

REPORT



Race Bank Offshore Wind Farm

Export Cable Installation Plan Part IV: Consultation Report

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Organisation for Approval, 13th November 2015

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Executive Summary

DONG Energy is planning the construction programme for the Race Bank Offshore Wind Farm. This wind farm will be built off the coast of north Norfolk and Lincolnshire and will consist of 91 six MW wind turbines, two offshore substations, inter-array cabling and two export cables under the seabed through The Wash to a landfall approximately 1km to the east of the outfall of the River Nene. This Consultation Report (hereafter known as the 'Report') accompanies the Race Bank Offshore Wind Farm ('the Project') Export Cable Installation Plan ('the Plan') to be delivered to the Marine Management Organisation (MMO) in order to fulfil pre-commencement condition 5.2.7 of the Project's Marine Licence (L/2012/00217/10 (as amended)) under Part 4 of the Marine and Coastal Access Act 2009. This Report demonstrates how the Project has engaged in non-statutory 'informal' consultation undertaken for the purposes of seeking agreement on the Plan.

In developing proposals for export cable installation, DONG Energy is keen to ensure that all parties with an interest in the export cable proposals have the opportunity to contribute experience and local knowledge to the issue in order to help shape proposals for the export cable installation.

Consultation has been ongoing throughout the development of the proposed Project since the acquisition by DONG Energy Wind Power in December 2013. Undertaking extensive non-statutory informal consultation has enabled the Project to develop good working relationships with consultees early on, which has enabled DONG Energy to identify the key issues and constraints potentially arising throughout the development of the Project.

Consistent feedback to the DONG Energy Project team has been associated with consideration of the issues of cable installation across the intertidal and landfall location. The Project has afforded careful consideration to specifically this issue, and has now developed detailed cable installation proposals to address the physical and environmental challenges posed by the saltmarsh and mudflat environment. On 2nd September 2015 the Project distributed to a number of interested and/or affected consultees, including those specifically listed in condition 5.2.7 of the Project's Marine Licence, the first draft Plan for comment.

As a result of the responses received throughout the consultation process, a number of key issues were identified in relation to the Project. This included issues regarding flood defences, nature conservation and public access. These key issues and the Project's response have been laid out in table form to this Report.

Glossary

Definition	Description
AEZ	Archaeological Exclusion Zone
Bogie	Articulated track system
CDM	Construction Design and Management area
CLB	Cable lay barge
CIP	Cable Installation Plan
Competent Person	A person who has the necessary skills, education, theoretical and practical knowledge and has the technical and practical experience to carry out the assigned task
DP	Dynamic Positioning
DGPS/GPS	(Differential) Global Positioning System
EA	Environment Agency
EIA	Environmental Impact Assessment
HDD	Horizontal Direction Drill
HGV	Heavy Goods Vehicle
HSE	Health, Safety and Environment
KP	Kilometre Point
LGP	Low Ground Pressure
LGPE	Low Ground Pressure Excavator
Megawatt (MW)	A unit of power equivalent to one million Watts
MMO	Marine Management Organisation
Moonfish	Bespoke cable installation tool for the intertidal mudflat and sandflats environment between KP2 – KP8
Multicat	A shallow draft vessel ideal for dive support and wind turbine installation support
PLGR	Pre-lay grapnel run
SAC	Special Area of Conservation
SBP	Sub-Bottom Profiler
SCAR Plough	Y-shaped plough pulled by a vessel for clearing routes for cable installation
Scour Protection	Material (such as rocks or concrete mattresses (???) laid on the seabed to control erosion
SPA	Special Protection Area
SSS	Side-Scan Sonar
Sunfish	Bespoke cable installation tool for the saltmarsh environment between KP0 – KP2
TJB	Transition Joint Bay
UTV1200	Underwater Trenching Vehicle for installing cable in the subtidal environment from KP8 – Array

1. Introduction

Race Bank Offshore Wind Farm (the Project) is an offshore windfarm development to be constructed 27 km off the north Norfolk coast, occupying an area of approximately 62 km². An Environmental Impact Assessment (EIA) was completed for the Project in 2009 and consent for generating up to 580 MW was granted in July 2012. An amended export cable route was consented in June 2013, spanning from kilometre point (KP) 3.3 to the sea defences in addition to the introduction of alternative cable installation techniques. A Supplementary Environmental Report (Haskoning, 2012) provides the environmental assessment for the varied consented export cable route and installation method.

The Project Marine Licence (L/2012/00217 as amended) provides consent for the construction of up to two offshore substations, four export cables and 101 wind turbines. The final design of the Project is expected to provide an installed capacity of 546 MW and will comprise:

- 91 x 6 megawatt (MW) wind turbines mounted on monopile foundations;
- 2 x offshore substations mounted on jacket foundations;
- 1 x 6.3 km interlink cable between the two offshore substations;
- 91 x array cables linking the wind turbines and offshore substations;
- 2 x 71 km export cables linking the windfarm to the onshore export cables at a transition joint bay;
- 2 x onshore export cables; and
- 1 x onshore substation that links the Project to the National Grid.

1.1 Purpose of the Consultation Report

The Project has been awarded a number of consents which relate specifically to export cable installation. Condition 5.2.7 of Marine Licence L/2012/00217 (as amended) requires the following:

*“The Licence Holder must submit a detailed export Cable Installation Plan, including cable landfall works for the approval of the Licensing Authority **in consultation with Cefas, relevant SNCB, Historic England (HE), Maritime and Coastguard Agency (MCA), Trinity Lighthouse (TLH), Royal Yachting Association (RYA), the Local Port Authorities, South Holland District Council and King’s Lynn and West Norfolk Borough Council** at least four months prior to the commencement of export cable installation work. The plan must:*

- *use detailed geotechnical data to ascertain optimal cable burial depth along the length of the export cable (including works in the intertidal zone);*
- *detail the methods used for laying the export cable, minimising where possible the use of jetting in the intertidal area;*
- *detail cable burial depths;*
- *include a burial risk assessment;*
- *include the need, type, sources quantity and installation methods for any scour protection;*
- *include an Intertidal Construction Works Plan for specific details of export cable installation, date and methodology within the Intertidal Zone, along with the use of an ecological clerk of works. Bird deterrents must remain in situ from 01 April to either the commencement of works, or 01 July in the construction year; and*
- *include a detailed Contingency Plan for the intertidal export cable installation.*

Export cable installation must not take place until such time as the Licensing Authority, has approved the export cable installation plan."

In addition to this Marine Licence condition, export cable installation works between the primary sea defence and low water are also permitted by planning permissions awarded by King's Lynn and West Norfolk Borough Council and South Holland District Council. Condition 3 to Permission H18-0102-13 awarded by South Holland District Council and Condition 3 to Permission 13/00189/FM awarded by King's Lynn and West Norfolk Borough Council both require the following:

"Before development can commence the following information shall be submitted to and approved in writing by the Local Planning Authority:

- Detailed export cable burial plan.*
- Detailed contingency plan*
- Detailed saltmarsh mitigation and reinstatement plan*
- Detailed saltmarsh monitoring plan*

The development shall be carried out strictly in accordance with the approved details."

Consultation has been ongoing throughout the development of the proposed Project since the acquisition by DONG Energy Wind Power in December 2013. Undertaking extensive non-statutory informal consultation has enabled the Project to develop good working relationships with consultees early on, which has enabled DONG Energy to identify the key issues and constraints potentially arising throughout the development of the Project. The first round of community consultation took place on early in 2014 when DONG Energy invited members of the general public, local authorities, regulators and statutory nature conservation bodies to the Curlew Centre in Sutton Bridge, Lincs to introduce the Project team and development strategy and timeline. Subsequently, the Project has distributed a number of quarterly newsletters to the wider community and ensured that key interest groups are updated and engaged with activities that might be interest to them.

On 2nd September 2015 the Project distributed to a number of interested and/or affected consultees, including those specifically listed in condition 5.2.7 of the Project's Marine Licence, the first draft Plan for comment. This first submission was followed closely by a presentation event, held at the Curlew Centre, Sutton Bridge on 17th September 2015, in order to allow the Project team to present the Plan and receive some immediate feedback. Written responses to the Plan have further been provided by a number of consultees and the combination of these comments and questions have been presented in the following Report, and fed back into the final revision of the Plan to be issued alongside this report in November 2015.

1.2 Scope of the Consultation Report

In order to address the Marine Licence condition 5.2.7, the following Report has been written to consider consultation responses received by DONG Energy in association with following elements of the Project:

- Installation of the export cable through the primary sea defence;
- Installation of the export cables within the saltmarsh;
- Installation of export cables within intertidal mudflats;
- Installation of export cables extending seawards to the offshore substations; and,

- Installation of export cable interlink between each of the two offshore substations.

Details of the array cable installation will be submitted in the Array Cable Installation Plan, as required under condition 5.2.8 of Marine Licence L/2012/00217 (as amended) due for submission in November 2015.

2. Consultation

2.1 Process & Timeline

DONG Energy has undertaken extensive non-statutory consultation since taking ownership of the Project in 2013 including a number of consultation events, a quarterly newsletter and site visits.

As prescribed under Marine Licence condition 5.2.7, the Project has made endeavours to consult with Cefas, the relevant SNCB, Historic England (HE), Maritime and Coastguard Agency (MCA), Trinity Lighthouse (TLH), Royal Yachting Association (RYA), the Local Port Authorities, South Holland District Council and King's Lynn and West Norfolk Borough Council in order to ensure the proposed works follow best practice, have been assessed within the ES and appropriate mitigation is in place to reduce any environmental and navigational risk.

The following section of the Report details the non-statutory consultation responses received in relation to the Plan in order of receipt:

- Public responses received at Export Cable Installation Plan presentation event – 17th September 2015;
- Natural England Discretionary Advice Service (DAS) response – 23rd September 2015;
- Marine Management Organisation response – 16th October 2015; and
- King's Lynn & West Norfolk Joint Advisory Group response – pending.

All responses received and the subsequent action taken by the Project are detailed in the chapters below with the original response letters provided as Appendices.

2.2 Consultation Responses

2.2.1 Natural England

Table 2.1 below provides a summary of the key issues raised by Natural England in their response letter (dated 23rd September 2015) to the informal consultation process on the Plan and subsequently how the Project has addressed these key issues.

Table 2.1: Natural England's Key Consultation Issues & Project Responses

Consultee	Issue No.	Consultation Issue	Project Response
Natural England	1	<i>No immediate concerns with the sea defence breach so long as <u>sheet piling</u> were not to advance beyond the toe of the sea defence.</i>	DONG Energy is continuing to engage with the Environment Agency regarding the current proposals for sea defence works. If sheet piling is approved by the Environment Agency, it is not anticipated to be required beyond the foot of the sea defence.
	2	<i>Reiterated the importance to provide <u>confidence and evidence</u> that the bespoke tools will work as proposed.</i>	DONG Energy welcomes information from Natural England regarding the possible UK locations, and will be pursuing the development of trial criteria for a Belgium based trial in January 2016.
	3	<i>Raised concerns about the use of <u>tow assist</u>, particularly the potential for this to cause deep ruts and a 'pavlova effect'.</i>	The tow assist feature is fall-back contingency, only to be utilised in the event of complete mechanical failure. Sunfish however offers significant enhancements over that of previous tools including a longer length of track, lower centre of gravity and significant power redundancy built-in.
	4	<i>Requested further detail on the <u>dimensions of the starter pit</u> to avoid the need for grade-in of the plough and the duration and location that the spoil is sidecast.</i>	DONG Energy confirms, following discussion with Natural England on 5th November 2016 that where a starter pit is required, its dimensions would be 3.5 x 2.0 x 7.0 m at the base of the sea defence, and the spoil will be stored immediately adjacent to the pit for a maximum of 24 hours per cable. However, should it be possible not to dig a start-pit then a grade-in only options will be performed.
	5	<i>Questioned the <u>time that Sunfish would remain</u> on the saltmarsh.</i>	The pull-in operation will require no more than 24 hours per cable to be completed. Each cable is anticipated to be separated by approximately one month.
	6	<i>Requested clarification on <u>how long temporary trackway</u> would remain in place for.</i>	To clarify, the Project requires the use of aluminium trackway for 25 days plus an additional five days to recover.
	7	<i>The full extent of <u>impact from a trackway</u> still needs to be considered</i>	Impact of temporary trackway was considered in the original SEI Section 2.4.
	8	<i>Expressed the view that use of <u>cable rollers</u> had not <u>previously been assessed</u> or consented for the works.</i>	The impact of rollers on the saltmarsh is considered within the Appropriate Assessment's consideration of impact of up to four cable installation corridors, each being 20 m wide.

Consultee	Issue No.	Consultation Issue	Project Response
	9	<i>Highlighted the need for <u>bird scarers</u> to mitigate impacts to breeding Redshank.</i>	DONG Energy confirms that bird deterrents, in the form of flags, kites and decoys will be deployed in April and May 2016 by RSK Ecology. As discussed on 5th November 2016, where deterrents are in place for a week or more without other activity present, an ecologists will reposition to prevent habituation.
	10	<i>Requested further clarification to the <u>duration of the intertidal work using Moonfish</u>.</i>	DONG Energy clarifies that mudflat cable installation, undertaken with the Moonfish tool between KP1.7 and KP8.0, is anticipated to take 14 days to complete. This will be clarified in the final revision of the Plan in a programme.
	11	<i>Expressed a number of concerns regarding the potential <u>impacts on cocklebeds</u>.</i>	The DECC Appropriate Assessment did not state explicitly cable alignments would avoid high-density cocklebeds and identified only a small proportion of the cocklebeds (250,000 m2) impacted directly, the effects of which would be temporary and localised. However, DONG Energy will endeavour to avoid landing and laying of anchors within the charted high-density cocklebeds unless required in an emergency situation. This information will be updated in the Environmental Report (Haskoning, 2015).
	12	<i>Keen to <u>advance commencing works prior to 1st May</u> to increase confidence of completion within one season.</i>	The current programme enables the cable lay barge to arrive and land within the intertidal around 23rd April 2016, which enables Sunfish to commence cable landing at the beginning of May 2016. This will be clarified in the final revision of the Plan in a programme.
	13	<i>Expressed a number of concerns regarding the <u>local levelling of sandwaves</u>.</i>	To clarify, the anticipated 60% sediment losses do not relate to loss of material from the sandbank system, but from an engineering perspective, to the potential losses to the cable burial process. DONG Energy is preparing a Marine Licence application for sandwave levelling which includes environmental information to support a Habitats Regulations Assessment.
	14	<i>Requested various further details on <u>number of passes, backfilling, and hard soil conditions</u>.</i>	DONG Energy will employ a maximum of three passes, as is recommended best practice (either three jetting passes or one initial mechanical pass and two jetting passes).

Consultee	Issue No.	Consultation Issue	Project Response
	15	<i>Use of a <u>mass flow excavator</u> as contingency for 15% of the export cable route should not be considered contingency, and fully assessed.</i>	To clarify, the worst case scenario of up to 15% mass flow excavation is of lengths pre-levelled and joint-pit areas, not the entire cable route. This corresponds to approximately 75 m of mass flow excavation only.
	16	<i>Expressed concern regarding jointing works and the <u>potential impacts to seals</u>.</i>	The Project will implement a code of conduct for vessel operators, including advice to operators to not deliberately approach marine mammals and to avoid abrupt changes in course or speed should marine mammals approach the vessel. Best practice measures will also be adopted when in close proximity to seal haul-out sites within and around The Wash. The nearshore jointing vessel has a guarded propeller, however a full commitment to installing guards across all ducted propellers is not deemed appropriate or viable.
	17 & 18	<i>A <u>full contingency plan</u> be provided rather than a section within the main document.</i>	DONG Energy confirms the contingency section of the Plan will be further developed into a standalone Contingency Plan document to be provided as part of the final submission.
	19	<i>Highlighted aspects of the eCIP relating to <u>recovery of the saltmarsh</u> from the Lincs cable installation that it considers incorrect.</i>	Noted. DONG Energy will revisit the saltmarsh recovery section of the Plan and Environmental Report.
	20	<i>Highlight the positive experience that they have of the contractor that performed the <u>Tetney Sealine</u> replacement project.</i>	DONG Energy engineering teams have been notified.
	21	<i>Noted that a number of <u>documents were yet to be finalised</u>.</i>	Target burial depths are to be provided as part of the Cable Burial Risk Assessment documentation which is currently being revised following consultation with the Port Authorities. Royal HaskoningDHV have been contracted to provide a full site characterisation report to accompany the final version of the Plan. Seabed mobility studies were provided to Natural England on 15th October 2015.

2.2.2 Marine Management Organisation

Table 1.2 below provides a summary of the key issues raised by the Marine Management Organisation (MMO) (whom consulted specialists at Centre for Environment, Fisheries & Aquaculture Science (Cefas)) in their response letter (dated 16th October 2015) to the informal consultation process on the Plan and subsequently how the Project has addressed these key issues.

Table 1.2 The Marine Management Organisation's Key Consultation Issues & Project Responses

Consultee	Issue No.	Consultation Issue	Project Response
MMO (Cefas)	1.1	<i>'Export cable burial risk assessment' (Anatec, 2015) was not provided for review and it cannot be confirmed whether the appropriate information was extracted from this report.</i>	The Cable Burial Risk Assessment is currently being revised following consultation with the Port Authorities. Until such a time that agreements are reached with the Port Authorities, DONG Energy will not be in a position to share this reporting.
MMO (Cefas)	1.2	<i>Equipment has not been tested in the field and therefore there is no direct evidence that it will work as intended. The MMO welcomes further discussion of the potential for an independent trial.</i>	DONG Energy notes that the requirement for an independent trial of the tools has not been included in the Project Marine Licence. Notwithstanding this, owing to the depth of development works that has gone into the Sunfish tool, the confidence we have in its performance and in the spirit of cooperation, DONG Energy welcomes the opportunity to discuss our intentions with regards to a trial over the coming months. In particular, please find enclosed with this response, our formal proposal note on the Scope of an Export Cable Installation Trial.
MMO (Cefas)	1.3	<i>Proposed methodologies for the intertidal area (saltmarsh and mudflat) were not assessed in the Environmental Statement (ES). Specifically the use of <u>rollers</u> has not been considered within the original ES and the subsequent Supplementary Environmental Information Report submitted in 2012.</i>	Whilst the detail of cable rollers was not specified in the original SEI (2012), it was noted that "the cable will either need to be laid by mechanical means, such as chain trenching tools (utilised for Lincs) or similar (and installed at the same time), or pulled from an onshore or offshore vessel, along rolling tracks installed on bog mats." As reported in the Plan Environmental Report, the impact of rollers on saltmarsh habitat is considered within the original Appropriate Assessment's consideration of impacts of up to four installation corridors. This assessment took an extremely precautionary approach to disturbance on the saltmarsh, considering an overall footprint of disturbance from open trenching across a 20 m corridor for each of the four cables along a 1,200 m route and therefore the proposed methodologies are considered to be well within the original assessments.

Consultee	Issue No.	Consultation Issue	Project Response
MMO (Cefas)	1.4	<i>Risk associated, either with the <u>equipment not being ready for deployment by May 2016</u> or that they do not work as intended and that <u>other equipment will be needed</u>. This has not been considered fully in the contingency plan. Further information is required to detail the worst case scenario using alternative equipment should these fail and the level of impact in comparison to the original ES.</i>	DONG Energy is confident in our contractors (Jan de Nul) ability to complete fabrication and testing of the Sunfish and Moonfish tools to schedule. Once fabrication is complete, the tools will be fully tested and trialed to DONG Energy's satisfaction prior to use on site. If an element of the cable installation does not to work as intended, the approved contingency plan will be consulted and the appropriate measure enacted. The original contingency section of the Plan will be further developed into a standalone document, where those contingencies considered worst case will be incorporated into the Environmental Report.
MMO (Cefas)	2.1	<i><u>Local levelling (dredging)</u> of sandbanks was not considered in the ES and this will require a separate marine licence.</i>	DONG Energy is currently preparing an application for a Marine Licence for sandwave levelling operations, and as part of this environmental information to support a Habitats Regulations Assessment is being provided by our environmental consultants Royal HaskoningDHV.
MMO (Cefas)	2.2	<i>No evidence has been provided on <u>how the removal of sediment from the sandwaves will affect the surrounding community or benthic environment</u>, just that the footprint predicted to be affected by the works is less than predicted in the ES. This must be included as part of the marine licence application.</i>	See response 2.1.
MMO (Cefas)	2.3	<i>More evidence is required to be confident that the <u>proposed levelling of sandwaves will ensure successful burial of cables</u>, and that the removal of a sand wave will remove the necessity of scour protection.</i>	To clarify, the levelling of sandwaves at a small number of locations along the export cable is designed to improve the efficacy of the underwater trenching vehicle (UTV1200) in order to achieve optimal burial depth below mobile sands. Without levelling, there is the possibility the UTV will not achieve the required burial depth below mobile sand features and subsequently the shallow buried cable becomes exposed. Burial cannot be guaranteed completely but sandwave levelling does increase the likelihood. Please note, cable protection is not currently considered as part of condition 5.2.7 and is dealt with separately under condition 5.2.9 of the Project Marine Licence.

Consultee	Issue No.	Consultation Issue	Project Response
MMO (Cefas)	3.1	<i>The proposed export cable installation plan presents a number of positive modifications which have developed in response to lessons learned. However further information is required to fully consider whether <u>sandwave levelling</u> is a robust enough way to mitigate from cable exposure and further discussion is required on the potential for <u>a trial of the bespoke intertidal tools</u> to provide assurances that they will work as intended.</i>	See response 2.3 and 1.2 respectively.
MMO (Cefas)	3.2	<i>Specific mitigation and monitoring for Cockle beds and Saltmarshes are provided in separate documents, these are being commented upon separately.</i>	Noted.

2.2.3 Stakeholder Workshop

Table 2.3 below provides a summary of the key issues raised by the various stakeholders at the September 17th workshop held at the Curlew Centre, Sutton Bridge. Please note, the following text is not verbatim.

Table 2.3 Workshop Key Consultation Issues & Project Responses

Consultee	Issue No.	Consultation Issue	Project Response
Cllr. Chris Brewis	1	<i>How far across the sea defences the proposed shuttering would be installed and whether this could weaken the sea defence?</i>	If sheet piling is approved by the Environment Agency, it is not anticipated to be required beyond the foot of the sea defence.
Roger Ward (KLJAG)	2	<i>A key element would be a commitment by DONG to conduct post-construction monitoring and possible reinstatement activities</i>	DONG Energy is committed to working closely with the Environment Agency to ensure the structural integrity of the primary sea defences is maintained. If post-construction monitoring is deemed necessary, the Project will follow the advice of the regulator.
Roger Ward (KLJAG)	3	<i>Concern has been previously raised regarding seawater ingress through shuttering locations</i>	See response 2

Consultee	Issue No.	Consultation Issue	Project Response
Emma Kirk (Environment Agency)	4	<i>Open breaches would be the Environment Agency's last resort only considered once all the alternatives have been assessed</i>	Noted. DONG Energy has engaged Costal Engineers from Mott MacDonald to ensure that all possible options are adequately evaluated and the most appropriate solution is developed alongside guidance from the Environment Agency. The Project looks forward to the opportunity to discuss the preferred proposals further during November 2015 with the Environment Agency.
Cllr. Chris Brewis	5	<i>Would the sea defence would be opened-up on neap tides only?</i>	Sea defence works are planned to commence during the month of April 2016, in order to allow the intertidal and saltmarsh cable installation activities to commence at the beginning of May 2016. A full Flood Risk Assessment will be conducted, detailing flood mitigation and warning systems to be put in place, prior to any consent being granted by the Environment Agency.
Janet Blundell (KLJAG)	6	<i>Confirm whether adequate and safe access / steps will be provided around the sea defence breach, as Centrica initially failed to provide this.</i>	Noted. DONG Energy has observed many lessons learned from the neighbouring cable installation works. We are keen to ensure that public access is maintained as much as reasonably possible and will be developing a public access strategy alongside our application to the Environment Agency for Flood Defence consent.
Lou Burton (Natural England)	7	<i>How far into the saltmarsh would the sheet piling be installed?</i>	See response 1
Lou Burton (Natural England)	8	<i>What type of piling installation method would be used, as vibro-piling would be a preferred method which may allow an earlier working window [before 1 May].</i>	See response 4
Roger Ward (KLJAG)	9	<i>Silent piling methods would be most appropriate if noise was a key consideration</i>	Noted.
Sharron Bosley (EMS)	10	<i>It appears that the shutting breach methodology is DONG's preferred methodology, can that be confirmed?</i>	See response 4
Roger Ward (KLJAG)	11	<i>DONG will need to commit to post-construction monitoring of the sea defence integrity with embedded sensors.</i>	See response 2

Consultee	Issue No.	Consultation Issue	Project Response
Stafford Proctor (Tennant Farmer)	12	<i>For sea defence strength purposes, the cables should be placed as far apart as possible.</i>	Noted. DONG Energy have contracted Coastal Engineers from Mott MacDonald to assess the options. The most appropriate solution, which ensures satisfactory burial, maintains the integrity of the sea defences and reduces disruption as much as practicably possible will be developed alongside guidance from the Environment Agency prior to an application for Flood Defence consent being applied for.
Mark Robinson (Environment Agency)	13	<i>Will there be another open forum for these additional topics such as the EA's Flood Defence Consent [sea defence crossing methodology].</i>	DONG Energy is keen to engage directly with the Environment Agency in order to discuss our proposals and develop the solution further. A meeting has been scheduled to progress the Flood Defence consent elements specifically during the month of November 2015.
Janet Blundell (KLJAG)	14	<i>As a resident of East Bank, there have been serious concerns with increased traffic use and management along the narrow road and its condition. DONG should commit to consider traffic management measures and road condition surveys prior to activities commencing.</i>	Noted. DONG Energy would like to reassure the local community that this issue is being fully considered. A Traffic Management Plan will be developed for the works. This document, which has to be approved by the Local Authority, describes the volume, duration and routes that traffic associated with the works will make. A road surface condition survey was completed for the East Bank (and other main access routes utilised for the onshore cable installation and onshore substation construction activities) at the beginning of 2015. For completeness, this survey will be repeated in 2016.
Cllr. Chris Brewis	15	<i>How long will the aluminium trackway remain in place?</i>	The aluminium trackway will be utilised only as a contingency, to enable foot and low ground pressure vehicles to traverse the length of the cable alignment during cable installation. DONG Energy will require the trackway to be installed for a total of 25 days per cable, and a further five days will be required to remove it.
Roger Ward (KLJAG)	17	<i>The weight of the machines on the saltmarsh is a very important metric.</i>	Noted. The weight and ground pressure of the tools have been the most important metrics when discussing the development of the Sunfish and Moonfish cable installation tools. These bespoke tools, which have been specifically developed for the site conditions in order to try and minimise the impact of cable installation as much as practicably possible, have been designed to have the lowest possible ground pressure, whilst being capable of achieving deep burial.

Consultee	Issue No.	Consultation Issue	Project Response
Alan Gibson (MMO)	18	<i>Will the rollers be dropped off the Sunfish tool or placed down?</i>	The cable roller design links each roller to the next, in order to allow the Sunfish installation tool to carry the roller and place them down behind it as it traverses the intertidal mudflat and saltmarsh. Owing to the roller linkages, roller deployment speed will be restrained by the speed of the Sunfish tool as it moves forward.
Cllr. John Grimwood	19	<i>As the tracks do not have teeth, is there going to be sufficient traction for the Sunfish not to slip as it pulls the plough through the sediment? Concern is there is not enough traction.</i>	The Sunfish tool, with its long, wide and flat tracks to ensure its mass is spread across a wide surface area has been specifically designed to operate in the intertidal and saltmarsh environment at Terrington Marshes. The tool will undergo a number of tests and will be field trialled abroad prior to its use on site. The Moonfish tool, which is designed to operate in the intertidal mudflats alone, incorporates grouser tracks to provide added traction in the intertidal mudflats.
Cllr. John Grimwood	20	<i>Will the Sunfish be trailed before it enters Terrington saltmarsh?</i>	Owing to the depth of development work that has gone into the Sunfish tool, we are confident of its performance. Therefore, along with trials being conducted by DONG Energy and our export cable installation contractor to test and optimise the installation tools, DONG Energy proposes to undertake trials of the sunfish tool in January 2015. DONG Energy will invite representatives of the MMO and the statutory nature conservation body (SNCB) to witness the trial.
Roger Ward (KLJAG)	21	<i>Would welcome sight of the Sunfish's technical specification in order to make an assessment of its impacts.</i>	Noted. However, as the Sunfish and Moonfish tools are bespoke machines, technical specification sheets as would be available for an off the shelf tool are not available. However, the technical specification information for all tools is available in the Export Cable Installation Plan.
Roger Ward (KLJAG)	22	<i>Would like to see the Sunfish tool working in a real world environment prior to it entering the site.</i>	DONG Energy proposes to undertake trials of the sunfish tool in January 2015 and a proposal has been issued to the MMO and statutory nature conservation body (SNCB). The reporting of these trials can be made available on request.
Chris Gibson (Natural England)	23	<i>The distinction between a demonstration and a trial needs to be made.</i>	Noted. DONG Energy requests from Natural England very clear parameters and criteria of success in order to ensure that any trial proposal satisfy the SNCB's understanding of what a successful trial might be.

Consultee	Issue No.	Consultation Issue	Project Response
Roger Ward (KLJAG)	24	<i>The issue of a trial must be confronted and a provision made for practical trials and demonstrations made</i>	See response 22 and 23
Janet Blundell (KLJAG)	25	<i>Have DONG considered all the “what ifs”? They would expect that a full contingency plan has been developed, as it appeared to spectators that when Centrica came into trouble during Nessie cable installation, those personnel on site did not know what to do.</i>	Section 6 of the Preliminary Export Cable Installation Plan detailed the contingency planning. Having taken consideration of consultation responses from the KLJAG and SNCB, DONG Energy will further develop Section 6 into a standalone Part of the Plan which explored contingency planning in greater detail.
Cllr. John Grimwood	26	<i>When the Sunfish is finished cable installation across the saltmarsh, does it return straight back to the transporter barge?</i>	DONG Energy can confirm, as described in section 3.6 of the preliminary Plan, the Sunfish will remain on standby to assist with cable handling before the Moonfish gets underway, at which point the Sunfish will be returned back to the transporter barge.
Roger Ward (KLJAG)	27	<i>Will there be any joints between the two tools?</i>	The export cable lengths are described in section 2.5 of the preliminary Plan, which describes the first complete length (8 km) to be installed across the saltmarsh and mudflats by the Sunfish and Moonfish tools. There will be no jointing within this section. The first joint will be at around 8 km offshore, between the intertidal cable length and mid-section cable length.
Janet Blundell (KLJAG)	28	<i>Nessie tool created significant berms after cable installation which did not disappear naturally for a long time and had to be remediated manually. Are the Sunfish and Moonfish tools likely to create berms too and if so, how will these be remediated?</i>	As described in section 5.6 of the preliminary Plan, the Sunfish and Moonfish tools have been specifically designed and manufactured to reduce the likelihood of such occurrences happening as much as practicably possible.
Lou Burton (Natural England)	29	<i>Confirmed that sediment berms were created by both tools [in saltmarsh and mudflats]. The mudflat berms, tidally affected, eventually naturally dissipated, but the saltmarsh berms had to be manually remediated.</i>	See response 28
Roger Ward (KLJAG)	30	<i>Is it possible that Annex I habitats, present on the sandwaves which need to be levelled, will be destroyed or will DONG microsite around these?</i>	DONG Energy has completed offshore surveys for benthic Annex I habitats and can confirm that no such habitats were positively identified.

Consultee	Issue No.	Consultation Issue	Project Response
Roger Ward (KLJAG)	31	<i>Asked to confirm whether the export cable is left on the seabed and what the risk to sea users will be, and whether the Port Authorities will be approached on this topic?</i>	DONG Energy can confirm, as per section 3.7.3 of the preliminary Plan, that any exposed cable left of the seabed prior to jointing will be guarded by a vessel until jointing operations are complete. Committed to continuing and full engagement with the three local Port Authorities, the preliminary Plan has been issued for comment and the Cable Burial Risk Assessment is currently under discussion.
Alan Gibson (MMO)	32	<i>Could DONG confirm that any marker buoys deployed to highlight cable on the seabed would be adequately and appropriately lit as per the relevant regulations?</i>	See response 31
Roger Ward (KLJAG)	33	<i>The most important topic for this element is going to be the burial depths and maintenance of these depths.</i>	DONG Energy is currently in discussions with the three local Port Authorities concerning this issue and will be pleased to update the KLJAG when discussions are complete.
Lou Burton (Natural England)	34	<i>Could Natural England have sight of DONG's seabed mobility studies?</i>	Seabed mobility studies were provided to Natural England on 15th October 2015.

2.2.4 King's Lynn Joint Advisory Group (KLJAG)

Table 1.4 below provides a summary of the key issues raised by the King's Lynn Joint Advisory Group (KLJAG) in the 4th November response letter. Please note, the following text is not verbatim.

Table 2.4 KLJAG Key Consultation Issues & Project Responses

Consultee	Issue No.	Consultation Issue	Project Response
KLJAG	2.1.1	<u><i>Sea Defence Breach</i></u> <i>Big concerns about the proposed depth of the cable as it emerges on the Marsh frontage. We understand that the cable insertion depth on the landward side would be deeper than this depth and as this would create a downward slope towards, and beneath, the sea defences, it has the potential to create a passage for water under the sea defence wall.</i>	DONG Energy is committed to working closely with the Environment Agency to ensure the structural integrity of the primary sea defences is maintained. If post-construction monitoring is deemed necessary, the Project will follow the advice of the regulator. Consultant Coastal Engineers from Mott MacDonald have assessed the various options. The most appropriate solution, which ensures satisfactory burial, maintains the integrity of the sea defences and reduces disruption as much as practicably possible will be developed alongside guidance from the Environment Agency prior to an application for Flood Defence consent being applied for.
	2.1.2	<u><i>Salt marsh Cable Installation</i></u> <i>[No comment received]</i>	None
	2.1.3	<u><i>Mudflat Cable Installation</i></u> <i>Sunfish on the marsh section, and Moonfish on the intertidal section, is still a major concern. Disappointed that there is no convincing data to prove their viability in the absence of a trial demonstration. Concern has been expressed over the intention to lay aluminium trackway on the marsh during the growing season and for it to be in place for 25 days per export cable, i.e. 50 days in total. In addition, (referring here to 5.1) we wish to suggest (as our Geologist member has pointed out) that 'sediments' not 'soils' would be a more accurate description.</i>	DONG Energy notes the KLJAG's concern regarding the Sunfish and Moonfish cable installation tools but would like to provide reassurance that the regulator and SNCB are being fully consulted throughout the process and that tools will be fully tested before entering Terrington Marshes. As the tools are currently under development, it is currently not possible to prove viability of the tools, but when this information becomes available it will be provided to consultees on request. The deployment and use of aluminium trackway is purely to reduce the likelihood of damage to the saltmarsh vegetation and create a safe working platform for people and vehicles where required in a contingency scenario. The duration of trackway deployment has been discussed with the regulator and SNCB and, following post-installation surveys earlier in 2015, it has been agreed that a 25 day period is appropriate. The use of the word 'soils' will be corrected in the final version of the Plan.

Consultee	Issue No.	Consultation Issue	Project Response
	2.1.4	<u>Local Levelling of Sand waves</u> <i>There has to be some compromise between the scale of the impacts (by undertaking measures to ensure the cable is buried to an optimum depth) against the risk that if this doesn't happen, then reburial may be required. We also have concerns regarding the current predicted life-span of the wind farm and its cables in the Wash. Our 'local knowledge' is that the state of the sea bed can and does change. It is imperative to take this into account, especially since the predicted life span of the development is 25 years, and any form of cable protection placement may well increase the significance of any impact to what has currently been predicted.</i>	DONG Energy is only considering local levelling of sandwaves at discrete locations where cable burial may be compromised if it were left unlevelled. As described in the Plan Environmental Report, assessment of the local levelling works demonstrates that the associated potential impacts are of no greater significance than those identified in the existing assessments.
	4.	<u>Offshore Cable Installation Methodology</u> <i>With regard to the new custom built equipment: the cable laying Isaac Newton (pre-trenching), the Bartolomeu Dias, (combined insertion tool), the SCAR plough and the UTV1200 trencher, all have unknown outcomes. Our understanding is that is possible that the entire proposal would have a better overall outcome with a deeper cable burial depth in the marine environment. We feel very strongly that the three Ports in the Wash area must be entirely satisfied and in agreement with any mitigations. Furthermore, we feel that less seabed damage to some of the designated features could be achieved if this were the case. We take note of the proposal to undertake a pre-lay grapnel run along the entire export cable route from KP8 to KP71.2. We do not believe this is within the original licence consent and expect an EIA will be required to assess any impact of this proposed activity on sensitive SAC features within the cable corridor.</i>	Each of the tools described have been selected by DONG Energy because we are confident in their ability to successfully complete the works to the satisfaction of all parties. All of the vessels and tools are iterations of known, tried and tested technologies commonly used for cable installation activities. Whilst the mentioned vessels are newly fabricated, all equipment will have been fully trialled and tested before cable installation works commence. All three local Port Authorities have been, and will continue to be, fully engaged in the process of agreeing the Cable Burial Risk Assessment. The amount of direct physical damage to the seabed has already been greatly reduced, by the reduction in the number of cables from four to two and the commitment to locally level sandwaves in order to achieve optimal cable burial and negate the need for cable protection. Route clearance (detecting and removing any obstacles including boulders) and a pre-lay grapnel run (removing any debris deposited on the seabed after the route clearance) were fully assessed in the original ES (2009) under paragraphs 4.10.13 – 4.10.14.

Consultee	Issue No.	Consultation Issue	Project Response
	6.	<u>Contingency Planning</u> <i>We are not satisfied that sufficient information is currently available in the event of a total failure of this untried methodology on the sea marsh and Intertidal foreshore sections. For example, how will the cable be inserted? What impact will this then have on the interest features which are an integral part of the designations should failure occur?</i> <i>The least we would expect is an HRA for the contingency plan as these are outside the scope of the original MMO licence.</i>	Section 6 of the Preliminary Export Cable Installation Plan detailed the contingency planning. Having taken consideration of consultation responses from the KLJAG and SNCB, DONG Energy will further develop Section 6 into a standalone Part of the Plan which explored contingency planning in greater detail.
		<i>We noted from our continuing observations that some depressions were visible after the use of the trackway during geological/UXO investigations earlier in 2015.</i>	A pre-construction saltmarsh survey has recently (September 2015) been carried out for DONG Energy along the export cable route in order to record an up to date baseline of saltmarsh vegetation condition prior to works commencing. This information will be used to support the Saltmarsh Mitigation and Reinstatement Works Plan which is to be submitted to the regulator in due course.
		<i>We appreciate that the use of a track (for contingency reasons) may have to be used as a last resort, recognising these measures are better than none.</i>	The use of trackway for the cable installation is purely to reduce the likelihood of damage to the saltmarsh vegetation. The deployment has been discussed with the regulator and SNCB and, following post-installation surveys earlier in 2015, it has been agreed that a 25 day period is appropriate for this location.

3. Appendices

Appendix 1: Natural England Consultation Response Letter

Date: 23rd Sept 2015
Case ID: 1429 Consultation number: 164811
Your ref:

Ian Renshaw
Lead Environment and Consents Specialist
DONG Energy
EMAIL ONLY



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Dear Ian Renshaw,

Race Bank Offshore Wind Farm (OWF): Preliminary Export Cable Installation Plans

Thank you for consulting Natural England on the 2nd September 2015 regarding the preliminary export cable installation plan. Please accept the following as Natural England's advice under our Discretionary Advice Service (DAS).

Summary

DONG Energy has provided a good overview of the current proposals for the installation of the export cable installation. However there are several areas that would benefit from further detail to ensure that the impacts are fully considered, particularly where novel tools/ approaches are now being considered.

Please note that the following advice is currently provided on the basis that permission for the sea defence breach will be secured from the Environment Agency (EA). If permission is not secured for this approach then we would subsequently need to revise our advice in relation to that element of the proposals.

Natural England has several main concerns – please see bullet points and detailed comments below:

- Lack of trial in relation to the novel tools: Sunfish and Moonfish,
- Further information required on the impacts from the proposed use of Sunfish including details on track design, the tow assist element and the potential scale of damage/disturbance to vegetation and sediment,
- The use of a temporary aluminium trackway within the saltmarsh outside the parameters of the original assessment,
- The use of cable rollers within the saltmarsh outside the parameters of the original assessment,
- Further information required for the impacts from the proposed use of Moonfish including track design, impacts from the barge landings and anchor deployment,
- Impacts to cockles,
- Proposal for early mobilisation,
- Local levelling of sandwaves – impacts outside the parameters of the original assessment,

- Use of a chain cutter offshore,
- The need for a through contingency plan, and
- An alternative methodologies document should be provided to outline the justifications for why other methods have not been deemed appropriate.

Detailed comments

Saltmarsh KP0 – KP1.7

1. Sea Defence Breach, section 2.1.1, page 13: Natural England has no immediate nature conservation concerns with the proposal of a sea defence breach as long as any sheet piling does not go beyond the toe of the sea defence and is installed from on top of the sea defence only. However, it is noted that the Environment Agency (EA) are yet to agree to such proposals and therefore it should be noted that Natural England's advice will be subject to change should proposals change. Noting that other installation methods under the sea defence may lead to a greater impact on Annex I saltmarsh habitats than was originally assessed in 2013.
2. Lack of trial (eCIP), section 2.1.2, page 14: Natural England notes that there will be a factory trial and a 'wet trial' prior to construction, but that there will be no trial directly in saltmarsh. Natural England reiterates the importance of a trial to provide confidence and evidence that the bespoke tools will work as proposed and reminds DONG Energy that it was made clear that a trial would be required when providing advice to the MMO on the original consent. In particular Natural England queries:
 - a. how vegetation will be prevented from becoming stuck, trapped and ripped out by the tracks,
 - b. how realistic it is that the vegetation will just fall back into place as the plough installs the cable,
 - c. what is the likelihood of berm material being produced;
 - d. will sediment become compacted and/or rutted by the machine with and without the cable; and
 - e. whether the towable element will result in deep ruts/pavlova effect (see point 3 below).

A trial to provide assurances in relation to the above impacts is therefore considered necessary. Further discussions with the MMO and DONG Energy regarding the potential for an independent trial are welcomed to ensure that it is a 'trial' rather than a 'demonstration'.
3. Towable element (eCIP, section 5.11, page 46): Natural England highlights that there are concerns associated with the proposed tow assist element as a contingency approach. From previous experience with the Lincs OWF the use of a winch resulted in deep ruts within the saltmarsh (the 'pavlova effect') as the machine was pulled across the saltmarsh rather than under its own propulsion. Evidence from post installation monitoring of the saltmarsh has shown that in these areas it has taken far longer than predicted to recover. Further evidence is required to provide confidence that the winch is suitable and we would expect this element to be trialed prior to use.
4. Starter pit (eCIP section 3.5.4, page 26): Natural England notes that the excavator arm will create an initial starter pit to 1.5m to avoid a 'grade-in' and notes that the size will be kept to a minimum with spoil sidecast for the shortest amount of time. Further detail is required as to the proposed size of the starter pit and the duration that the spoil is proposed to be sidecast for and where the spoil will be stored. NB: This was not considered as part of the original assessment in 2013.

5. Sunfish remaining in position near sea defence (eCIP section 3.5.1, page 35): Once sunfish has deployed all the rollers it is noted that it will remain in position whilst the cable pull in operation takes place. Further detail is required on the proposed location and duration that the Sunfish will remain in position for on the saltmarsh to inform the footprint and extent of impact. The location where Nessie 5 stood on the saltmarsh for several days after recovering Nessie 3 during the first Lincs cable installation is still evident 4 years on with pooling water and limited vegetation. It is believed that this is due to compaction of the sediment and the resulting depression capered to the surrounding saltmarsh.
6. Temporary trackway deployment (eCIP, section 3.2, page 21): Natural England notes that a temporary trackway is proposed to be installed adjacent to each export cable for pedestrian traffic and vehicular movement in place for 25 days (inclusive of time to install and remove) per export cable. Can DONG Energy please provide clarification as to how long the trackway will be deployed as it is reported to be 25 days in total (eCIP section 3.2) but in the eCIP intertidal doc (table 5.1) it is reported that the trackway will be deployed for 21 days, with removal taking 5-6 days. Please note that the details relating to the use of a trackway were not considered in the original assessment undertaken in 2013 per see Point 7..
7. It is noted that this proposal falls within the assessments undertaken for the consent in terms of the total footprint area within the assessed cable corridor. However, Natural England believes that the full extent of impact still needs to be considered given the duration it is proposed to be in place and the potential weight of vehicles (i.e. loss of vegetation rather than just flattening and yellowing to grasses with some structural damage to other species as reported in section 6.6.9 page 32). Natural England is pleased to see that bog mats will not be implemented. Whilst it is stated that the trackway will only be used as contingency Natural England highlights that it will still be in place and therefore the direct impact will occur, with or without vehicular and personnel access.
8. Cable rollers (eCIP, section 3.5.1, page 25): Natural England notes the proposal that Sunfish will deploy cable rollers from KP2 to the sea defence from an inbuilt cassette and highlights that the placement of rollers across the saltmarsh was not previously assessed in 2013. Please note that cable rollers have not previously been consented for works across the saltmarsh (i.e. for Lincs OWF) and whilst it is recognised that floatation of a buoyant export cable may not be appropriate for this location, there is an increased risk of impact from abrasion and loss of vegetation, erosion of substrate/soil and compaction from the concentrated areas beneath the weight bearing rollers. It is noted that the rollers underwent a placement and behaviour trial within the saltmarsh. However, as set out at the time of consenting the trial, Natural England does not believe that this trial fully considered all necessary impacts such as: increased duration, increased weight from the cable (given the 107kg/metre weight – comms from workshop held on 17th September), whether the rollers will remain in position through any tidal inundations and if yes will there be any scouring of the surrounding sediment. Therefore Natural England requests further information is required in order to fully consider the impacts from the use of rollers.
9. Bird Scarers: It should be noted that bird scarers in the form of flags would need to be deployed to mitigate any impacts to breeding Redshank a notified SSSI if works don't commence immediately after the high spring tides in April.

*Intertidal mudflats, KP 1.7 – KP 8.0*10. Mudflat installation – from KP1.7 to KP8.0 (eCIP, section 2.1.3, pages 15-16):

Further clarification is required with regards to the duration of the intertidal work using Moonfish as it is currently unclear. Natural England also advises that a trial is undertaken in the mudflats given the 'flat tracks' raise concerns that the tool will not be able to get enough traction to undertake the cable burial and cause slippage ultimately relying upon the winch.

11. Cockles (eCIP intertidal, section 1.1.7-1.1.8, pages 2-3):

It is noted that the total footprint of disturbance proposed to the cockle beds is greater than previously assessed and that it is suggested that recovery will occur within 1.5 years with a re-seeding programme is planned if it is determined necessary by the third year of monitoring. Natural England highlights that the impact is out with the original assessment (DECC 2012) that concluded that there was no adverse effect to cockle beds as high density areas would be avoided during installation. Equally the bottoming out of two barges and the placement of anchors within the boundaries of the high density cockle areas were not considered and/or assessed. Please note that Centrica was only permitted to locate their barges within KP1-1.5 out of best practice to avoid impacts to cockle beds. Further information is required regarding how the 4 tonne delta flipper anchors are proposed to be deployed, duration of the landing and the feasibility of landing the barge given the occurrence of spring tides and the consented window. Would early deployment mean that the highest spring tides could be used to bring the barges in before the start of the consent window and closer to the shore avoiding the cockle area? Natural England may be agreeable to this if all work remained on the vessel until the start of the consent window as this will minimise disturbance to Annex I birds.

12. Opportunity for Early Mobilisation (eCIP, section 2.2.1, page 18): Natural England notes that DONG Energy is keen to explore the opportunity of commencing works prior to 1st May to increase confidence in completing the works within one season and to avoid disturbance to birds in September. Natural England would be open to considering the commencement of works prior to 1st May in order to avoid contingency works slipping beyond the consented window of August 31st.*Offshore proposals*13. Local Levelling of sandwaves using a dredging tool (eCIP, section 2.1.4, page 15, section 4.1.1, page 31; and eCIP offshore, section 5.3.5, page 14): Natural England notes the proposals to locally level the sand waves located between KP46.0 and KP67.0 using a dredge method undertaken by Bartholomeus Dias, equipped with a dredge pipe and fall pipe that will pump excavated material on board the vessel hopper. Natural England does not support the active removal of material from the sand bank system in particular within the Inner Dowsing, Race Bank and North Ridge (IDRBNR) Site of Community Importance (SCI) (protected for its sandbanks covered by seawater at all times) and it should also be noted that sand banks/waves outside of the IDRBNR SCI are an important sediment source for designated sites along the North Norfolk coast. As advised in our previous response on the cable lay proposal in relation to the proposed pre-cable lay approach (provided 24th February 2015: part (b) of "1429 143530 Race Bank cable lay proposals NE response 150224") the method of stockpiling the sediment temporarily before re-filling at a later date (if required) following the laying of the cables, raises concerns of the proposed temporary nature of the impact. Due to the dynamic environment of this area of seabed, Natural England highlights that the likelihood and potential for re-filling the trench would be low.

It should also be noted that dredging requires a separate marine licence and that by the nature of the method described, this approach is considered dredging rather than the temporary effects of trenching. Therefore further information is required from DONG as this approach wasn't previously assessed within the ES and a full Environmental Impact Assessment (EIA) may be required with particular consideration given to the following (in no particular order):

- Detailed characterisation study and habitat mapping including recovery rates;
- Scale of the impacts as a whole, to designated sites and interest features;
- Modelling and assessment of suspended sediments and how quickly they will settle out;
- Assessment of the worst case/realistic total footprint (i.e., dredged canal plus the area where sediment will be stockpiled);
- Modelling and assessment of worst case/ realistic permanent loss of sediment;
- Modelling and assessment of worst case/ realistic permanent loss of cockles and cobbles;
- Assessment of permanent impacts including but not exclusively scarring;
- Geological assessment of exposed substratum and potential impacts to benthic communities/habitats;
- Changes in topography;
- Assessment of impacts with and without backfill; and
- Assessment of trenches having a barrier effect to sediment movement

14. Offshore Cable Installation (eCIP, section 2.1.5, page 16-17): Natural England notes that offshore cable installation is proposed through the use of a chain cutter trenching tool and mass excavator tool to increase the chance of achieving optimal burial depth and to minimise risk of the need for remedial burial.

- a. Number of passes (eCIP section 4.1.3, page 33): It is noted that a single pass will achieve 0.6 – 1.4m trench and that subsequent passes could increase this by a further 0.6-1.2m. Will there be a limit on the number of passes undertaken.
- b. Spoil and backfilling (sediment loss) – (eCIP, section 4.3, page 35-36): discusses the need to remove sediment from the trench using the spoil removal system. Natural England advises that further clarification is provided on whether backfilling will be required and where the spoil will be deposited.
- c. From geophysical surveys is DONG Energy able to provide provisional locations where the areas of hard soil are anticipated – what surface area of sediment/size trenches are anticipated to require this methodology?

15. Offshore Contingency, section 6.2, page 49: It is noted that a mass flow excavator will be used as a contingency if burial cannot be achieved through jetting and chain cutter methods. It is anticipated within the report that the Worst Case Scenario (WCS) is that 15% of the route will require support from the mass flow excavator. Natural England highlights that if this is an anticipated WCS then it shouldn't be considered part of the contingency and should be fully assessed now.

16. Jointing: Natural England had concerns regarding the jointing operations and impacts to seals whilst the operations are underway and query what the approach is in the case of bad weather. Natural England therefore advises that all possible care is taken to avoid collisions with seals when using DP vessels and as best practice guards should be used over any ducted propellers.

General Comments

17. Contingency methods (eCIP, table 6.1, page 67-69): Natural England advises that a full contingency plan is provided rather than just a section within the main consultation document. In addition, further clarifications are required with regards to the contingency methods listed below:
 - a. Roller deployment/recovery system failure: what does this mean? Is this in the case that Sunfish is unable to deploy/recover? What will the required contingency actually consist of?
 - b. Roller tilt: The implications of impacts to the saltmarsh vegetation/compaction of soil have not been fully considered in the case of the contingency to use sandbags/pins to rectify tilt.
18. It is acknowledged that some contingency approaches are proposed, but Natural England advises that a full contingency plan is provided as a separate document to provide detailed methods and suggest using a traffic light approach to prioritise those activities that can go ahead (green), those that will need further discussions and or agreed mitigation measures (amber) and those that are an absolute no (red).
19. Recovery of Lincs saltmarsh (eCIP intertidal, section 6.2.3, page 19): The following statement is incorrect: "With the emerging evidence from Lincs that saltmarsh communities are recovering rapidly following the Lincs installation....". There are parts of the saltmarsh still yet to show signs of recovery and the larger scale full recovery is therefore still unknown. Additionally, the recovery following the Lincs installation activities isn't accurate within the "eCIP intertidal document" (section 6.4, page 23-24). It should be noted that there are areas not yet recovering in the lower saltmarsh and that large pooled areas of water have developed increasing the risk linear creek formation and an increase in flood risk.
20. Contractors: Natural England would like to suggest that Phillips 66 Ltd have undertaken works at a very high standard for the Tetney Sealine replacement project and would promote consulting with them to understand how this was achieved. .
21. Additional documents: Natural England notes that there are several documents yet to be finalised and considered as part of this consultation and look forward to receiving either an update on expected timeframes for these documents or receiving this further information in a subsequent draft. These include:
 - a. Target burial depths (Annex F) – not provided in this draft
 - b. Disposal site characterisation report– not provided in this draft
 - c. Seabed mobility studies – these were mentioned at the DONG Energy workshop on the 17th September and Natural England requested sight of these as they will be helpful in understanding how decisions in proposals have been informed.
 - d. It was noted from the DONG Energy workshop held on the 17th September that the pre-construction documents for the array are due late 2015. Natural England wishes to highlight to DONG Energy the likely pressure around timeframes given the length of time in consultation processes and recommend submission as early as possible.

Please do not hesitate to contact me should you have further queries.

Yours sincerely,

Appendix 2: MMO Consultation Response Letter

**Marine
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Organisation**

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Mr Ian Renshaw
DONG Energy
(by email only)

Our Ref: L/2012/00217/post consent

Cc Allen Risby
Cc David King

16 October 2015

Dear Ian

**Race Bank Offshore Wind Farm (OWF)
Export Cable Installation Plan Version A**

Thank you for your email received by the Marine Management Organisation (MMO) on 2 September 2015 consulting on the documents for the export cable installation proposals for the Race Bank OWF. These documents are preliminary and are not intended to discharge the relevant marine licence condition (5.2.7 of marine licence L/2012/00217)

The following documents were received:

- Race Bank Offshore Windfarm - Export Cable Installation Plan - Version A For Consultation
- Race Bank Offshore Windfarm - eCIP Offshore Environmental Report - draft for consultation
- Race Bank Offshore Windfarm - eCIP Intertidal Environmental Report - draft for consultation

The MMO has consulted specialists at Centre for Environment, Fisheries & Aquaculture Science (Cefas) and our response incorporates their comments. This response includes comments from Coastal Processes and Benthic Ecology specialists. A response from Shellfish specialist will be expected by 3 November 2015 and the MMO will provide further comment after receipt of this additional advice.

1 Intertidal

- 1.1 A summary of the engineering methodology for the export cable installation is provided, supported by three additional documents, however 'Export cable burial risk assessment (Anatec, 2015)' was not provided for review and it cannot be confirmed whether the appropriate information was extracted from this report. Please provide a copy of this report when supplying the final Export Cable installation plan.



**INVESTORS
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- 1.2 The bespoke intertidal tools proposed to be used, Sunfish and Moonfish, are newly designed equipment which, in theory, should reduce physical impacts on both the saltmarsh and mudflat. However, this equipment has not been tested in the field and therefore there is no direct evidence that it will work as intended. The MMO welcomes further discussion of the potential for an independent trial.
- 1.3 The proposed methodologies for the intertidal area (saltmarsh and mudflat) were not assessed in the Environmental Statement (ES). Specifically the use of rollers has not been considered within the original ES and the subsequent supplementary Environmental Information Report submitted in 2012 to support the variation to the intertidal cable installation. If the works are not within the original assessment there will be a need for a variation and potentially a Likely Significant Effect Test and Appropriate Assessment.
- 1.4 The MMO notes that Sunfish and Moonfish will undergo factory and 'wet' trial following fabrication, which is expected around December 2015. There is risk associated, either with the equipment not being ready for deployment by May 2016 or that they do not work as intended and that other equipment will be needed. This has not been considered fully in the contingency plan. Further information is required to detail the worst case scenario using alternative equipment should these fail and the level of impact in comparison to the original ES.

2 Sandwaves

- 2.1 As previously advised, the proposed local levelling (dredging) of sandbanks was not considered in the ES and this will require a separate marine licence.
- 2.2 No evidence has been provided on how the removal of sediment from the sandwaves will affect the surrounding community or benthic environment, just that the footprint predicted to be affected by the works is less than predicted in the ES. This must be included as part of the marine licence application.
- 2.3 More evidence is required to be confident that the proposed levelling of sandwaves will ensure successful burial of cables, and that the removal of a sand wave will remove the necessity of scour protection.

3 Conclusion

- 3.1 The proposed export cable installation plan provides presents a number of positive modifications which have developed in response to lessons learned. However further information is required to fully consider whether sandwave levelling is a robust enough way to mitigate from cable exposure and further discussion is required on the potential for a trial of the bespoke intertidal tools to provide assurances that they will work as intended.
- 3.2 Specific mitigation and monitoring for Cockle beds and Saltmarshes are provided in separate documents, these are being commented upon separately.

If you have any queries please do not hesitate to contact me.

Yours sincerely,

Appendix 3: KLJAG Consultation Response Letter

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Having received various comments from KLJAG members and having given consideration to latest data submitted our concerns remain the same. These are set out below with reference to the document dated 28 August 2015.

We wish to make it clear that these are opinions only and should not be taken as consent to the draft proposal at this time, as formal comment will be part of our function when the MMO seek our opinion.

The following comments are made in relation to the document 'Race Bank Offshore Wind Farm Preliminary Export Cable Installation Plan'

2.1.1 Sea Defence Breach

1. The seawall breach and proposed methodology may well produce a better outcome than that achieved previously, but there still remain big concerns about the proposed depth of the cable as it emerges on the Marsh frontage—i.e. a depth of 1.5 meters. We understand that the cable insertion depth on the landward side would be deeper than this depth and as this would create a downward slope towards, and beneath, the sea defences, it has the potential to create a passage for water under the sea defence wall. Therefore, as with the previous sea wall breaches, we should require the establishment of a 7-year monitoring programme using appropriate sensors.

2.1.2 Salt marsh Cable Installation 2.1.3 Mudflat Cable Installation

2. The proposed methodology to use two experimental and untried custom built cable insertion tools, namely, *Sunfish* on the marsh section, and *Moonfish* on the intertidal section, is still a major concern. Despite the Dong Energy engineering team's evaluation and assurances, we are disappointed that there is no convincing data to prove their viability in the absence of a trial demonstration.

Concern has been expressed over the intention to lay aluminium trackway on the marsh during the growing season and for it to be in place for 25 days per export cable, i.e. 50 days in total.

In addition, (referring here to 5.1) we wish to suggest (as our Geologist member has pointed out) that 'sediments' not 'soils' would be a more accurate description of the composition of the salt marsh and intertidal mudflats, on the grounds that the word 'soils' does not help public understanding of the sensitive nature of the environment within which the machinery will be used.



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2.1.4 Local Levelling of Sand waves

3. We agree that the sand wave levelling proposal does have merit as this appears to overcome some, if not all, of the known cable insertion depth difficulties that occurred during the *Centrica* seabed cable installation. However, we share Natural England's concern that there has to be some compromise between the scale of the impacts (by undertaking measures to ensure the cable is buried to an optimum depth) against the risk that if this doesn't happen, then reburial may be required.

We also have concerns regarding the current predicted **life-span** of the wind farm and its **cables** in the Wash. Our 'local knowledge' is that the state of the sea bed can and does change. This is often caused by adverse weather conditions such as happened following the December 2013 sea surge. Shipping channels close and new ones open up; the size and depth of sand waves alter. This could result in buried cables rising nearer to the surface of the sea bed and cause problems associated with anchor drag and potential marine incidents.

These things cannot be accurately forecast. Therefore, it is imperative to take this into account, especially since the predicted life span of the development is 25 years, and any form of cable protection placement may well increase the significance of any impact to what has currently been predicted.

4. Offshore Cable Installation Methodology

4. The same concerns about the two marsh/mudflats cable laying machines also applies in the marine environment. With regard to the new custom built equipment: the **cable laying Isaac Newton (pre-trenching)**, the **Bartolomeu Dias, (combined insertion tool)**, the **SCAR plough** and the **UTV1200 trencher**, all have unknown outcomes. But some of the marine information given by the marine manager at the Workshop in September 2015 when he was explaining this part of the marine activity gives us some reassurance,

Nevertheless, with reference to the technical process described in published data, our understanding is that it is possible that the entire proposal would have a better overall outcome with a deeper cable burial depth in the *marine environment*.

Additionally we feel very strongly that the three Ports in the Wash area must be entirely satisfied and in agreement with any mitigations. Furthermore, we feel that less seabed damage to some of the designated features could be achieved if this were the case.

We take note of the proposal to undertake a pre-lay grapnel run along the entire export cable route from KP8 to KP71.2. We do not believe this is within the original licence consent and expect an EIA will be required to assess any impact of this proposed activity on sensitive SAC features within the cable corridor.



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6. Contingency Planning

5. Despite various *scenario descriptors* (6.1) in this section, we are not satisfied that sufficient information is currently available in the event of a total failure of this untried methodology on the sea marsh and Intertidal foreshore sections. For example, how will the cable be inserted? What impact will this then have on the interest features which are an integral part of the designations should failure occur?
The least we would expect is an HRA for the contingency plan as these are outside the scope of the original MMO licence.

We noted from our continuing observations that some depressions were visible after the use of the trackway during geological/UXO investigations earlier in 2015.

We appreciate that the use of a track (for contingency reasons) may have to be used as a last resort, recognising these measures are better than none.

Roger Ward
KLJAG Chair

Janet Blundell
KLJAG Secretary

4th November 2015



King's Lynn and West Norfolk joint advisory group Wash and north Norfolk coast special area of conservation