not considered likely to lead to significant environmental effects. It is proposed that these will therefore not be considered in the ES.

Electronic Interference

7.2. The proposed maximum building heights and expected temporary construction cranes will be no higher than the existing stacks and cooling towers associated with the Power Station. Therefore an assessment of the Proposed Development’s effect on electronic interference is unlikely to be required.

7.3. Further to this, analogue signals have ceased to be transmitted and have been replaced by digital signals. As such, the Proposed Development’s potential to interfere with television, radio (both analogue and digital) and mobile phone reception is considered negligible.

Aviation

7.4. The Civil Aviation Association (CAA) has a general interest in charting all known structures of 91.4 m (300 feet) or more above ground level. The existing Power Station stacks are 198 m in height, and the cooling towers are 114 m in height. The stacks have lighting at the top for aviation purposes.

7.5. Given the Main Site’s distance from the nearest airfield (Burn (Selby) Airfield, approximately 12 km to the east of the Main Site, and as none of the proposed buildings or structures are expected to be 91.4 m or more above ground level, an assessment of the potential impacts of the Proposed Development on aviation is not currently considered to be required and it is proposed that aviation is scoped out of the EIA.

7.6. The CAA will however be consulted on the Proposed Development to review any requirements for aviation lighting on the stack(s) (after the existing stacks are demolished) and enable the Proposed Development to be charted in future. Should taller stacks or cranes be required than currently expected, the need for an aviation assessment will be reviewed accordingly.

Accidental Events/ Health & Safety

7.7. The description of the Proposed Development in the ES will provide sufficient information to allow the key environmental issues identified to be adequately assessed. Accidental events such as the potential for fuel spillages and abnormal air emissions, and how the risk of these events will be minimised, will be discussed in the relevant chapter of the ES.

7.8. Accidental events will be covered by a brief risk assessment in the ES, which will include reference to the Applicant's overarching principles of emergency management. The majority of emergency response plans and contingency measures will be dealt with in the Environmental Permit, which is regulated by the Environment Agency.

8. EIA Process

EIA Methodology and Reporting

8.1. The ES will set out the process followed during the EIA including the methods used for the collection of data and for the identification and assessment of impacts. Any assumptions made will be clearly identified.

8.2. The EIA process is designed to be capable of, and sensitive to, changes that occur as a result of changes to the design, including any mitigation measures that are incorporated during the EIA. This will be particularly important for the Proposed Development as the design and layout is still being refined, and minor changes are likely to be made following submission of this EIA Scoping Report.

8.3. The EIA is based on a number of related activities, as follows:

- Establishing existing baseline conditions;
- Consultation with statutory and non-statutory consultees throughout the DCO application process;
- Consideration of relevant local, regional and national planning policies, guidelines and legislation relevant to EIA;
- Consideration of technical standards for the development of significance criteria;
- Review of secondary information, previous environmental studies and publicly-available information and databases;
- Physical surveys and monitoring;
- Desk-top studies;
- Computer modelling;
- Reference to current legislation and guidance; and
- Expert opinion.

8.4. Impacts will be considered on the basis of their magnitude, duration and reversibility. Cumulative and combined effects will also be considered where appropriate. Significance will be evaluated on the basis of the scale of the impact and the importance or sensitivity of the receptors, in accordance with standard assessment methodologies (major, moderate, minor and not significant).

8.5. Where likely significant environmental effects are identified in the assessment process, measures to mitigate these effects will be put forward in the form of recommendations to be undertaken as part of the project development.

Structure of the Environmental Statement

8.6. The ES will address the direct effects of the Proposed Development in addition to the likely indirect, cumulative, short, medium and long term, permanent, temporary, beneficial and adverse effects. The mitigation measures envisaged in order to prevent, reduce or where possible offset significant adverse effects will also be described. The concluding chapters will provide a summary of the cumulative and residual impacts.

8.7. The ES will comprise the following set of documents:

- Non-Technical Summary (NTS): this document will provide a summary of the key issues and findings of the EIA in non-technical language.
- Volume I: Environmental Statement: This will contain the full text of the EIA with the proposed chapter headings as follows:

  1 Introduction;
  2 Assessment Methodology;
  3 Description of the Site;
  4 The Proposed Development;
  5 Construction Programme and Management;
  6 Design Evolution and Alternatives Assessment;
  7 Planning Policy Context;
  8 Air Quality;
  9 Noise and Vibration;
  10 Ecology and Nature Conservation;
  11 Flood Risk, Hydrology and Water Resources;
  12 Geology, Hydrogeology and Land Contamination;
  13 Cultural Heritage;
  14 Traffic and Transportation;
  15 Land Use, Agriculture and Socio-economics;
  16 Landscape and Visual Amenity;
  17 Waste Management;
  18 Sustainability and Climate Change;
  19 Cumulative and Combined Effects; and
  20 Summary of Significant Residual Effects.

- Volume II: Figures.
- Volume III: Technical Appendices: these will provide supplementary details of the environmental studies conducted during the EIA including relevant data tables, figures and photographs. This will include the CHP Assessment, FRA and CCR feasibility study. A table outlining the proposed mitigation measures and how they are to be secured will also be provided.

Structure of Technical Chapters

8.8. Chapters 8-18 will be structured based on the following sub-headings:

Introduction

8.9. The Introduction will describe the format of the assessment presented within the chapter.

Legislation and Planning Policy Context

8.10. The Legislation and Planning Policy Context section of the technical chapters will provide an overview of the relevant legislation, planning policy and technical guidance relevant to the assessment.

Assessment Methodology and Significance Criteria

8.11. The methods used in undertaking the technical study will be outlined in this section with references to published standards (e.g. British Standards, Building Research Establishment), guidelines (e.g. DMRB and Institute of Environmental Management & Assessment guidelines) and relevant significance criteria.

8.12. The significance of effects before and after mitigation will be evaluated with reference to definitive standards, accepted criteria and legislation where available. Where it is not possible to quantify impacts, qualitative assessments will be carried out, based on available knowledge and professional judgment. Where uncertainty exists, this will be noted in the relevant technical assessment chapter.

8.13. Specific criteria for each technical assessment will be developed, giving due regard to the following:

- Extent and magnitude of the impact;
- Impact duration (whether short, medium or long term);
- Impact nature (whether direct or indirect, reversible or irreversible);
- Whether the impact occurs in isolation, is cumulative or interactive;
- Performance against environmental quality standards where relevant;
- Sensitivity of the receptor; and
- Compatibility with environmental policies and standards.

8.14. For issues where definitive quality standards do not exist, significance will be based on the:

- Local, district, regional or national scale or value of the resource affected;
- Number of receptors affected;
- Sensitivity of these receptors; and
- Duration of the impact.

8.15. In order to provide a consistent approach to expressing the outcomes of the various studies undertaken as part of the EIA, and thereby enable comparison between effects upon different environmental components, the following terminology will be used throughout the ES to define effects:

- Adverse – detrimental or negative effect to an environmental resource or receptor; or
- Beneficial – advantageous or positive effect to an environmental resource or receptor; and
- Negligible – imperceptible effect to an environmental resource or receptor; or
- Minor – slight, very short or highly localised effect of no significant consequence; or
- Moderate – more than a slight, very short or localised effect (by extent, duration or magnitude) which may be considered significant; or
- Major – considerable effect (by extent, duration or magnitude) of more than local significance or in breach of recognised acceptability, legislation, policy or standards.

8.16. As indicated above, for the purpose of this EIA moderate and major effects will be deemed ‘significant’, and where possible mitigation measures will be identified to reduce the residual effects to ‘not significant’.

8.17. Each of the technical chapters will provide the criteria, including sources and justifications, for quantifying the different levels of residual effect. Where possible, this has been based upon quantitative and accepted criteria (for example, the National Air Quality Strategy objectives or noise assessment guidelines), together with the use of value judgement and expert interpretation to establish to the scale of an effect.

Baseline Conditions

8.18. In order to assess the potential impacts and effects of the Proposed Development, it is necessary to determine the environmental conditions that currently exist on site and in the surrounding area, for comparison. These are known as the ‘existing baseline conditions’. Baseline conditions are

determined using the results of site surveys and investigations or desk based data searches, or a combination of these, as appropriate.

8.19. 'Future baseline conditions', which are the likely future conditions in the study area in the absence of the Proposed Development, will also be considered and described. In particular, consideration will be given to the proposed decommissioning and demolition of the existing coal-fired Power Station, and how this would alter the existing baseline conditions during construction and operation of the Proposed Development. For the purposes of assessment, each chapter will identify a reasonable 'worst case scenario' with regards the decommissioning and demolition project, for example the Traffic and Transport assessment will assume the peak of demolition traffic will coincide with peak construction traffic.

Development Design and Impact Avoidance

8.20. Measures that have been integrated into the Proposed Development in order to avoid or reduce adverse environmental effects will be described. Such measures may include refinement of the design and layout of the Proposed Development to avoid impacts on sensitive receptors, implementation of Construction and Operational Environmental Management Plans, and adherence of relevant legislation, guidance and best practice. The assessment of impacts and effects in the next section takes account of these measures already being in place.

Likely Impacts and Effects

8.21. This section will identify the likely impacts resulting from the Proposed Development. The magnitude of impacts are defined with reference to the relevant baseline conditions (existing or future, as appropriate), and effects are determined in accordance with the identified methodology.

Mitigation and Enhancement Measures

8.22. The Mitigation and Enhancement Measures section will describe the measures that will be implemented by the Applicant to reduce any significant adverse effects identified by the assessment and enhance beneficial effects during construction and operation of the Proposed Development.

Residual Effects and Conclusions

8.23. Effects of the Proposed Development remaining following the implementation of available mitigation measures are known as 'residual effects'. These will be discussed for each of the potential effects, and their significance level identified.

Cumulative and Combined Effects

8.24. In accordance with the EIA Regulations, consideration will also be given to the potential for cumulative impacts to arise.

8.25. Cumulative impacts are those that accrue over time and space from a number of development activities. The impact of the Proposed Development will be considered in conjunction with the potential impacts from other projects or activities which are both reasonably foreseeable in terms of delivery (e.g. have planning consent) and are located within a realistic geographical scope where environmental impacts could act together to create a more significant overall effect.

8.26. Combined effects will also be assessed. The combination of predicted environmental impacts resulting from a single development on any one receptor that may collectively cause a greater effect (such as the combined effects of noise and air quality/ dust impacts during construction on local residents), are referred to as combined effects.

Scoping and Consultation

8.27. The process of consultation is critical to the development of a comprehensive and balanced ES. The views of statutory and non-statutory consultees serve to focus the environmental studies and to identify specific issues that require further investigation. Consultation is an ongoing process, which enables mitigation measures to be incorporated into the project design thereby limiting adverse effects and enhancing environmental benefits.

8.28. Following the publication of this EIA Scoping Report non-statutory consultation on the Proposed Development will be undertaken in early 2018, using a range of methods including pubic exhibitions and a project website. The website will be maintained throughout the project to provide up-to-date information.

8.29. As required by Section 47 of the Planning Act 2008 (as amended) the Applicant will prepare a Statement of Community Consultation (SoCC) for publication in 2018. The SoCC will outline how the Applicant intends to formally consult with the local community about the Proposed Development. The Applicant is required to first consult the relevant local authorities on the draft SoCC and they will have a period of at least 28 days following receipt of the draft SoCC to do so, prior to its publication for inspection by the public.

8.30. Preliminary Environmental Information (PEI) will be provided for statutory consultation, which will take place later in 2018. As for the non-statutory consultation, this will use a range of methods including public exhibitions and ongoing use of the project website.

8.31. All responses received during consultation will be carefully considered and taken into account in the development of the project, in accordance with Section 49 of the Planning Act 2008. Details of any responses received during consultation and the account taken of those responses will be included in a Consultation Report, as required by section 37 of the Planning Act 2008. This Consultation Report will be submitted with the DCO application to the PINS and will be available for public review at that point.

8.32. The Consultation Report will demonstrate how the Applicant has complied with the consultation requirements of the Planning Act 2008 and will be considered by PINS, both when determining whether to accept the application, and then in examining the application.

9. Summary

9.1. This EIA Scoping Report has identified the potential for significant effects to arise from the construction and operation of the Proposed Development. The following specialist assessments are proposed:

- Air Quality;
- Noise and Vibration;
- Ecology and Nature Conservation;
- Flood Risk, Hydrology and Water Resources;
- Geology, Hydrogeology and Land Contamination;
- Cultural Heritage;
- Traffic and Transportation;
- Land Use, Agriculture and Socio-economics;
- Landscape and Visual Amenity;
- Waste Management; and
- Climate Change.

9.2. The detailed assessments for each of these topics will be undertaken in accordance with standard guidance and best practice and reported in the ES. Where significant effects are identified, mitigation measures will be described where possible to reduce the residual effects.

9.3. This EIA Scoping Report is now submitted to PINS with a formal request for a Scoping Opinion in accordance with Regulation 8 of the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009 as amended.

10. References

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Ref 2. DECC (2011b) National Policy Statement for Fossil Fuel Generating Infrastructure: EN-2. The Stationary Office, London

Ref 3. DECC (2011c) National Policy Statement for Gas Supply Infrastructure and Gas and Oil Pipelines: EN-4. The Stationary Office, London.

Ref 4. DECC (2011d) National Policy Statement for Electricity Networks Infrastructure EN-5. The Stationary Office, London

Ref 5. Department for Communities and Local Government (DCLG) (2012) National Planning Policy Framework. The National Archives. London.
Ref 6. Wakefield Metropolitan District Council Core Strategy Development Plan Document (2009)
Ref 7. Wakefield Metropolitan District Council Development Policies Development Plan Document (2009);
Ref 8. Wakefield Metropolitan District Council Waste Development Plan Document (2009); and
Ref 9. Wakefield Metropolitan District Council Site Specific Policies Local Plan (SSLP) (2012).
Ref 10. Selby District Local Plan (2005)
Ref 11 North Yorkshire Waste Local Plan (2006)
Ref 12 North Yorkshire Minerals Local Plan (1997)
Ref 13 Selby District Core Strategy Local Plan (2013).
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Ref 15 Defra UK :AIR. Air Information Resource [available at: https://uk-air.defra.gov.uk/] (accessed 8/11/17)
Ref 16 Directive 2010/75/EU of the European Parliament and the Council on industrial emissions
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Ref 18 Defra and the Environment Agency (2016) Air emissions risk assessment for your environmental permit [available: https://www.gov.uk/guidance/air-emissions-risk-assessment-for-your-environmental-permit] (accessed 8/11/17)
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Ref 22 Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland
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Ref 25 British Standard (BS) 5228-1 2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Part 1: Noise'
Ref 26 British Standard (BS) 5228-1 2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites. Part 2: Vibration'
Ref 27 ISO 9613-2: 1996 'Attenuation of sound during propagation outdoors. Part 2: General method of calculation'
Ref 28 BS 4142: 2014 'Methods for rating and assessing industrial and commercial sound';
Ref 29 BS 7385: 1993 'Evaluation and measurement for vibration in buildings';
Ref 30 BS 6472: 2008 'Guide to evaluation of human exposure to vibration in buildings';
Ref 31 Department of Transport (1988): Calculation of Road Traffic Noise
Ref 32 Highways Agency (2011) DMRB Volume 11 Section 3 Part 7 HD213/11 (Revision 1)' Traffic Noise and Vibration'
Ref 33 WHO (2009) Night noise guidelines for Europe
Ref 34 Chartered Institute for Ecology and Environmental Management (CIEEM), 2010: Guidelines for Ecological Impact Assessment in the UK and Ireland (
Ref 35 The Planning Inspectorate (2012) Advice Note Ten: Habitat Regulations Assessment relevant to nationally significant infrastructure projects
Ref 36 DCLG (March 2014) Planning Practice Guidance – Flood Risk and Coastal Change [available at: https://www.gov.uk/guidance/flood-risk-and-coastal-change] (accessed 8/11/17)
Ref 37 Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy
Ref 38 Defra and the EA (2015) Humber River Basin District River Basin Management Plan
Ref 39 DCLG & the EA (2017) Flood risk assessment for planning applications [available at: https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications] (accessed 8/11/17)
Ref 40 Heritage England (2017) National Heritage List for England (NHLE) [available at: https://historicengland.org.uk/listing/the-list/] (accessed 8/11/17)
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Ref 42 CIfA (2014) – Code of Conduct
Ref 43 HE (2015) – Historic Environment Good Practice Advice in Planning Note 2: Managing Significance in Decision-Taking in the Historic Environment; and
Ref 44 HE (2015) – Historic Environment Good Practice Advice in Planning Note 3: The Setting of Heritage Assets.

Ref 45 DCLG (March 2014) Planning Practice Guidance - Travel Plans, Transport Assessments and Statements [available at: [https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements] (accessed 8/11/17)
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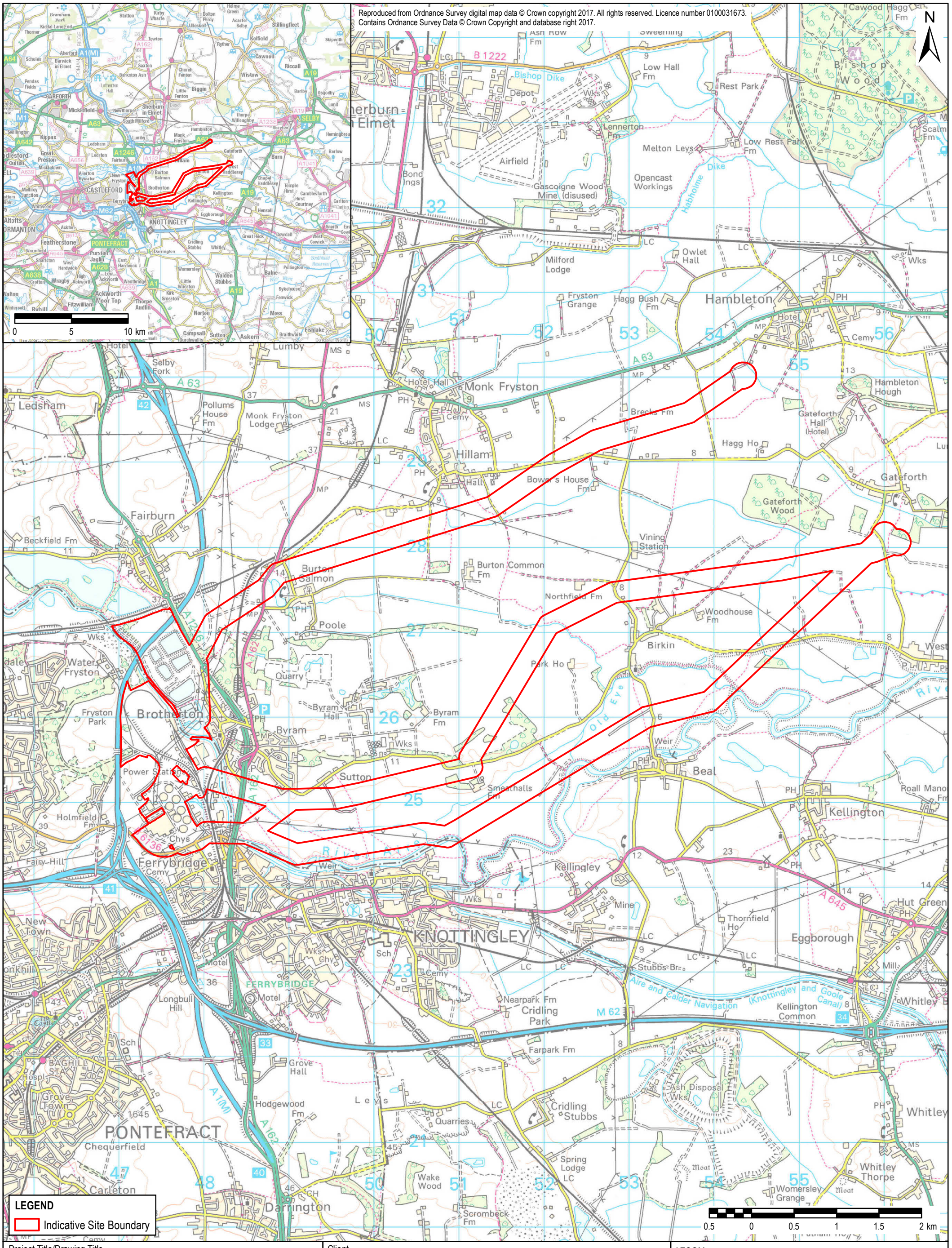
Ref 63 Imperial College Consultants/ Florin, N. and Fennell, P. (2010) Assessment of the validity of "Approximate minimum land footprint for some types of CO2 capture plant" provided as a guide to the Environment Agency assessment of Carbon Capture Readiness in DECC's CCR Guide for applications under Section 36 of the Electricity Act 1989



Project Title/Drawing Title	Client	AECOM
FERRYBRIDGE CCGT SITE LOCATION PLAN	KEADBY GENERATION LTD.	MidPoint Alençon Link, Basingstoke Hampshire, RG21 7PP Telephone (01256) 310200 Fax (01256) 310201 www.aecom.com
	Drawn: JW; Checked: CN; Approved: MS	
	Date: 08/12/2017; Scale @ A3: 1:40,000; Purpose of Issue: FINAL	
	Drawing Number: FIGURE 1; Rev:	

File Name:K:\5004 - Information Systems\60474319 Ferrybridge Pipeline Route\02_Maps\Scoping Report\Figure 1 - Site Location Plan.mxd

THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- Indicative Site Boundary
- Existing Gas Pipelines (National Grid)

SSE Route

- Branch A
- Branch B
- Central Route
- North Route
- South Route

SSE Corridor

- Branch A
- Branch B
- Central Route
- North Route
- South Route

Purpose of Issue
FINAL

Client
KEADBY GENERATION LTD.

Project Title
FERRYBRIDGE CCGT

Drawing Title
FERRYBRIDGE CCGT
EIA SCOPING REPORT

Drawn	Checked	Approved	Date
JW	CN	MS	08/12/2017

AECOM Internal Project No.: 60474319
Scale @ A3: 1:30,000

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Drawing Number: FIGURE 2
Rev:

File Name:K:\8004 - Information Systems\60474319 Ferrybridge Pipeline Route\02_Maps\Scoping Report\Figure 2 - Ferrybridge CCGT EIA Scoping Report.mxd

0.5 0 0.5 1 1.5 2 km

N

N

A1(M)

CCGT Location Coal Yard Option

FM2 Boundary

FM1 Boundary

Siniat Boundary

National Grid Substation

National Grid Substation

National Grid Substation

CCS Area

CCGT Former Generation Plant Area

Cricket Pitch Boundary

Kirkshaw Lane

Strangelands Lane

LEGEND

- Indicative Site Boundary
- Cricket Pitch Boundary
- CCGT Former Generation Plant Area
- CCGT Location Coal Yard Option
- CCS Area
- FM1 Boundary
- FM2 Boundary
- National Grid Substation
- Siniat Boundary

100 0 100 200 300 400 500 m

File Name:K:\5004 - Information Systems\60474319 Ferrybridge Pipeline Route\02_Maps\Scoping Report\Figure 3 - Parts of the Site.mxd

Project Title/Drawing Title

FERRYBRIDGE CCGT

PARTS OF THE SITE

Client: KEADBY GENERATION LTD.

Drawn	Checked	Approved
JW	CN	MS
Date	Scale @ A3	Purpose of Issue
08/12/2017	1:8,500	FINAL
Drawing Number: FIGURE 3		Rev

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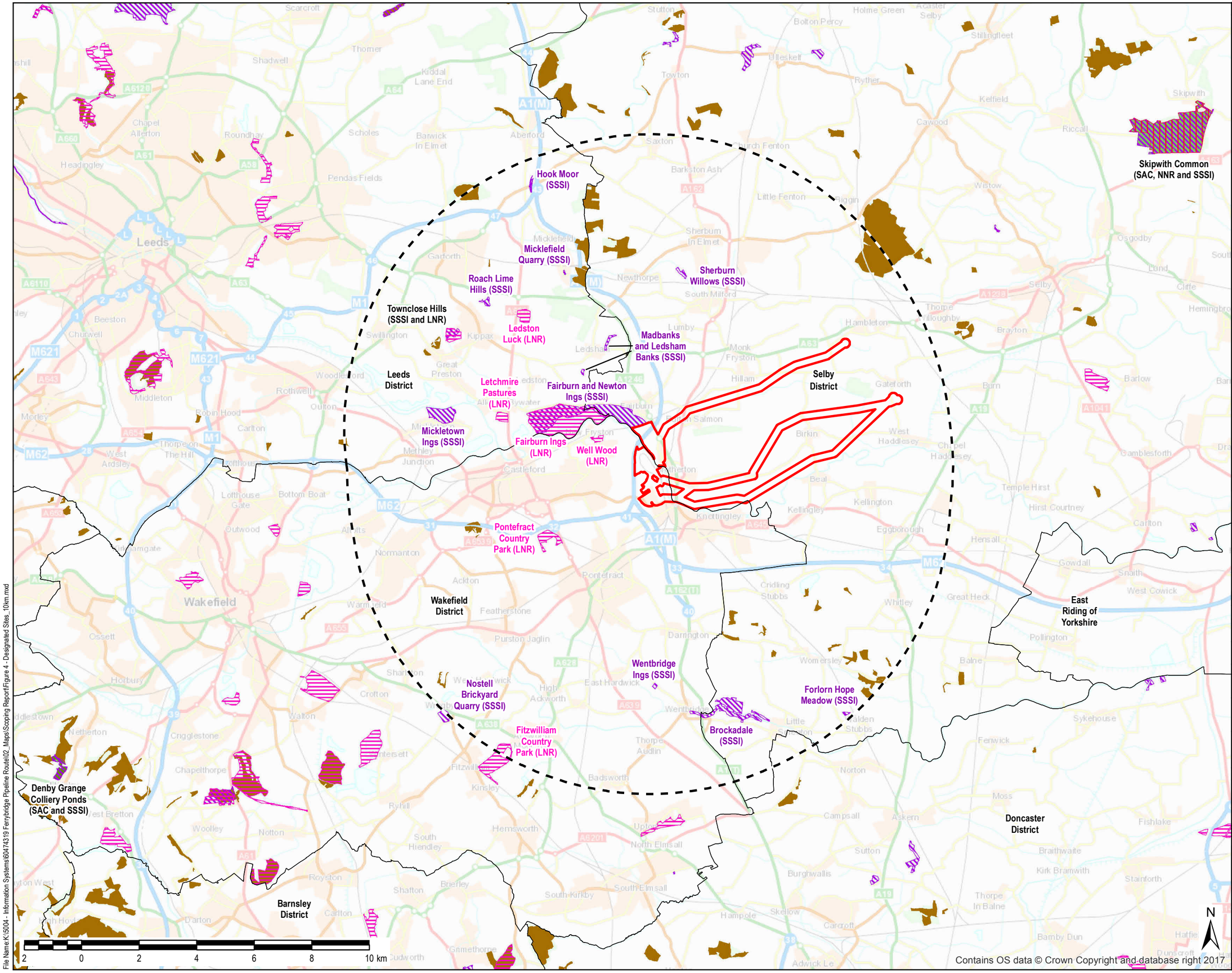

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LEGEND

- Indicative Site Boundary
- 10km Study Area
- District Boundary
- Ancient Woodland
- Local Nature Reserve (LNR)
- National Nature Reserve (NNR)
- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC)

Purpose of Issue: FINAL

Client: KEADBY GENERATION LTD.

Project Title: FERRYBRIDGE CCGT

Drawing Title: ECOLOGICALLY DESIGNATED SITES

Drawn	Checked	Approved	Date
JW	CN	MS	08/12/2017

AECOM Internal Project No.	Scale @ A3
60474319	1:120,000

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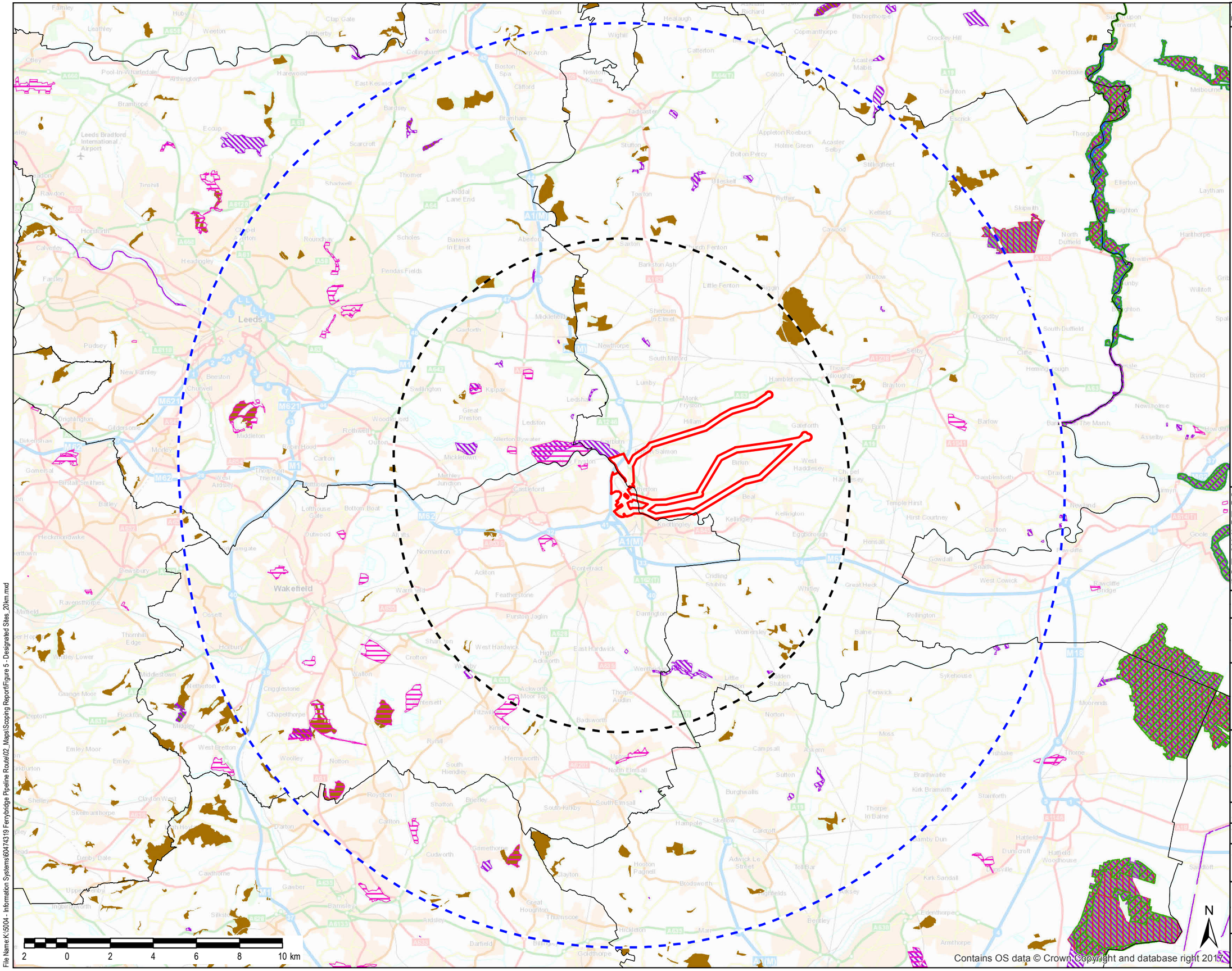
Drawing Number: FIGURE 4

Rev:

File Name:K:\5004 - Information Systems\60474319 Ferrybridge Pipeline Route\02_Maps\Scoping Report\Figure 4 - Designated Sites_10km.mxd



THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

LEGEND

- Indicative Site Boundary
- 10km Study Area
- 20km Study Area
- District Boundary
- Ancient Woodland
- Local Nature Reserve (LNR)
- National Nature Reserve (NNR)
- Site of Special Scientific Interest (SSSI)
- Special Area of Conservation (SAC)

Purpose of Issue: FINAL

Client: KEADBY GENERATION LTD.

Project Title: FERRYBRIDGE CCGT

Drawing Title: ECOLOGICALLY DESIGNATED SITES

Drawn	Checked	Approved	Date
JW	CN	MS	08/12/2017

AECOM Internal Project No.: 60474319

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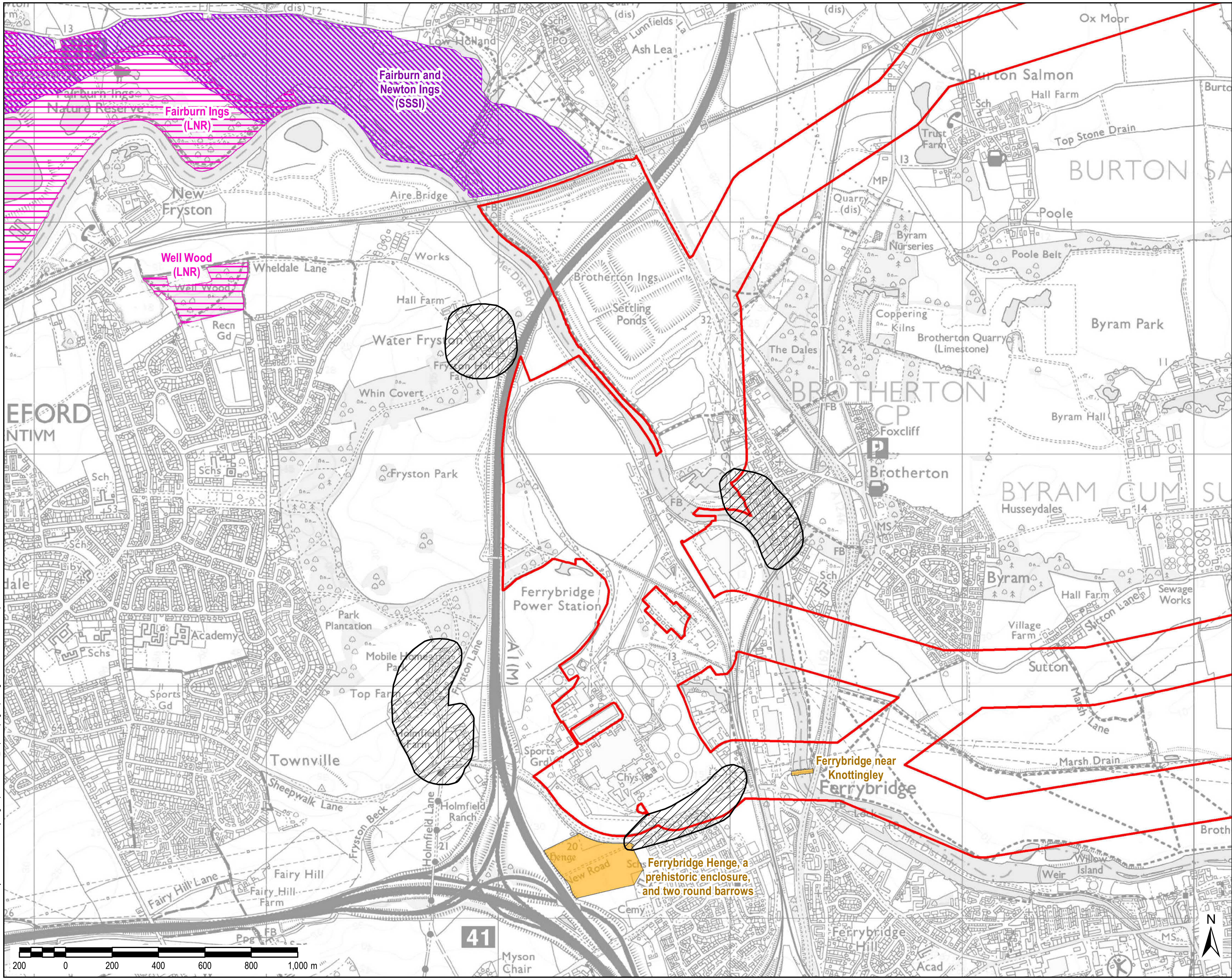
Drawing Number: FIGURE 5

Rev:

File Name:K:\5004 - Information Systems\60474319 Ferrybridge Pipeline Route\02_Maps\Scoping Report\Figure 5 - Designated Sites_20km.mxd


Fairburn and Newton Ings (SSSI)
Fairburn Ings (LNR)
Fairburn Ings Nature Reserve
Well Wood (LNR)
New Fryston
Aire Bridge
Wheldale Lane
Works
Hall Farm
Water Fryston
Fryston Hall Farm
Whin Covert
Fryston Park
Brotherton Ings
Settling Ponds
Low Holland
Lunnfields
Ash Lea
Ox Moor
Burton Salmon
Hall Farm
Top Stone Drain
BURTON SALMON
Poole
Poole Belt
Byram Nurseries
Coppering Kilns
Brotherton Quarry (Limestone)
Byram Park
The Dales
BROTHERTON CP
Foxcliff
Brotherton
Byram Hall
BYRAM CUM SUTTON
Husseydales
Byram
Hall Farm
Sewage Works
Sutton Lane
Village Farm
Sutton
Marsh Lane
Marsh Drain
Ferrybridge Power Station
Park Plantation
Academy
Mobile Home Park
Top Farm
Fryston Lane
Holmfield Farm
Townville
Sheepwalk Lane
Fryston Beck
Holmfield Lane
Holmfield Ranch
Sports Gd
Chys
A1(M)
Ferrybridge near Knottingley
Ferrybridge
Ferrybridge Henge, a prehistoric enclosure, and two round barrows
Henge
New Road
Fairy Hill
Fairy Hill Lane
Fairy Hill Farm
Cemy
Myson Chair
41
Ferrybridge Hill
Willow Island
Weir
Acad
EFORD
NTIVM
Sch
Schs
Sports Gd
Recn Gd
Brotherton
200 0 200 400 600 800 1,000 m
N

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LEGEND

- Indicative Site Boundary
- Local Nature Reserve (LNR)
- Noise Sensitive Area
- Record of Scheduled Monument
- Site of Special Scientific Interest (SSSI)

Purpose of Issue
FINAL

Client
KEADBY GENERATION LTD.

Project Title
FERRYBRIDGE CCGT

Drawing Title
LOCAL SENSITIVE RECEPTORS

Drawn	Checked	Approved	Date
JW	CN	MS	08/12/2017

AECOM Internal Project No. 60474319 — Scale @ A3 1:15,000

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Drawing Number
FIGURE 6

Rev

File Name:K:\5004 - Information Systems\60474319 Ferrybridge Pipeline Route\02_Maps\Scoping Report\Figure 6 - Local Sensitive Receptors.mxd