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Offshore Wind Farm

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RACE BANK OFFSHORE WIND FARM

ONSHORE CABLE ROUTE

CONSTRUCTION MANAGEMENT PLAN

DONG Energy (RB) UK Limited
33 Grosvenor Place
London
SW1X 7HY

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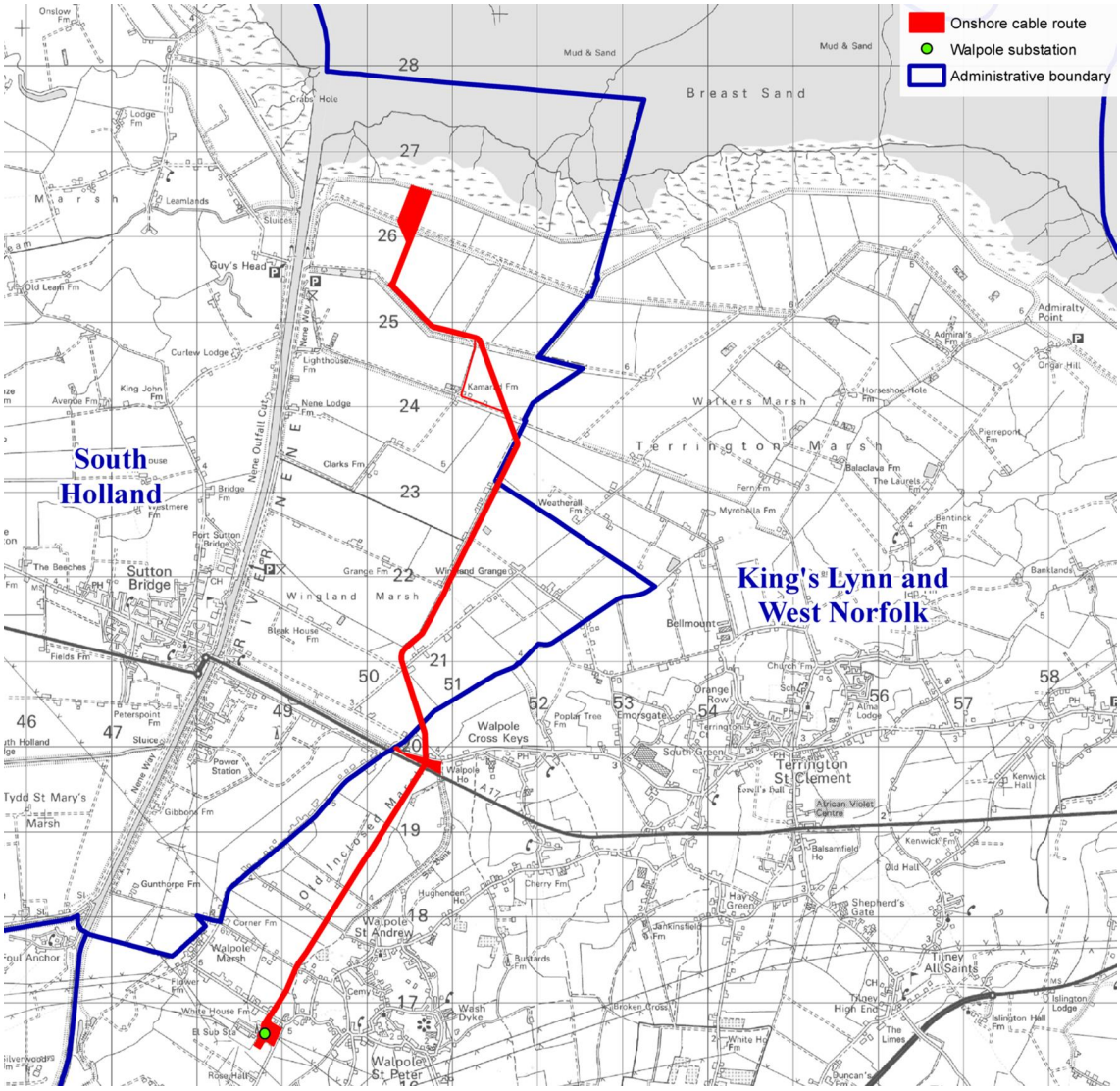
1 Introduction

Purpose of the CMP

1.1 This Construction Management Plan (CMP) has been prepared to support the construction of the Race Bank onshore cable route (herein after referred to as the ôProjectõ).

1.2 The works site is shown at Figure 1.

Figure 1: Onshore Cable Route



1.3 The CMP sets out the management measures that DONG Energy (RB) UK Limited (DONG Energy), the developer of the Race Bank Offshore Wind Farm will require its contractors to

adopt and implement for all relevant construction activities in relation to the Project. These include control measures and monitoring procedures for managing the potential environmental impacts of construction and limiting the disturbance from construction activities as far as is reasonably practicable.

1.4 This CMP is separate, but complimentary, to the equivalent CMP approved by the Borough Council of Kings Lynn and West Norfolk for the onshore substation construction, under planning permission reference 14/01509/FM.

1.5 This CMP is intended to provide an overview of the approaches to be taken during the construction of the Project. Detailed plans and detailed method statements will be prepared once a Principal Contractor (herein after referred to as the ôContractorõ) has been appointed and will be prepared within the framework set out by this document.

1.6 The CMP will apply to all construction works carried out in relation to the onshore cable route, between Frenchõs Road and the project landfall area near Sutton Bridge as shown on Figure 1.

1.7 The term ôconstructionõ in the CMP includes all site preparation, enabling works, material delivery, earthworks, excavated material disposal, and all related engineering and construction activities as defined in the planning permission (Borough Council of Kings Lynn and West Norfolk reference 14/01587/F and South Holland District Council reference H18-0341-10). The CMP will apply throughout the construction and commissioning period and will include the reinstatement of all temporary construction areas.

1.8 Copies of these planning permissions are provided at Appendix 1.

1.9 The CMP incorporates legislative requirements, current standards and best practice measures; however, compliance with this CMP will not absolve the Contractor or subcontractors from compliance with all legislation and byelaws relating to their construction activities.

Project Overview

1.10 DONG Energy is presently preparing to commence the onshore construction elements of the Project in Quarter 2 2015. The onshore cable route works are due to commence in mid-May 2015.

1.11 The onshore cable system will be installed primarily on agricultural land, and will cross six highways and thirty nine drainage ditches. Ten of those ditches are controlled and maintained by the Kings Lynn Internal Drainage Board. Separate consent applications will be sought for the road crossings under the New Roads and Street Works Act 1991. Separate permissions will be sought from the Internal Drainage Board for the installation

beneath Internal Drainage Board controlled watercourses under the relevant Drainage Board byelaws. These consents will be in place prior to the start of construction.

1.12 The cable will be installed in open trenches and all major road crossings will be traversed using Horizontal Directional Drilling (HDD) technology. Cables may be installed beneath smaller watercourses using an open cut methodology. Details of these techniques are provided in Appendix 2. A final schedule of all crossings and techniques to be employed will be confirmed prior to the start of construction.

1.13 As the Borough and District Council are aware DONG Energy is required to submit evidence of Internal Drainage Board approval for the affected watercourse crossings prior to the start of any construction works on the cable route.

1.14 The operational onshore cables system will comprise the following elements:

- 2 x 220kV Three Phase Export Cable Systems installed with a continuous underground duct system
- Up to 9 No. Joint bays along the route some with surface mounted inspection pits
- Fibre Optic system for communication with the Wind Park
- 2 x Joint Bays (TJBs) at the project landfall

1.15 All installed cables, joint bays and inspection chambers will be buried below ground level. The only above ground elements will be inspection covers marking inspection chambers and marker posts each side of ditch and road crossings to mark the location of the installed cables where they pass beneath those features.

1.16 The final location of inspection chambers and joint bays are subject to final project design work, currently nearing completion.

Implementation timetable

1.17 The timetable for the implementation of site works will be confirmed to the Borough, District and Parish Councils within one month of the anticipated start of construction on site. The onshore cable route installation works are estimated to take up to 18 months.

1.18 The indicative construction programme for the onshore cable works is set out below:

- Mobilisation to site including drainage installation to commence May 2015
- Duct Installation to commence June 2015
- Cable pulling to commence October 2015
- Cable Jointing Activities to commence January 2016

1.19 An up to date programme of works will be maintained on site by DONG Energy.

DONG Energy point of contact

1.20 A notice listing contact details of the Contractor will be displayed at the entrance to the construction site at Walpole Marsh and all open construction fronts on the cable route. At the time of writing, the Contractor had not been appointed.

Distribution list

1.21 Copies of the final CMP and any subsequent updates will be placed on deposit with the following parties. Any update to the CMP will be communicated to the necessary DONG Energy /construction contractor development staff at the earliest practicable opportunity.

DONG Energy development team

Council Planning Officer

Parish Councils

Environmental Health Officer

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2 General Site Management

Working hours

2.1 DONG Energy will establish working hours in consultation and agreement with Kingâs Lynn and West Norfolk Borough Council (the Borough Council) and South Holland District Council (the District Council).

2.2 The proposed construction working hours on site are as follows:

- Monday to Friday 0700 to 1900 hours; and
- Saturday and Sunday 0700 to 1700 hours.

2.3 In certain circumstances, specific works may have to be undertaken outside the normal working hours. Where such working outside normal working hours is proposed, agreement will usually be sought from the local authority beforehand. Works may need to take place outside core working hours for the installation of cables using HDD technology where, for example, an installation by HDD has commenced and must be completed in a single operation.

Construction laydown areas

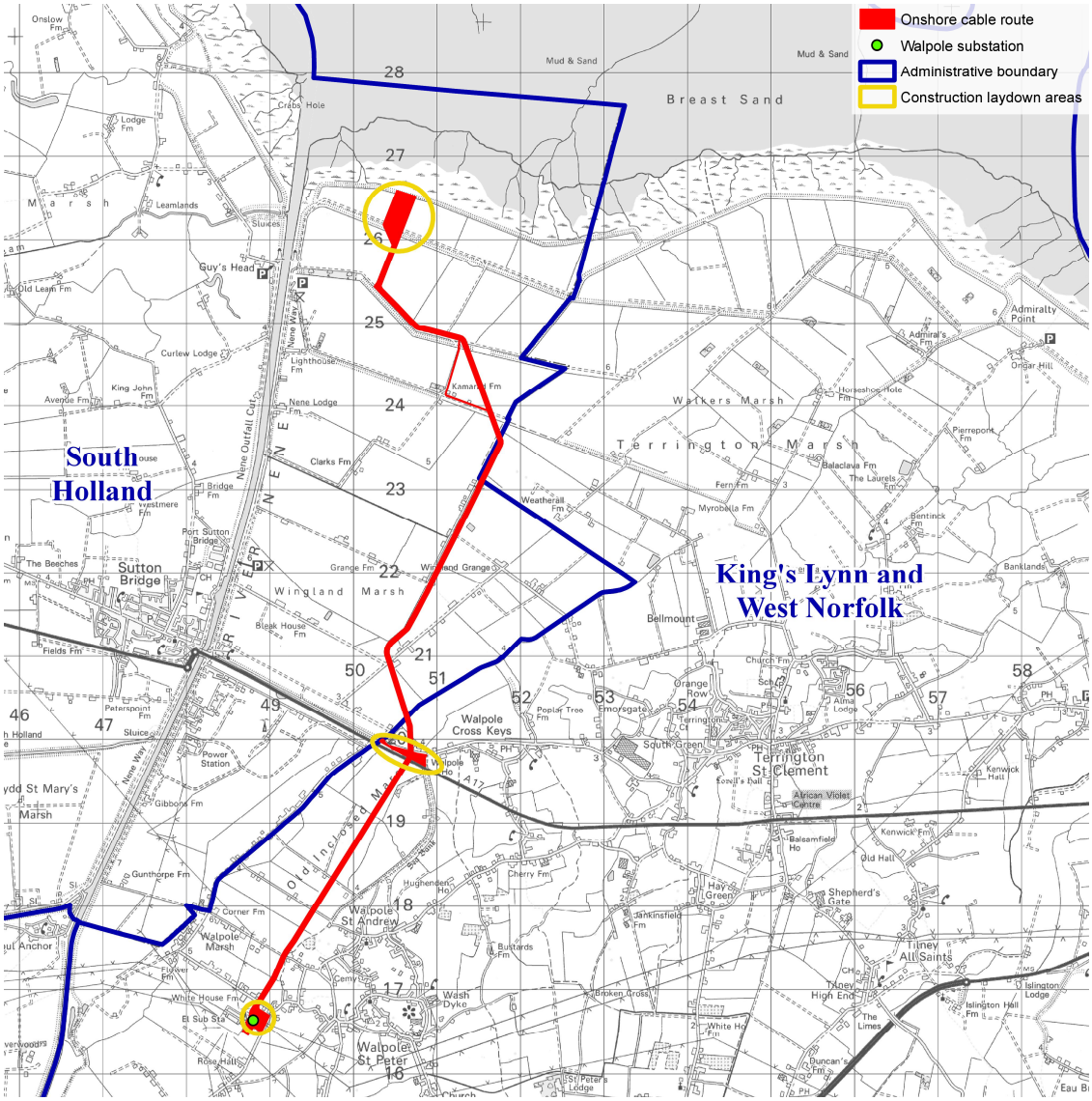
2.4 There will be a principal construction compound which is likely to be established near to the A17 and space will also be used for laydown at Walpole Substation. Figure 2 below refers. If required further space could be utilised near to the project landfall near Sutton Bridge (the northernmost indicated site).

2.5 If additional principal laydown areas are required these will require further planning permission and applications will be made to the relevant Local Planning Authority ahead of time.

2.6 The principal laydown areas will be in place for the duration of the cable route project works and reinstated post-construction. The laydown area at Walpole Marsh will be in situ for the entire substation construction phase of approximately 18 months.

2.7 Until the cable installation contractor has been appointed the precise location of the laydown areas will not be known. All laydown areas will be agreed with the relevant parties prior to commencement of the works.

Figure 2: Indicative Laydown Areas



2.8 Additional smaller temporary laydown areas are likely to be required along the approved onshore cable route. Each HDD location will, for example, require a small area of hardstanding to be formed for the drill rig to operate from, along with some welfare facilities.

2.9 These will typically be established, and reinstated, within one week.

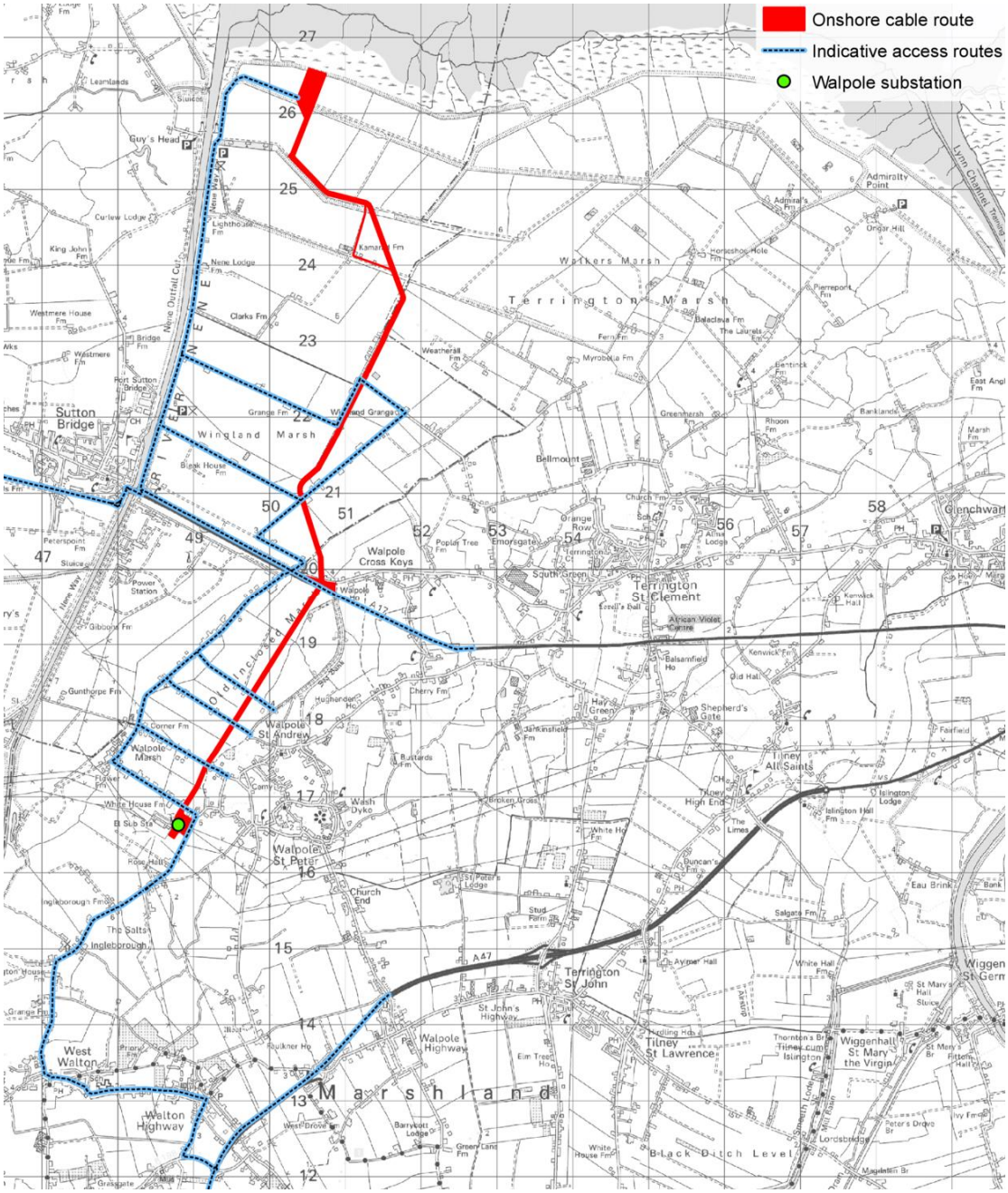
Construction phase access

2.10 Access to the cable route during construction will be taken insofar as is possible from the public highway, and via private tracks where necessary. Access will also be taken up and down the cable route itself, using temporary haul roads. The construction access routes set out in the original environmental statement are shown in Figure 3.

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Figure 3: Cable Corridor Construction Access



2.11 A separate Traffic Management Plan (TMP) has been prepared setting out measures that will be implemented for the management of construction phase traffic, including Heavy Goods Vehicle movements and movements by construction staff and visitors to site.

External lighting

2.12 External lighting of all construction areas will be limited and task specific. On occasion mobile light towers may be used, particularly during winter and towards the end of the day. These will utilise small portable tower masts that contain a maximum of 4x1000W reflectors, and with high quality flat glass, which will be directed downwards and into the site to minimise light spillage. Procedures will be put in place for monitoring the lighting, and adjustments will be made to ensure minimal environmental and social impacts occur.

2.13 External lighting will be in accordance with the guidance issued by the Institute of Lighting Engineersô Guidance Notes for the Reduction of Obtrusive Lightô (2005) and ôReduction in Light Pollutionô (2000).

Housekeeping and pest control

2.14 A good housekeeping policy will be applied to all construction areas and construction staff welfare facilities at all times. All working areas will be maintained in a clean and tidy condition, open fires and burning of rubbish will be prohibited at all times.

2.15 The risk of pest/vermin infestation will be minimised by the appropriate storage and collection of putrescible waste and effective pest control measures. Construction waste will be segregated with the 'general and domesticôwaste being stored in lockable covered skips until removed from site to a waste transfer facility. Skip locations on the construction site will be confirmed by the construction contactors once appointed. Any pest infestation will be dealt with promptly.

2.16 Accommodation units and facilities, waste segregation and storage arrangements will be subject to formal inspection weekly with the results recorded together with actions and timescales for correction of short falls or implementation of changes/improvements.

Site security

2.17 The principal laydown areas will be secured using 2m high Heras type anti-climb fencing.

2.18 Access into to the principal construction compound sites will be via manned Site Security Gates. All visitors to the construction site will be required to log their attendance. The site entrance(s) security gate(s) will be controlled by the Contractor. 24hour manned security patrols will be a feature of the overall site security system.

2.19 No unauthorised person will be allowed access to any construction site (principal or satellite). All persons requiring access will be registered upon arrival and departure and will be subject to site induction training. The level of the induction will depend upon the status of the individual and the parts of the site that they will be accessing e.g. construction staff and site operatives will be subjected to a full induction, whereas visitors who will be accompanied at all

times will be subject to a condensed version of the site induction. Delivery drivers will similarly be subject to a specific induction.

Health and safety/emergency procedures/spill response etc.

2.20 An emergency response plan will be prepared for the works taking into account the anticipated hazards and the conditions at the site.

2.21 The purpose of the response plan is to appraise all significant risks associated with emergencies and/or significant unplanned events and to compile a comprehensive response plan for all site based managers and operatives to use in the event of a significant incident.

2.22 The emergency procedure will contain emergency phone numbers and the method of notifying the Local Authority and statutory authorities. The procedures will be displayed at the construction area or site and all site staff will be required to follow them.

2.23 The response plan will cover:-

- Introduction
- Scope
- COM Responsibilities
- Site address and location
- Fire
- Flood
- Environmental incident
- Adverse weather conditions
- Damage to underground services
- Injury management
- Injury investigation
- Security
- Unexploded ordnance
- Off-Site works
- Media Relations
- Drainage ditch breakout mitigation procedure

3 Specific Environmental Control Information

Measures to control dust

3.1 The control of dust emissions on construction sites is important if risks to health or the occurrence of environmental pollution or nuisance to sensitive local receptors (e.g. adjacent houses) are to be avoided.

3.2 Fugitive emissions of dust and particulate matter may arise as a result of construction activities (e.g. drilling, cutting, grinding) or from on-site vehicles and plant.

3.3 To minimise dust generation and particulate matter, the following measures will be implemented as required:

- impose a site speed limit for all vehicles;
- damp down unsurfaced haul roads;
- ensure that vehicles carrying bulk materials are sheeted. Vehicle Banksmen, Gateman and other personnel on site will be briefed on the need to monitor vehicles entering leaving site;
- spray or cover stockpiles with tarpaulins. (stockpiles be located away from, and down wind, where possible, of potentially sensitive receptors);
- implement wet technologies or dust collection control systems when undertaking breaking out, cutting, drilling or grinding operations;
- effective vehicle cleaning and wheel washing on leaving the construction area;
- regularly inspect local roads and footpaths for evidence of dust contamination. If required they will be cleaned by brushing and or spraying with water; and
- if deemed necessary implement a dust monitoring/sampling regime.

3.4 Vehicles emitting excessive exhaust smoke will be reported to the responsible person who will log and report the matter to the relevant haulier (in the case of delivery vehicles) or, in the case of on-site vehicles, to the Contractor's local representative.

3.5 Vehicles used on the construction site that can also be used on public highways must be in roadworthy condition at all times and meet the requirements of the Road Vehicle (Construction and Use) Regulations 1996. All staff and contractors will be made aware of this requirement and random checks will be carried out.

3.6 Persistent offenders will be reported to the management team and subsequent action will be taken to inform the relevant supplier/subcontractor and to take punitive action.

3.7 Plant and equipment powered by diesel or petrol engines will be regularly serviced /maintained and comply with relevant statutory provisions. Any emissions of excessive

exhaust smoke will be noted and the matter reported to the Contractor's local representative for rectification. Use of the item of plant will cease immediately until suitable remedial actions have been taken to correct the condition giving rise to the unacceptable emissions.

3.8 Plant shall be run only as necessary. Engines shall be switched off when not in use.

Measures to control noise and vibration

3.9 The most significant sources of site noise and vibration will potentially be:

- General site activities (dispersed noise and vibration sources);
- Plant and equipment related activities (point source);
- Vehicles (point source); and,
- Mobile telephones (point source).

3.10 The Contractor will ensure that:

- any action taken to rectify a potential problem does not comprise health and safety issues;
- the amount of noise produced by the site works is minimised under all operating conditions so as far as is practicable;
- if the source of the potential nuisance is determined as unacceptable it shall be stopped immediately or as soon as is reasonably practicable;
- if it cannot be stopped, measures shall be implemented to reduce its impact so far as is reasonably practicable;
- all site equipment that has the potential to create unacceptable noise, is maintained in an acceptable state so as to reduce noise emissions;
- any abatement or prohibition notices served on the site are strictly observed;
- any working hour restrictions are strictly observed;
- any known noisy equipment or plant is located (where practicable) away from sensitive receptors;
- at night, noise emissions from sites to be reduced to an absolute minimum; and
- neighbours within the likely zone of influence should be informed about any activities that are likely to give rise to significantly increased noise levels before they occur.

3.11 For any site that is assessed as particularly sensitive to noise emissions the Contractor will ensure that:

- noise survey(s) are conducted over a representative period of time to identify the levels and sources of external noise around the site boundary(s) throughout a full operating period under normal conditions;

- the survey it is conducted by a competent employee or contractor using calibrated and certificated equipment;
- records created during the survey are entered in the site file/records and
- any recommendations that arise as a result of the survey(s) are adequately implemented.

Fire prevention measures

3.12 Fire prevention is important, primarily to avoid losses but also to avert the formation of toxic gasses and particulate matter generated by burning materials. In addition to local pollution, smoke and combustion products can be taken up into the atmosphere by air currents and potentially deposited over a much larger area.

3.13 The following measures shall be taken to minimise the risk of a fire occurring:

- Fire Risk Assessment to be carried out and reviewed and revised as the works progress;
- good housekeeping practices to be followed at all times (rubbish will not be allowed to accumulate in offices and mess rooms);
- the disposal of any material on site by burning will be prohibited;
- no smoking policy to be enforced;
- electrical wiring in site establishment portacabins to be regularly checked and tested in compliance with company process and procedures;
- wall mounted and floor standing cabin heaters, particularly those sited in drying rooms shall be fitted with a suitable guard to prevent the hot surface from coming into direct contact with clothing or other combustible materials. Free-standing cabin heaters must not be placed where they could come into contact with combustible materials;
- gas heaters/bottles to be turned off before leaving site;
- gas hobs not be left unattended;
- hot working activities - suitable and sufficient risk assessments will be carried out and fire extinguisher equipment will be available at the point of work;
- operatives to be competent in the execution of the hot work process;
- suitable and sufficient fire-fighting equipment shall be provided;
- combustible materials will be removed from the vicinity or, screens of suitable fire-resisting material will be used; and
- fire prevention checklist will be completed during each Site Inspection (Weekly Walk) as required by the Contractorôs Site Management procedures.

Measures to protect water resources

Pollution prevention

3.14 All fuel (including oils) and chemicals will be stored in accordance with the Environment Agency Pollution Prevention Guidelines and will be in bunded areas with an impermeable base, capable of providing at least 110% capacity of the storage tank. The designated fuel storage area(s) will be located away from surface watercourses and drains.

Water abstraction

3.15 Any abstraction of water from surface waters (river, stream or canal) or from groundwater in excess of 20 cubic metres a day must be licensed by the Environment Agency. Abstraction licences have a time limit and set the amount of water that can be abstracted. Licence holders are required to measure and report the amount of water abstracted their licence to demonstrate that the licence conditions are being met.

3.16 The Contractor will ensure that no water is abstracted from surface or ground water for use during construction of the project without prior consent from the Environment Agency. The Contractor will also ensure that the conditions of the licences are being met.

Controlled water discharges

3.17 It is an offence to cause or knowingly permit a water discharge activity, unless authorised to do so by an environmental permit. A water discharge activity includes discharging trade effluent, or anything which is poisonous, noxious or polluting.

3.18 Storm water that is essentially "clean" water can be allowed to enter controlled watercourses without the need for consent. However, if rainwater runs off a heavily contaminated area or passes through an oil interceptor before ultimately discharging to a stream or river, the Environment Agency can demand that an environmental permit should be applied for.

3.19 Any discharges to the public foul sewer must have a trade effluent consent from the local water and sewerage company.

3.20 The Contractor will ensure that no water is discharged to surface or ground waters from the site without the appropriate consent.

Confirmation of other measures such as may be described in the ES

3.21 A phase 1 habitat survey was completed for the cable route in late 2014. A separate ecological mitigation plan has been produced and will be implemented prior to any on site works commencing.

3.22 Ecologists will also be on hand to deliver tool box talks to construction staff, should that be required. Any construction works in ecologically sensitive areas may be overseen by an ecologist, and an ecologist will be available to respond to any questions of concerns construction staff may have in the course of their work.

3.23 Construction works will be carried out in such a way as to ensure that disturbance to any nature conservation site is controlled and that appropriate measures are adopted to protect the ecology of the site and avoid effects on protected species or species of conservation concern, in accordance with relevant good practice and statutory provisions/legislative requirements. Appropriate biosecurity measures and construction practices will also be implemented to ensure that the potential risk for the spread of plant diseases and alien invasive species is reduced as far as practicable.

Travel management information

3.24 As stated above a separate Traffic Management Plan (TMP) will be developed and submitted to the Borough and District Councils and Highways Authority prior to the commencement of development on site.

Measures to prevent the deposit of mud on public highways

3.25 Throughout all phases of the construction there will be the requirement to carry out road sweeping in the immediate vicinity of the construction site. The contractor will enforce measures to avoid the environmental nuisance of the depositing of mud on roads in the immediate vicinity of the construction area.

3.26 These measures will include but are not limited to:

- Use of road sweeping equipment to clean the site of any mud or debris deposited by site vehicles within the vicinity of the site;
- Adequate sheeting of vehicles carrying waste materials; and
- Measures will be taken to ensure that mud and detritus is not swept into gullies.

3.27 Cleaning of site roads will be carried out daily, and the frequency will increase as necessary. Road conditions in the immediate vicinity of the construction site will be monitored consistently throughout the day and swept as necessary. In dry conditions water spraying may also be required at least twice per day.

4 Construction Methodology Information

Detail of site clearance/preparation works

4.1 Topsoil will be stripped, handled and stockpiled in accordance with the Code of Practice for the Sustainable Use of Soils on Construction Sites (Defra, 2011). All topsoil will be reinstated on completion.

4.2 The site and any temporary access roads will be surfaced with a nominal 300mm depth of compacted hardcore, which will be used to provide a suitable working platform for the construction works. Any hardcore/hardstanding will be excavated and land reinstated to its former condition at the soonest practicable opportunity.

Plant/equipment list

4.3 Plant and equipment to be utilised during the various stages of the construction will include but will not be limited to:

- Dump trucks
- Hiab vehicles for deliveries
- Rigid lorries for deliveries
- Articulated lorries for deliveries
- Six axled trucks for spoil removal
- Low loaders for deliveries
- Diesel Generator
- Skip lorries
- Excavation equipment
- Cable installation vehicles
- Portable tools for general installation tasks
- HDD drilling rigs

Installation details

4.4 The cable route installation details are described in paragraphs 5.6.13 to 5.6.51 of the original Environmental Statement for the project. These details are provided at Appendix 3 for information.

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5 Review and Audit Procedures

5.1 This CMP will be supplemented by DONG Energyôs appointed construction contractors prior to the commencement of development.

5.2 This CMP (or later updated version) will be provided to all potential contractors as part of the contract tender process and all bidders will be required to demonstrate how they will deliver, implement and manage their final CMPs for the duration of the construction phase of the project.

5.3 DONG Energy will carry out periodic environmental compliance audits through the construction phase of the project. An assessment of compliance with the approved CMP documents will be a key part of that compliance assessment.

5.4 DONG Energy will manage any corrective actions and iterative updates to the CMP documents. The outcome of those audits and future versions of the CMP documents will be made available to the Borough and District Councils on request.

5.5 The CMP will be subject to comprehensive review every six months during the construction phase as a minimum and as frequently as may be required in the intervening period. All measures set out in the CMP will be communicated to site at staff level via a programme of ótoolbox talksô and on site presentations, or other such mechanisms that may be deemed most effective on site in consultation between DONG Energy and their contractor management team.

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Appendix One

Onshore Cable Route Planning Permissions

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Appendix Two

Indicative Environmental Procedure – HDD Operations – Breakout Mitigation

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Appendix Three

Onshore Cable Installation Methodology (Extract of 2007 Environmental Statement)