NSL Rock Protection Application Supporting Document

collaborative environmental advisers

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Table of Contents

1. Introduction

1.1. Background

The North Sea Link (NSL), an electricity interconnector between Norway and the UK, will connect the electricity systems of the two countries via two high voltage subsea cables from Kvilldal in Norway to Blyth in the UK.

In accordance with the Marine and Coastal Act (2009) NSL requires a marine licence for installation of cable protection along the cable route in Scottish waters. For cable installation in English waters, including within 12nm limit, North Sea Link was awarded a Marine Licence by the Marine Management Organisation on 1st December 2014. On 10th August 2018, North Sea Link was awarded a Marine Licence by Marine Scotland that permitted cable protection activities using rock protection in Scottish waters outside of the 12nm limit.

The licence granted by Marine Scotland included indicative locations for rock protection in Scottish waters on the agreement that these locations were provisional and would most likely be subject to change once the results of the post-lay burial works were known. More recently, Marine Scotland informed NSL that any changes to these indicative locations would constitute a material change to the licence and that therefore a new licence application would be required along with a consultation period of 28 days.

It is imperative that sections of the subsea cables are not left exposed for reasons of navigational safety and also in view of risks to the installed asset from fishing or anchoring in the period between cable laying and burial and installation of rock protection. Therefore, a marine licence is required prior to mobilisation.

1.2. Scope of this document

In support of NSL's variation/new marine licence application (NSL-1.2.1-CM0-PE-0001) to Marine Scotland for Licence 06601/18/0, to request flexibility in relation to the location of the consented rock protection, this document is an addendum to the material provided to support the original marine licence (06601/18/0) for rock protection along the cable route in Scottish waters (submitted 21st December 2017).

This document provides a summary of the original Environmental Statement (ES) undertaken (NSL-1.2.3-PMO-AP-0003, National Grid NSN Link Ltd, 2014). It demonstrates that the impact of rock placement on those habitats and species which could potentially be impacted from the placement of rock along the cable route has been assessed, therefore negating the need for any additional assessments in support of NSL's variation request (as agreed with Marine Scotland on 15 April 2019). It also provides further detail on impact assessment of installation of rock protection in the MPA site.

2. Rock placement activities

The two parallel NSL subsea cables will each span 714km (114km in Scottish Waters) and two methods will be used to protect the cable from anchor or fishing interaction; post-lay burial and rock placement. Post-lay burial will be the primary protection method and rock placement will be used as a secondary protection where post-lay burial is not successful, or to protect the cables as they cross existing assets or obstructions along the seabed.

Post lay burial is the preferred method of protecting the cables from damage from 3rd parties. Rock placement is planned where the cables cross existing subsea pipelines and cables and where seabed conditions have not enabled post lay trenching to be successful. The total volume of rock placed will not exceed 118,000 tonnes as stated in the original application. NSL requires flexibility to use the volume as and where needed, as although detailed burial assessment has been undertaken, it is impossible to predict with absolute accuracy where rock protection will be required until cable burial has been attempted.

During burial and protection works carried out in English waters during 2018 it was found that in various locations the cables were left exposed in the trench created by the cable burial machine, as the trenches did not always naturally backfill post laying and burial of the cables. In such situations, the trench was backfilled with rock to ensure that the cable was not at risk from fishing or anchor interactions. Figure 2.1 below illustrates how rock was used to backfill the trenches where natural backfill was not initially achieved and where the cables were therefore left exposed. Over time the area around the rock protection will in-fill with the surrounding sediment.

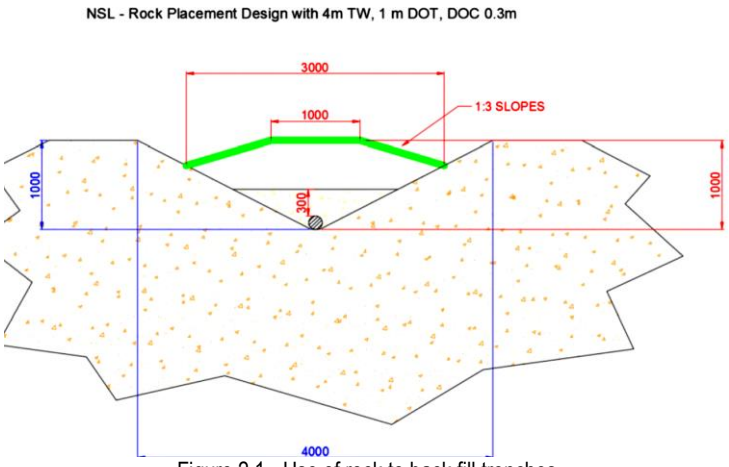

Figure 2.1 - Use of rock to back fill trenches

Based on the experience and data from cable installation in 2018, it is expected that rock berms that stand proud of the seabed (as illustrated in Figure 2.2 below) will only be used where the cable has not been lowered below the surrounding seabed level by the burial tools and is left surface laid. The risk of this occurring has been reduced as far as possible by the introduction of the more powerful T1500 jet trencher in addition to the T1200 jet trencher and the project also continues to investigate additional mechanical trenchers to supplement the iTrencher, in order to ensure that burial is secured as far as is possible.

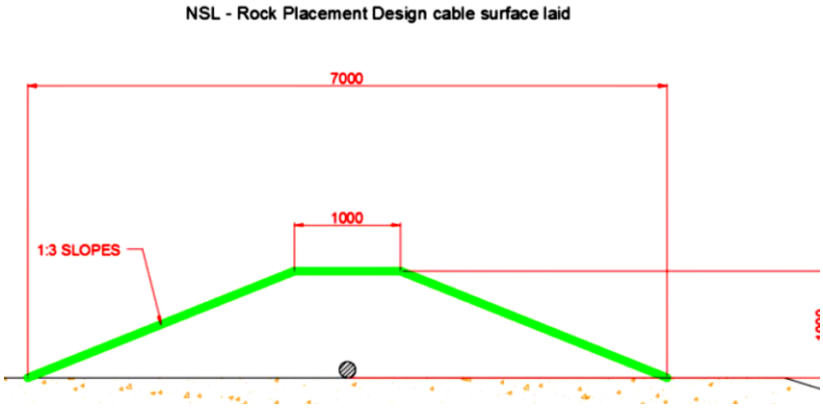

Figure 2.2 - Rock berms standing proud of the seabed

3. Summary of assessment

3.1. Introduction

The ES submitted in support of the original application (provided at Appendix 1) looked at the impacts on those habitats and species protected under European Directives or National Legislation which could be affected by the rock placement activities, including the use of rock protection on the Features of Conservation Importance ("FOCI").

To inform the original application, a Stage 1 Marine Protected Area ("MPA") assessment on East of Gannet and Montrose Fields MPA was carried out. The Stage 1 assessment considered whether the activities could potentially affect the FOCI or conservation objectives of the MPA.

An assessment was also carried out in the original application to understand whether the proposal to use rock protection along short lengths of the NSL interconnector is in accordance with the marine spatial plan. The findings of the assessment concluded that the proposals are in line with all relevant policies in the plan. As this marine plan has not changed, the assessment has not been repeated and the original findings remain valid for this document.

3.2. Conclusions of MPA assessment

Rock placement is planned to occur, in part, within the East Gannet and Montrose Fields MPA. A Stage 1 MPA assessment looking at the FOCI and the General Management Approach to achieve the conservation objectives was carried out as part of the original marine licence application. The assessment concluded that there is no significant risk of the proposed use of rock protection hindering the conservation objectives of the East Gannet and Montrose Fields MPA or its FOCI, therefore a Stage 2 assessment is not required.

This assessment however, focussed on the potential impacts on habitats and species at the indicative rock placement locations as detailed in Licence 06601/18/0 and although it is unlikely that the overall findings of the assessment are unchanged, an additional assessment has been carried out in Section 3.2.1 to confirm whether this remains the case.

3.2.1. Further MPA assessment

This additional assessment considered the impact from rock placement activities at any location along the cable route within the East Gannet and Montrose Fields MPA (Figure 3.1). The cable route does not cross or pass near to any other MPAs within Scottish waters, therefore no other MPAs have been screened into this assessment. Table 3.1 details the features and General Management Approach to achieve the conservation objectives considered for the Stage 1 MPA assessment.

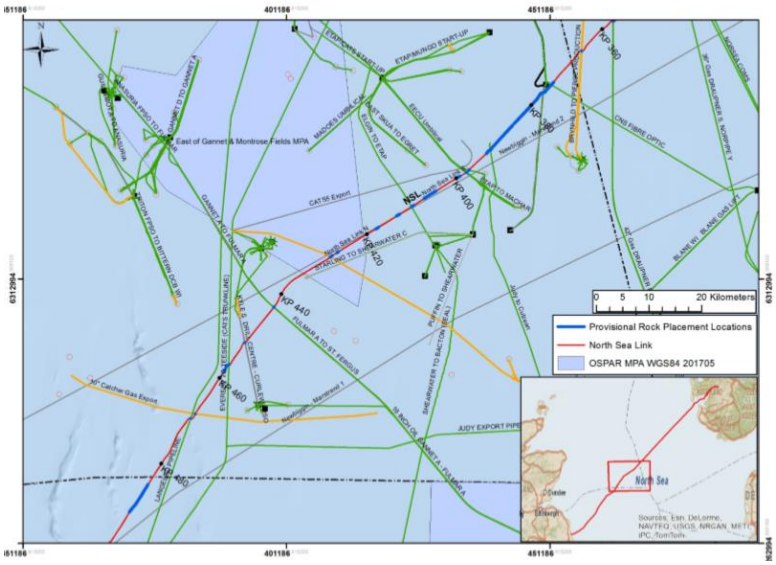

Figure 3.1 - Illustration of the cable route through the East Gannet and Montrose Fields MPA

Table 3.1 – Features and the General Management Approach to achieve conservation objectives considered for the Stage 1 MPA assessment

Feature	Conservation Objective
Offshore deep sea muds	Conserve in favourable condition
Ocean quahog aggregations (including sands and gravels as their supporting habitat) (see Figure 3.2 below)	

Figure 3.2 shows the known distribution of protected features including ocean quahog within the East of Gannet and Montrose Fields MPA.

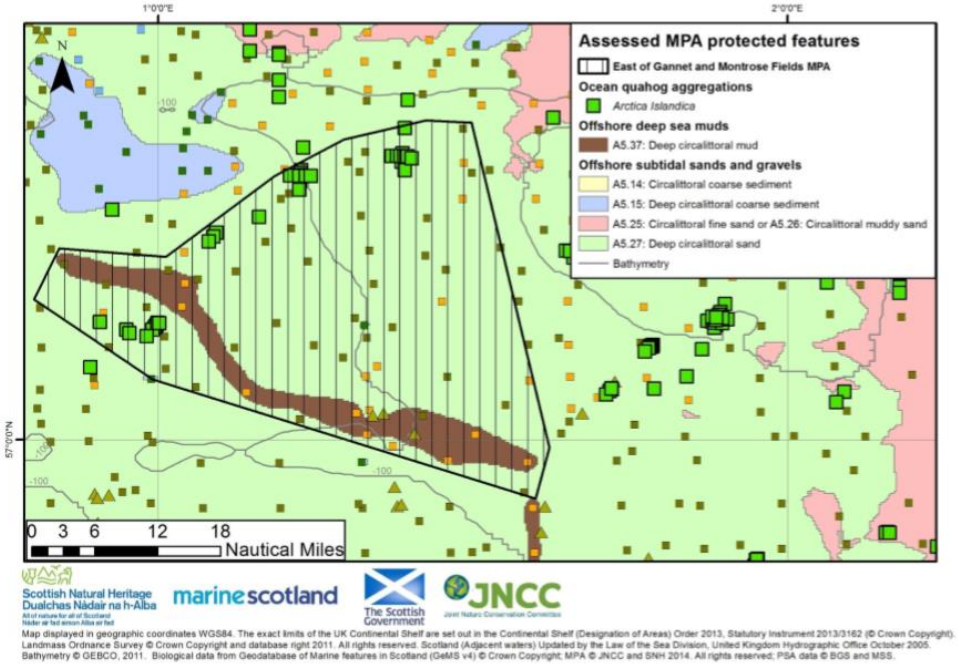

Figure 3.2 – Map of the East of Gannet and Montrose Fields MPA showing the known distribution of protected features (JNCC, 2014)

The potential aspects screened in the original application that have a direct / indirect impact remain the same for this assessment:

- Smothering and direct disturbance of ocean quahog **(Direct)**
- Changes to the seabed bathymetry, bedforms and sediments **(Direct)**
- Alteration of benthic habitat **(Direct)**
- Changes to the metocean regime **(Indirect)**

Table 3.2 details the further assessment carried out looking at potential impacts on the FOCI from the rock placement activities at any location along with the cable route within the MPA.

Table 3.2 – An assessment of the use of rock protection on the FOCI within the MPA boundary

Potential Impact	Assessment
Smothering and direct disturbance of ocean quahog	Deposition of localised rock protection as stated in section 2 has the potential to result in smothering effects and direct injury or mortality of ocean quahog, which is considered to be threatened and/or declining by the OSPAR Commission (JNCC, 2014; OSPAR, 2017). However, during the benthic survey undertaken to inform the EIA, no aggregations of this species were observed (National Grid NSN Link Ltd, 2014). The map showing known distribution of protected features of the MPA shows that this species inhabits the northern section of the MPA at a distance over 25km from the cable route (JNCC, 2014). Ocean quahog is known to be a low mobility species (JNCC, 2014; MarLIN, 2017), therefore it is unlikely that individuals will be present in the small scale, localised area proposed for rock protection use. Given that the cable route in the MPA represents 0.032% of the total protected area , and in view of the probable absence of ocean quahog in the vicinity of the likely rock protection, impacts on this species are therefore expected to be **negligible**.
Changes to the seabed bathymetry, bedforms and sediments	The addition of rock protection to the seabed within the MPA has the potential to affect its physical properties, such as a change to the seabed topography, bedforms and/or sediments. At locations where rock protection is used, the profile may be raised and hard material will be introduced to the existing substrate, and in the majority of places the placed rock will not protrude above the seabed and therefore the seabed will return back to its normal state over time. Use of hard materials in areas of softer sediments has the potential to lead to localised scour effects, although this will only occur in areas of sediment where bottom currents either already exceed the critical bedload parting velocity, or where rock placement results in an increase in current velocity to above the critical bedload parting velocity (National Grid NSN Link Ltd, 2014). <u>Sandy and gravelly sediments with the potential to support ocean quahog</u> There are no coarse gravelly sediments in the area of the cable route within the MPA, with deep circalittoral sand the only coarse substrate with the potential to be affected by the proposed cable protection (JNCC, 2014). The cable route passes through deep circalittoral mud and an area of deep circalittoral sand (See Figure 3.2 above). The maximum length of rock protection that could be laid in the coarser deep circalittoral sand habitat is ~11km, which represents a very minor fraction of the total area of deep circalittoral sand within the MPA, which is by far the most prevalent habitat within it (JNCC, 2014). Given the comparatively small area of potential impact of the whole of this prevalent habitat it is considered that any potential effects upon the bathymetry, bedforms or sediment quality of this habitat are predicted to be **negligible**. <u>Offshore deep sea muds</u> The cable route crosses an area of deep circalittoral mud within the MPA for approximately 5.5 km according to the JNCC mapping (JNCC, 2014). This represents a small part of the habitat as a whole within the MPA (JNCC, 2014). Currents along the cable route in the offshore areas are considered to be relatively low (National Grid NSN Link Ltd, 2014) and in view of the small scale and localised nature of the rock protection within the MPA, scour effects are not considered likely. Therefore, the impacts of scour are considered to be **negligible** and impacts upon bathymetry, bedforms and sediment quality of the offshore deep sea mud habitat are predicted to be **minor**.

Potential Impact	Assessment
Alteration of benthic habitat	Sandy and gravelly sediments with the potential to support ocean quahog There are no coarse gravelly sediments in the area of the cable route within the MPA, with deep circalittoral sand the only coarse substrate with the potential to be affected by the proposed cable protection (JNCC, 2014). The cable route passes through deep circalittoral mud and an area of deep circalittoral sand (See Figure 3.2 above). The maximum length of rock protection that could be laid in the coarser deep circalittoral sand habitat is ~11km, which represents a very minor fraction of the total area of deep circalittoral sand within the MPA which is by far the most prevalent habitat within it (JNCC, 2014). The reason for conservation interest of this habitat lies in its potential to support ocean quahog, however the distribution (in the northern parts of the MPA) observed (JNCC, 2014) and low mobility of this species means that the sediment that may be affected is very unlikely to currently serve as quahog habitat. Given the comparatively small area of potential impact of the whole of this prevalent habitat and the low likelihood of population by ocean quahog, it is considered that any potential effects upon the bathymetry, bedforms or sediment quality of this habitat are predicted to be **negligible**. Offshore deep sea muds The cable route crosses an area of deep circalittoral mud within the MPA for approximately 5.5 km. This represents a small part of the habitat as a whole within the MPA (JNCC, 2014). There appears to be a low level of data to allow determination as to whether this feature within the MPA has a high level of natural biological diversity, or whether it is representative of this habitat in UK waters (JNCC, 2014). Rather, designation of this feature is due to it being a coherent example of this habitat rather than fragmented (JNCC, 2014). The small footprint of the habitat change is not expected to have an impact on the overall integrity of the feature as any effects will be small scale and localised within the wider feature. Additionally, during the EIA, it was determined that this is a site of active deposition of fine sediments and that any rock protection may eventually become buried during the operational phase, ostensibly re-forming the natural habitat (National Grid NSN Link Ltd, 2014). Any initial effects may therefore prove to be temporary in addition to their localised nature. Therefore, the impacts on this habitat are considered to be **minor**.
Changes to the metocean regime	Where rock placement is used, the EIA determined that there may be very localised changes to tidal or wave-induced currents (National Grid NSN Link Ltd, 2014). However, any such local changes at the site of the rock protection were found to be immeasurable in the wider environment, and that the presence of the cable protection will cause no changes to the wider metocean regime. Therefore, no impact was predicted. This conclusion was reached based upon the total rock protection placed rather than solely the amount which may be laid within the MPA. Given the very small possible use of rock protection within the boundaries of the MPA, it is unlikely that any metocean changes within the MPA will have a significant effect on either the offshore deep sea muds or the sandy and gravelly sediments with the potential to support ocean quahog for which the site is designated. Therefore, there is **no predicted impact** to either of these habitats.

3.2.2. In-Combination Assessment

Table 3.3 details the original in-combination assessment which has been reviewed and updates have been provided as to the status of the projects, along with revised conclusions.

Table 3.3 – An assessment of the use of rock protection on the FOCI within the MPA boundary – in-combination

Plan or Project	Approx, distance from MPA	In-Combination Assessment	Conclusion	Update (April 2019)	Revised Conclusion
NSL interconnector cable programme (other offshore activities): • **Pre-Lay Survey and Route Clearance – May 2017 to July 2017** • **Pre Lay Route Clearance – March 2018 to April 2018** • **Beach works pull-in – April 2018 to May 2018** • **pUXO investigation – Q1 2018 (if necessary)**	Variable	The proposed use of rock protection will take place as part of the wider NSL project programme. All work packages will take place at variable times and locations along the cable route (of over 700km) and are short-term in duration and are typically intermittent. The deposition of rock protection will take place following cable installation within the MPA and is therefore not likely to overlap with any of the other offshore activities planned.	No significant risk	None	**No significant risk**
North Connect Interconnector	>40km	Planned to commence installation during 2020 - 2021	No significant risk	Timeframes for planned cable installation remain the same (2020 – 2021).	**No significant risk**
Eastern HVDC Subsea Link	175 km	Currently in planning. Planned to commence installation after 2021 if granted consent and located at a significant distance from NSL.	No significant risk	Remains in planning stage. Following ongoing design reviews commencement of installation will be beyond 2021.	**No significant risk**
SeaGreen Offshore Wind projects: Alpha and Bravo	196 km	Following Judicial Review since the initial consents were granted, a scoping report was submitted in July 2017 to cover key design changes to the project. Since no further consent has yet been granted with regards to these projects, it is unlikely that there will be any overlap in timescales between these projects and rock placement within the MPA. All other SeaGreen offshore wind projects (Charlie to Golf) are in the concept or early planning phase and, as such, are not considered here.	No significant risk	Amendments to the current consents are yet to be granted to cover the key design changes.	**No significant risk**

Plan or Project	Approx, distance from MPA	In-Combination Assessment	Conclusion	Update (April 2019)	Revised Conclusion
Dogger Bank Creyke Beck and Teesside A-D	209 km	Consent granted in 2015. No programme has yet been set for construction, therefore it is unlikely that there will be any overlap in timescales between rock placement and construction of these offshore wind projects.	No significant risk	Construction may commence in 2020. There may be an overlap in timescales between this project and installation of rock protection for the NSL. However, given the distance between this project and the MPA, there are unlikely to be any significant in-combination impacts.	**No significant risk**
Neart na Gaoithe	249 m	Following a legal challenge by RSPB and its recent overturning in November 2017, this project has recently been able to progress following its initial consent in 2014. It is predicted to be commissioned in 2021, however a further offshore consent is to be applied for to account for changes in technology since the project's original consent. It is therefore unlikely that there will be any overlap in timescales between this project and installation of rock protection for NSL.	No significant risk	At the end of 2018 a consent was granted for the updated design for the offshore elements of the project. It is now expected to be commissioned in 2023 and it remains unlikely that there will be any overlap in timescales between this project and installation of rock protection for the NSL. However in the event the timescales do overlap, given the distance between this project and the MPA there are unlikely to be any significant in-combination impacts.	**No significant risk**

3.3. Conclusions of environmental impact assessment

The original EIA considered a range of environmental, technical and economic impacts and concluded that the main impacts associated with the installation of the NSL cable are predicted to be a minor temporary disturbance to the seabed, with the resultant minor impacts on benthic and intertidal communities and fish species.

The assessment considered the impacts along the full length of the proposed cable corridor (and not just those at the indicative rock placement locations). Therefore, the conclusions of the original EIA assessment remain valid for the purposes of this document, thus negating the need for any additional assessments in support of NSL's variation request.

4. Conclusions

Based on the information presented in this assessment, it is concluded that the findings from the original EIA assessment remain valid. The further MPA assessment has shown that there is no significant risk of the proposed use of rock protection hindering the conservation objectives of the East of Gannet and Montrose Fields MPA or its FOCI either alone or in-combination with other projects.

5. References

JNCC (2014) Assessment against the MPA Selection Guidelines: East of Gannet & Montrose Fields Nature Conservation MPA.

JNCC (2015) Nature Conservation Marine Protected Areas. Available at: http://jncc.defra.gov.uk/page-5269 [Accessed April 2019]

MarLIN (2017) Arctica islandica. Available at: http://www.marlin.ac.uk/species/detail/1519 [Accessed April 2019]

National Grid NSN Link Ltd (2014) Norway-UK Interconnector: UK Marine Environmental Statement.

OSPAR (2017) OSPAR Commission List of Threatened and/or Declining Species and Habitats. Available at: https://www.ospar.org/work-areas/bdc/species-habitats/list-of-threatened-declining-species-habitats [Accessed April 2019].

6. Appendices

6.1. Appendix 1

Marine Scotland Licence Application Supporting Document: NSL Rock Protection (NSL Document No. NSL-1.2.3-PMO-AP-0003)

Document can be accessed here:

Marine Scotland Licence Application

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