EP UK Investments

South Humber Bank Energy Centre Project

Planning Inspectorate Reference: EN010107

South Marsh Road, Stallingborough, DN41 8BZ

The South Humber Bank Energy Centre Order

Document Ref 5.2: Grid Connection Statement

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 - Regulations 5(2)(p) & 6(1)(a)(i)

Applicant: EP Waste Management Ltd
Date: April 2020

DOCUMENT HISTORY

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GLOSSARY

Abbreviation	Description
ACC	Air-cooled condenser.
AGI	Above Ground Installation.
CCGT	Combined Cycle Gas Turbine.
DCO	Development Consent Order: provides a consent for building and operating an NSIP.
EfW	Energy from Waste: the combustion of waste material to provide electricity and/or heat.
EIA	Environmental Impact Assessment.
EPUKI	EP UK Investments Ltd.
EPWM	EP Waste Management Limited (‘The Applicant’)
ES	Environmental Statement.
ExA	Examining Authority: An inspector or panel of inspectors appointed to examine the application.
mAOD	Metres Above Ordnance Datum.
MW	Megawatt: the measure of power produced.
NELC	North East Lincolnshire Council.
NPS	National Policy Statement.
NSIP	Nationally Significant Infrastructure Project: for which a DCO is required.
PA 2008	Planning Act 2008.
PINS	Planning Inspectorate.
Q2	Quarter 2
RDF	Refuse derived fuel.
SHBEC	South Humber Bank Energy Centre.
SHBPS	South Humber Bank Power Station.
SoS	Secretary of State.

CONTENTS

FIGURES

1.0 EXECUTIVE SUMMARY

1.1.1 EP Waste Management Limited (the Applicant) is seeking development consent for an energy from waste power station with a gross electrical output of up to 95 MW on land at South Humber Bank Power Station (SHBPS).

1.1.2 This document sets out who will be responsible for designing and building the proposed electrical connection for the Proposed Development, and demonstrates that there is no reason why an electrical connection would not be possible.

1.1.3 There are two potential routes for the proposed electrical connection:

- an underground or overground cable to the National Grid Electrical Transmission (NGET) 400 kV system at the existing SHBPS 400 kV substation (located within the Site); or
- an underground cable to the Northern Powergrid 132 kV local distribution network, connecting to an existing transmission tower on South Marsh Road (located off Site).

1.1.4 The indicative route options are shown on Figure 1.

1.1.5 The Applicant has engaged with both National Grid and Northern Powergrid and concludes that both connection options are possible.

1.1.6 Upgrades and additional plant and equipment required for connection into the NGET 400 kV system would be achieved via the Bilateral Connection Agreement (BCA) and Construction Agreement (Consag). These upgrades would include the provision by NGET of an extra bay within the NGET 400 kV substation.

1.1.7 Upgrades are currently not expected to be required for connection into the Northern Powergrid 132 kV local distribution network, although this would be confirmed during the detailed design stage if this is chosen as the preferred option. If upgrade works are required outside the Site the relevant undertaker will rely either on their statutory powers or obtain the relevant planning permission prior to connection.

1.1.8 The Applicant will be responsible for the design and construction of the electrical connection as far as the boundary of the NGET substation or the Site boundary (depending on the selected connection option). This will be done by the Applicant's chosen Engineering, Procurement and Construction (EPC) Contractor.

1.1.9 The continuation of the connection (whether within the NGET substation or an off Site connection to the local distribution network) does not form part of the Proposed Development, and the relevant undertaker would rely either on their statutory powers or obtain the relevant consents prior to connection.

2.0 INTRODUCTION

2.1.1 This ‘Grid Connection Statement’ document (Document Ref. 5.2) has been prepared on behalf of EP Waste Management Limited (‘EPWM’ or the ‘Applicant’). It forms part of the application (the 'Application') for a Development Consent Order (a 'DCO'), that has been submitted to the Secretary of State (the ‘SoS’) for Business, Energy and Industrial Strategy, under section 37 of ‘The Planning Act 2008’ (the ‘PA 2008’).

2.1.2 EPWM is seeking development consent for the construction, operation and maintenance of an energy from waste (‘EfW’) power station with a gross electrical output of up to 95 megawatts (MW) including an electrical connection, a new site access, and other associated development (together ‘the Proposed Development’) on land at South Humber Bank Power Station (‘SHBPS’), South Marsh Road, near Stallingborough in North East Lincolnshire (‘the Site’).

2.1.3 A DCO is required for the Proposed Development as it falls within the definition and thresholds for a 'Nationally Significant Infrastructure Project' (a 'NSIP') under sections 14 and 15(2) of the PA 2008.

2.1.4 The DCO, if made by the SoS, would be known as the ‘South Humber Bank Energy Centre Order' (‘the Order').

2.1.5 Full planning permission (‘the Planning Permission’) was granted by North East Lincolnshire Council (‘NELC’) for an EfW power station with a gross electrical output of up to 49.9 MW and associated development (‘the Consented Development’) on land at SHBPS (‘the Consented Development Site’) under the Town and Country Planning Act 1990 on 12 April 2019. Since the Planning Permission was granted, the Applicant has assessed potential opportunities to improve the efficiency of the EfW power station, notably in relation to its electrical output. As a consequence, the Proposed Development would have a higher electrical output (up to 95 MW) than the Consented Development, although it would have the same maximum building dimensions and fuel throughput (up to 753,500 tonnes per annum (tpa)).

2.2 The Applicant

2.2.1 The Applicant is a subsidiary of EP UK Investments Limited (‘EPUKI’). EPUKI owns and operates a number of other power stations in the UK. These include SHBPS and Langage (Devon) Combined Cycle Gas Turbine (‘CCGT’) power stations, Lynemouth (Northumberland) biomass-fired power station, and power generation assets in Northern Ireland. EPUKI also owns sites with consent for new power stations in Norfolk (King’s Lynn ‘B’ CCGT) and North Yorkshire (Eggborough CCGT).

2.2.2 EPUKI is a subsidiary of Energetický A Prumyslový Holding ('EPH'). EPH owns and operates energy generation assets in the Czech Republic, Slovak Republic, Germany, Italy, Hungary, Poland, Ireland, and the United Kingdom.

2.3 The Proposed Development Site

2.3.1 The Proposed Development Site (the 'Site' or the 'Order limits') is located within the boundary of the SHBPS site, east of the existing SHBPS, along with part of the carriageway within South Marsh Road. The principal access to the site is off South Marsh Road.

2.3.2 The Site is located on the South Humber Bank between the towns of Immingham and Grimsby; both over 3 km from the Site. The surrounding area is characterised by industrial uses dispersed between areas of agricultural land with the nearest main settlements being the villages of Stallingborough, Healing and Great Coates. The Site lies within the parish of Stallingborough although Stallingborough village lies over 2 km away.

2.3.3 The Site lies within the administrative area of NELC, a unitary authority. The Site is owned by EP SHB Limited, a subsidiary of EPUKI, and is therefore under the control of the Applicant, with the exception of the highway land on South Marsh Road required for the new Site access.

2.3.4 The existing SHBPS was constructed in two phases between 1997 and 1999 and consists of two CCGT units fired by natural gas, with a combined gross electrical capacity of approximately 1,400 MW. It is operated by EP SHB Limited.

2.3.5 The Site is around 23 hectares (‘ha’) in area and is generally flat, and typically stands at around 2.0 m Above Ordnance Datum (mAOD).

2.3.6 The land surrounding the Site immediately to the south, west and north-west is in agricultural use with a large polymer manufacturing site, Synthomer, and a waste management facility, NEWLINCS, both located to the north of the Site and also accessed from South Marsh Road. The estuary of the River Humber lies around 175 m to the east of the Site.

2.3.7 Access to the South Humber Bank is via the A180 trunk road and the A1173. The Barton railway line runs north-west to south-east between Barton-on-Humber and Cleethorpes circa 2.5 km to the south-west of the Site and a freight railway line runs north-west to south-east circa 300 m (at the closest point) to the Site.

2.3.8 A more detailed description of the Site is provided at Chapter 3: Description of the Proposed Development Site in the Environmental Statement ('ES') Volume I (Document Ref. 6.2).

2.4 The Proposed Development

2.4.1 The main components of the Proposed Development are summarised below:

- Work No. 1— an electricity generating station located on land at SHBPS, fuelled by refuse derived fuel (‘RDF’) with a gross electrical output of up to 95 MW at ISO conditions;
- Work No. 1A— two emissions stacks and associated emissions monitoring systems;
- Work No. 1B— administration block, including control room, workshops, stores and welfare facilities;

- Work No. 2— comprising electrical, gas, water, telecommunication, steam and other utility connections for the generating station (Work No. 1);
- Work No. 3— landscaping and biodiversity works;
- Work No. 4— a new site access on to South Marsh Road and works to an existing access on to South Marsh Road; and
- Work No. 5— temporary construction and laydown areas.

2.4.2 Various types of ancillary development further required in connection with and subsidiary to the above works are detailed in Schedule 1 of the DCO. A more detailed description of the Proposed Development is provided at Schedule 1 'Authorised Development' of the Draft DCO and Chapter 4: The Proposed Development in the ES Volume I (Document Ref. 6.2) and the areas within which each of the main components of the Proposed Development are to be built is shown by the coloured and hatched areas on the Works Plans (Document Ref. 4.3).

2.5 Relationship with the Consented Development

2.5.1 The Proposed Development comprises the works contained in the Consented Development, along with additional works not forming part of the Consented Development ('the Additional Works'). The Additional Works are set out below along with an explanation of their purpose.

- a larger air-cooled condenser (ACC), with an additional row of fans and heat exchangers – this will allow a higher mass flow of steam to be sent to the steam turbine whilst maintaining the exhaust pressure and thereby increasing the amount of power generated;
- a greater installed cooling capacity for the generator – additional heat exchangers will be installed to the closed-circuit cooling water system to allow the generator to operate at an increased load and generate more power;
- an increased transformer capacity – depending on the adopted grid connection arrangement the capacity will be increased through an additional generator transformer operating in parallel with the Consented Development's proposed generator transformer or a single larger generator transformer. Both arrangements would allow generation up to 95 MW; and
- ancillary works – the above works will require additional ancillary works and operations, such as new cabling or pipes, and commissioning to ensure that the apparatus has been correctly installed and will operate safely and as intended.

2.5.2 The likely construction scenario is for work on the Consented Development (pursuant to the Planning Permission) to commence in Quarter 2 ('Q2') of 2020 and to continue for around three years. Following grant of a DCO for the Proposed Development (approximately halfway through the three-year construction programme), the Applicant would initiate powers to continue development under the Order instead of the Planning Permission. The Order includes appropriate powers and notification requirements for the 'switchover' between consents, to provide clarity for the relevant planning

authority regarding the development authorised and the applicable conditions, requirements, and other obligations. Once the Order has been implemented the additional works would be constructed and the Proposed Development would be built out in full. The Proposed Development would commence operation in 2023.

2.5.3 Alternative construction scenarios, involving construction entirely pursuant to the Order, are also possible. Accordingly, three representative scenarios are described within Chapter 5: Construction Programme and Management in the ES Volume I (Document Ref. 6.2) and assessed in the Environmental Impact Assessment ('EIA').

2.6 Purpose of this Document

2.6.1 The purpose of this document is to meet the requirements of Regulation 6(1)(a)(i) of the Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009, which requires the Applicant to provide a statement setting out who will be responsible for designing and building the proposed grid connection to the Proposed Development.

2.6.2 This Grid Connection Statement has, therefore, been prepared to satisfy the requirements of Regulation 6(1)(a)(i) and to demonstrate (as required by National Policy Statement EN-1, paragraph 4.9.1) that there is no reason why a grid connection would not be possible.

2.6.3 Section 3 of this document describes the grid connection route and connection point options. Section 4 confirms the contractual agreements that are in place, while Section 5 details the responsibilities for designing and building the grid connection. Section 6 explains the ownership of the land required for the connection, Section 7 deals with the consent required for the connection works and Section 8 sets out the conclusions.

3.0 PROPOSED GRID CONNECTION OPTIONS

3.1.1 The final electrical connection option has not yet been determined but will comprise one of two options. Electricity will be exported either to the NGET 400 kV system at the existing SHBPS 400 kV substation (the substation is located within the Site, although the substation itself is excluded from it) or to the Northern Powergrid 132 kV local distribution network (located off Site).

3.1.2 The connection to the NGET system at the 400 kV substation will be made through underground or overground electrical cables (comprised in Work Nos. 1 and 2) from a new transformer compound (comprised in Work No. 1) (see Works Plans (Document Ref. 4.3) and the indicative route off Site route shown on Figure 1. The terminal point for connection at the NGET 400 kV substation is expected to be at the substation southern boundary. Works within the NGET compound do not form part of the Proposed Development but are likely to involve the installation of a new gas insulated substation (GIS) bay inside the NGET 400kV substation compound, transmission reinforcement works and associated civil and ancillary works. All these works would be within the NGET substation compound and undertaken by NGET.

3.1.3 Alternatively, connection to the 132 kV local distribution network operated by Northern Powergrid, would require an on Site substation (within Work No. 1) which would be connected by underground cables to the Site boundary (within Work No. 1) and then along South Marsh Road to the local distribution network at an existing 132 kV tower approximately 2 km to the west of the Site (see Figure 1). The works outside the Site (the cables and connection to the 132 kV tower) are not part of the Proposed Development.

4.0 CONTRACTUAL AGREEMENTS

4.1.1 The Applicant has engaged with both NGET and Northern Powergrid on each respective option.

4.1.2 The Applicant has a Bilateral Connection Agreement (BCA) and Construction Agreement (Consag) offer open for acceptance with NGET for connection to the SHBPS 400 kV substation.

4.1.3 The Applicant also has an open offer from Northern Powergrid for the provision of a 132kV connection at the Site.

4.1.4 Consideration is currently being given as to which option offers the best commercial and technological solution for the Proposed Development with the chosen option likely to be accepted in Q2 2020.

5.0 RESPONSIBILITIES FOR DESIGNING AND BUILDING THE ELECTRICAL CONNECTION

5.1.1 The Applicant will select the preferred electrical connection option and the Applicant's chosen Engineering, Procurement and Construction (EPC) contractor will undertake detailed design of the connection route within the Site.

5.1.2 NGET or Northern Powergrid (depending on the selected grid connection option) will be responsible for making the connection within the SHBPS 400 kV substation or to the transmission tower respectively. Any associated off Site works required to implement the 132kV connection option will be the responsibility of Northern Powergrid.

5.2 Grid Cables Installation

5.2.1 If underground cables are selected, it is envisaged that installation will be through the use of an 'open-cut' method, whereby a trench will be excavated, and the cables laid below ground. This method will be applied where there is sufficient space and the work area is relatively flat. These works will generally be as follows:

- fence off works area and fit safety signage;
- strip and store topsoil (if required);
- excavate trench and store subsoil, with the EPC contractor being responsible for providing all necessary trench supports and for maintaining the trenches in a safe condition and free of water;
- lay cables in the trench; and
- backfill subsoil, reinstate topsoil (if required) and reinstate to original state.

5.2.2 These works would be undertaken in accordance with the measures outlined in a Construction Environmental Management Plan (CEMP) to be prepared by the contractor.

5.2.3 If off Site underground electrical cables are required (for connection to the local distribution network) these will be installed by the relevant statutory undertaker (Northern Powergrid) using the method described in paragraph 5.2.1 above. These works have been considered in the assessment of cumulative environmental effects (see Chapter 17: Cumulative and Combined Effects of the ES Volume I (Document Ref. 6.2)).

5.2.4 If overground cables are selected (for the on Site connection to the existing SHBPS NGET substation), these works will generally be as follows:

- site preparation, including fencing off works area and fitting safety signage;
- installation of the structures for the overground cables supports, including installation of suitable foundations; and
- installing cables in the cable supports and securing appropriately.

5.3 Grid Connection Operation and Maintenance

5.3.1 The Applicant will be responsible for the operation and maintenance of all on Site plant and apparatus over the life of the Proposed Development.

5.3.2 NGET would be responsible for the operation and maintenance of their equipment within the existing SHBPS NGET substation.

5.3.3 Northern Powergrid would be responsible for the operation and maintenance of electrical cables and infrastructure outside the Site.

6.0 LAND REQUIRED FOR THE CONNECTION

6.1.1 The Applicant owns the freehold interest for the Site and on which the potential connection to the existing SHBPS NGET substation would be made. The Applicant also owns the freehold of the land on which the NGET substation is situated, subject to a lease to NGET. The connection agreement with NGET would provide the necessary rights for the Applicant to connect to the substation.

6.1.2 The Applicant owns the freehold interest in the land on which the potential connection to the Site boundary would be made, for onward connection to the local distribution network. The statutory undertaker, Northern Powergrid, would rely either on their statutory powers or obtain the relevant consents to install a connection along South Marsh Road to their existing 132 kV transmission tower.

7.0 CONSENT FOR THE GRID CONNECTION WORKS

7.1.1 On Site grid connection works are included within the DCO Application, and therefore no separate planning permission is required. Work Nos. 1 and 2 in Schedule 1 of the DCO (Document Ref. 2.1) cover the construction and operation of the grid connection within the Site. These are assessed in the ES topic chapters.

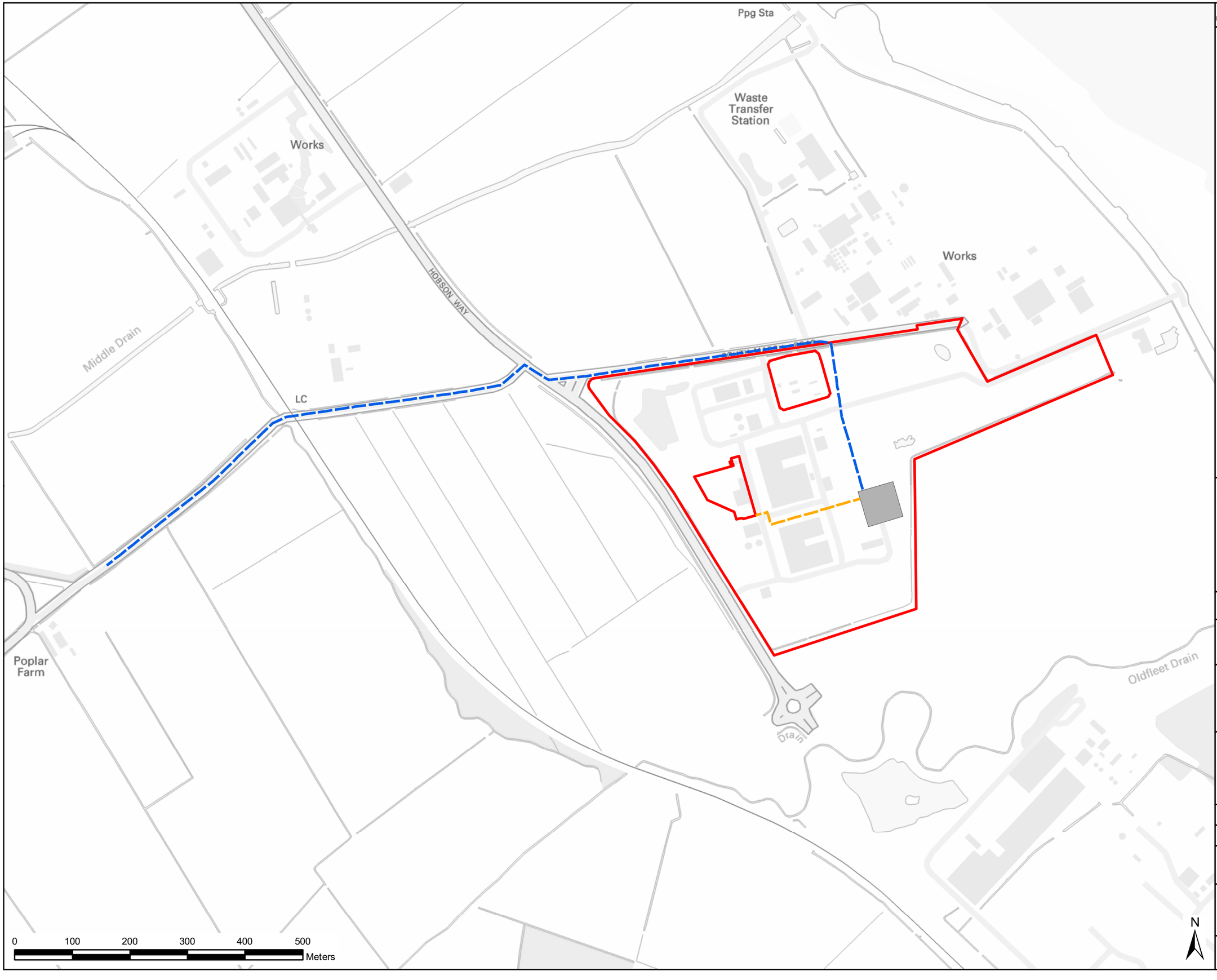
7.1.2 Electrical connection works outside of the Site, if required, will require the relevant undertaker to utilise their statutory powers or obtain the relevant consents prior to connection. These are assessed in Chapter 17 'Cumulative and Combined Effects' of the ES Volume I (Document Reference 6.2).

8.0 CONCLUSIONS

8.1.1 This Grid Connection Statement has been prepared to satisfy the requirements of Infrastructure Planning (Applications: Prescribed Forms and Procedures Regulations 2009 Regulation 6(1)(a)(i) and to demonstrate that there is no reason why a grid connection would not be possible for the Proposed Development, in accordance with National Policy Statement (NPS) EN-1.

8.1.2 The Statement has demonstrated that the proposed grid connection and associated underground/ overground cables included within the Application (and assessed as part of the associated Environmental Impact Assessment reported in the ES (Document Refs. 6.1 to 6.4)) are feasible, that the necessary agreements are being secured, and appropriate powers are included in the draft Order to facilitate the delivery of the grid connection.

FIGURE 1: GRID CONNECTION ROUTE OPTIONS



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

LEGEND

- Order Limits
- Potential Electrical Substation Building

Electrical Connection Route Options

- Potential Route of 132 kV connection to local distribution network (Northern Powergrid)
- Potential Route of 400 kV connection to National Grid Electricity Transmission (NGET) substation at SHBPS

Purpose of Issue
GRID CONNECTION STATEMENT

Client
EP WASTE MANAGEMENT LTD

Project Title
SOUTH HUMBER BANK ENERGY CENTRE DCO

Application Document Ref
ELECTRICAL CONNECTION ROUTE OPTIONS

Drawn	Checked	Approved	Date
LC	AR	LK	02/04/2020

AECOM Internal Project No.	Scale @ A3
60580855	1:6,000

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Drawing Ref
FIGURE 1

Rev

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