



# Hornsea Project Four

## Further Consideration of Lighting Requirements

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**Revision Summary**

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## Acronyms

Term	Definition
OSPAR	Oil Spill Prevention, Administration and Response
MGN	Marine Guidance Note

## 1 Background

1.1.1.1 Natural England (NE) made the following statement as part of their Relevant Representation (NE [RR RR-029-APDX:B-28](#)):

*“NE do not agree that that it can be concluded that meeting the minimum regulatory requirement for offshore lighting is the same as minimising impacts on ornithology receptors. We consider it would be appropriate to consider screening of key species that could be sensitive to impacts of lighting to provide context for this assessment.*

*Further, mitigation measures outlined in the OSPAR guidance are not solely restricted to minimising the emission of light, but also include measures such as changing the spectrum of light emitted, shielding light, and use of intermittent light including switching lighting off at particular times. We would welcome these elements also being considered in Hornsea 4’s designs”.*

1.1.1.2 In response to Natural England’s comments, it is not possible to do less than the minimum lighting mandated by the relevant regulatory requirements. The Applicant has therefore considered the respective measures outlined in the OSPAR guidance requested by Natural England in this document (see [Table 1](#)).

## 2 Further consideration of lighting requirements

2.1.1.1 As set out at section 5.11.2.164 of [A2.5 Environmental Statement Volume A2 Chapter 5 Offshore and Intertidal Ornithology \(APP-017\)](#), the Applicant is committed to meet the minimum necessary regulatory requirements, as set out in the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) Recommendation O117 on ‘The Marking of Offshore Wind Farms’ for navigation lighting and by the Civil Aviation Authority in the Air Navigation Orders (CAP 393 and guidance in CAP 764).

2.1.1.2 Windfarm developers must comply with specific industry standards and guidelines for obstruction and navigational lighting. These are currently as follows:

Offshore Substations:

- DNV-ST-0145 Offshore Substations: the standards for the design of offshore substations associated with offshore renewable energy projects
- IALA R0139 (O-139) The Marking of Man-made Offshore Structures
- IALA Guideline No. 1038, Ambient light levels at which aids to navigation should switch on and off
- IALA Guideline No. 1116, Selection of Rhythmic Characters and Synchronization of Lights for Aids to Navigation

Wind turbines

- International Association of Lighthouse Authorities (IALA) O-139 – The Marking of Man-Made Offshore Structures (December 2013);
- MGN 654 Safety of navigation: OREIs - Guidance on UK navigational practice, safety and emergency response

- MCA MGN 372 – Offshore Renewable Energy Installations (OREIs) – Guidance to Mariners Operating in the Vicinity of UK OREIs.

2.1.1.3 The Applicant has reviewed the points raised by Natural England and **Table 1** below sets out how each has been considered from a regulatory and technical perspective.

**Table 1: The Applicants consideration of Natural England’s suggested lighting mitigation**

Potential Mitigation	Technical Considerations
Minimising light emissions	Light emission might be minimized to lower intensity to avoid glare, or lights may be switched on or intensity increased during periods of poor visibility, however this is strictly limited by IALA Guideline No.1038, IALA Recommendation O-139, MGN 654, MGN 372
Change light spectrum	MGN 372 prescribes light specifications and does not allow changes outside of these standards.
Light shielding	There are no industry standards or guidelines allowing light shielding
Intermittent lighting	Only as defined in IALA Guideline No. 1116, MGN 372
Switching light off at particular times	Switching off will be followed as required by the following relevant guidance: IALA Guideline No. 1038, IUALA Recommendation)-139, IALA Guideline No. 116, MGN 372

## 2.2 Summary

2.2.1.1 In summary, due to the requirement to comply with a range of industry guidance and specific standards on lighting and navigation requirements, the Applicant has limited flexibility with regards to further consideration on the respective measures outlined in the OSPAR guidance requested by Natural England.

2.2.1.2 It is not possible for the Applicant to do less than the minimum lighting mandated by the relevant regulatory requirements.

## 3 References

DNV-ST-0145 Offshore Substations: the standards for the design of offshore substations associated with offshore renewable energy projects

IALA R0139 (O-139) The Marking of Man-made Offshore Structures

IALA Guideline No. 1038, Ambient light levels at which aids to navigation should switch on and off

IALA Guideline No. 1116, Selection of Rhythmic Characters and Synchronization of Lights for Aids to Navigation

International Association of Lighthouse Authorities (IALA) O-139 – The Marking of Man-Made Offshore Structures (December 2013);

MCA Marine Guidance Note (MGN) 654 – Safety of navigation: Offshore Renewable Energy Installations (OREIs) – Guidance on UK Navigational Practice, Safety and Emergency Response (April 2021)

MCA MGN 372 – Offshore Renewable Energy Installations (OREIs) – Guidance to Mariners Operating in the Vicinity of UK OREIs.