

Hornsea Project Three
Offshore Wind Farm



Hornsea Project Three Offshore Wind Farm

Environmental Statement:
Volume 6, Annex 4.7 – Effects of the Offshore HVAC Booster Station
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Hornsea 3
Offshore Wind Farm

Orsted

Environmental Impact Assessment

Environmental Statement

Volume 6

Annex 4.7 - Effects of the Offshore HVAC Booster Station

Liability

This report has been prepared by LDA Design, with all reasonable skill, care and diligence within the terms of their contracts with Orsted.

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Front cover picture: Kite surfer near offshore wind farm © Orsted Hornsea Project Three (UK) Ltd., 2018.

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1. Introduction

1.1.1.1 Given the distance of the proposed offshore HVAC booster station search area from shore and the limited extent to which it would be visible, the landscape and visual effects from an offshore HVAC booster station on land-based receptors would be limited. This annex presents the landscape and visual effects arising from this element of Hornsea Three, providing commentary supported by visualisations from two locations, illustrated on Figure 1.1 and presented in Appendix 1: Offshore HVAC Booster Station Visualisations. This approach was consulted on and agreed with Norfolk County Council (NCC) and the Norfolk Coast Partnership (NCP) as noted in Table 4.4 of volume 3, chapter 4: Landscape and Visual Resources. North Norfolk County Council (NNDC) was also consulted but at the time of finalisation of this report had not responded.

1.2 Viewpoint Selection and Visualisations

1.2.1.1 Viewpoint locations are illustrated on Figure 1. Viewpoint OSBSA has been selected because it lies on a public right of way within the Norfolk Coast Area of Outstanding Natural Beauty (AONB), lies on an area of land at a relatively high elevation compared with other land on this section of coast, allows panoramic views offshore, and is within an area where the coast lies close to the offshore HVAC booster station search area. Viewpoint OSBSB is located within a well visited area of open access land within the AONB, slightly further inland and also in an elevated location offering panoramic views offshore. These two locations have been selected to illustrate the maximum potential visibility and effects for land based receptors.

1.2.1.2 Wireframe visualisations have been prepared in conformity with Landscape Institute Advice Note 01/11 Photography and Photomontage in Landscape and Visual Impact Assessment (March 2011), Landscape Institute Guidance Note 02/17 Visual Representation of Development Proposals (March 2017), and Scottish Natural Heritage Visual Representation of Wind Farms Guidance (2017) and take into account the curvature of the earth. A detailed description of the methodology for producing visualisations is included in volume 6, annex 4.1: Landscape and Visual Impact Assessment Methodology, appendix A.

1.2.1.3 In line with the onshore elements of Hornsea Three, the wirelines show the outline of the maximum design scenario (the potential development envelope) of an offshore HVAC booster station at the mostly southerly location within the search area, and closest point to the shore. This is defined in volume 1, chapter 3: Project Description, Table 3.40, and is as follows:

- Topside – main structure length and width 90 m;
- Topside – ancillary structure length and width 100 m;
- Topside - height (excluding helideck or lightning protection) Lowest Astronomical Tide (LAT) 70 m; and

- Height of lightning protection above topside (LAT) 90 m.

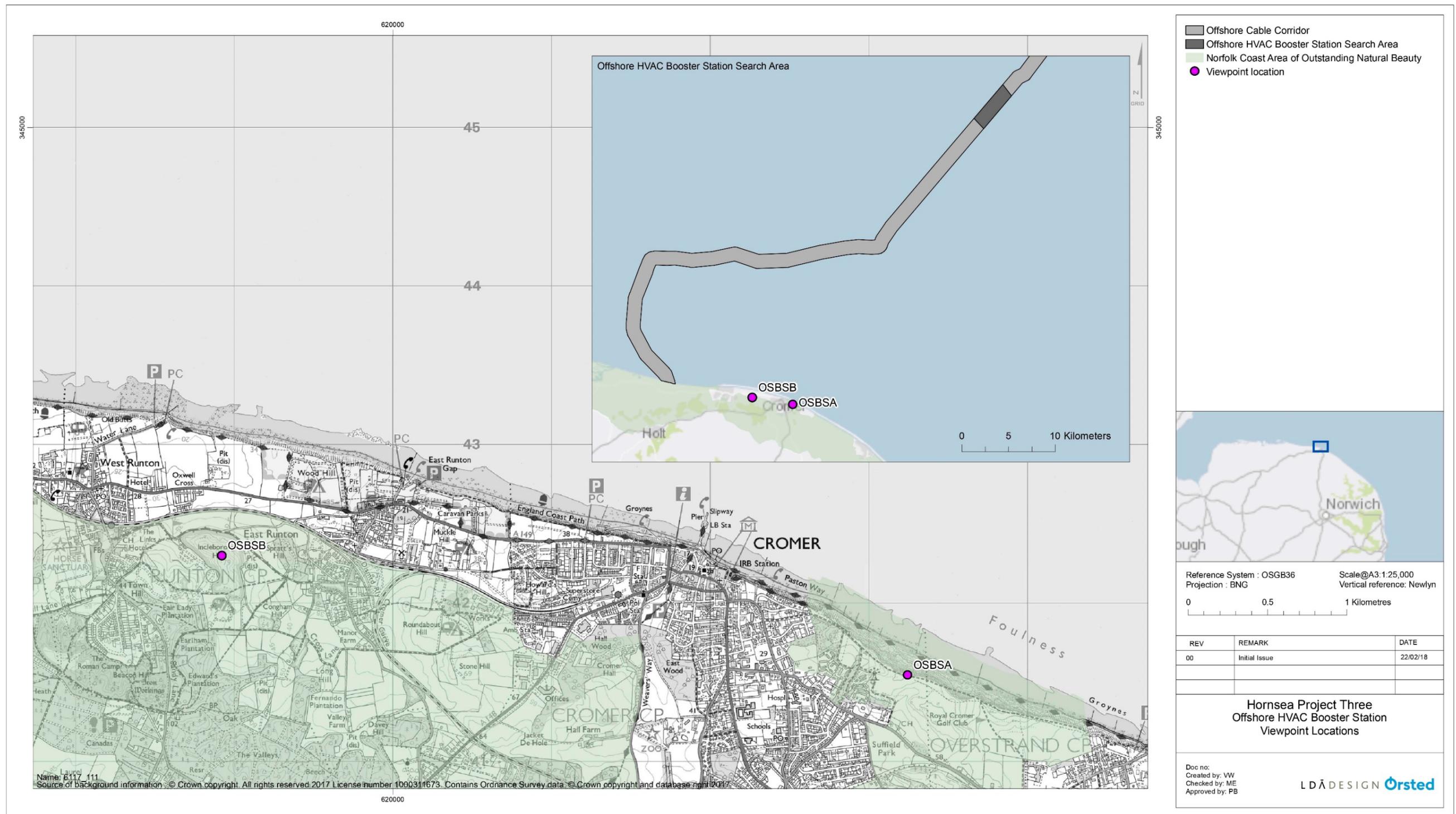


Figure 1.1: Offshore HVAC booster station viewpoint locations.

2. Landscape and Visual Effects

2.1.1.1 Effects of an offshore HVAC booster station have been assessed in line with the methodology set out in volume 6, annex 4.1: Landscape and Visual Impact Assessment Methodology. As illustrated on the visualisations for viewpoints OSBSA and OSBSB in appendix 1, the offshore HVAC booster station would be seen as a very small feature on the horizon in conjunction with other, existing offshore wind farm infrastructure, and shipping and other vessels. These views would only be possible on very clear days with the offshore HVAC booster station not visible at other times due to atmospheric conditions reducing visibility. Given ideal viewing conditions at these two elevated locations with panoramic coastal views the scale of visual effect resulting from the offshore HVAC booster station would be no greater than negligible.

2.2 Landscape Effects

2.2.1.1 Views of the offshore HVAC booster station from any coastal landscape character area would generally be of limited spatial extent, permanent duration and reversible and, as noted at paragraph 2.1.1.1, the scale of effects at the viewpoints and across the coastal region as a whole, would be of no greater than negligible scale. Negligible scale effects on views, which is only one aspect of landscape character, would result in scale and magnitude of effects on landscape character of **no change**.

2.2.1.2 Overall, even for very high sensitivity landscape receptors, effects would be of **negligible** significance which is not significant in EIA terms.

2.3 Visual Effects

2.3.1.1 In the case of visual receptors, even those of very high sensitivity (such as users of the Norfolk Coast Path as it passes through the Norfolk Coast AONB or visitors to specifically promoted views within the AONB) or high sensitivity that would have open views of the offshore HVAC booster station, they would not experience any notable effects. At these locations, assuming effects were of wide extent and permanent duration, the magnitude of effect would be, at most, negligible and overall the effect would be, at most, of **minor** significance which is not significant in EIA terms. Effects on medium sensitivity visual receptors or lower would be of **negligible** significance

2.4 Effects on the Qualities of Natural Beauty of the Norfolk Coast AONB

2.4.1.1 The Qualities of Natural Beauty of the AONB are summarised in volume 6, annex 4.4: Qualities of Natural Beauty the Norfolk Coast AONB. The offshore HVAC booster station has potential to affect of the following Qualities of Natural Beauty which are relevant to this landscape and visual resources assessment:

- Strong and distinctive links between land and sea.

- Diversity and integrity of landscape, seascape and settlement character.
- Sense of remoteness, tranquillity and wildness.

2.4.1.2 Given the negligible effects on landscape character and potential minor effects on very high and high sensitivity visual receptors with elevated open views of the offshore HVAC booster station, as described in sections 2.2 and 2.3, it is considered that effects on the Qualities of Natural Beauty of the AONB, listed above, would be negligible.

Appendix 1: Offshore HVAC Booster Station Visualisations



Existing view



Proposed wireline

— Lightning protection / ancillary structure modelled at 90m high above LAT
— Main structure modelled at 70m high above LAT

Ref: 6117_OSBS_VP_A

<p>LD̂ DESIGN </p>	<p>Hornsea Project Three</p>	<p>Distance to Offshore HVAC booster station: 36.0km OS reference: 623248, 341546</p>	<p>Bearing to Offshore HVAC booster station: 35° Viewpoint height: 74m AOD</p>	<p>Horizontal field of view: Approx. 75° Viewing distance: 300mm @ A3</p>	<p>The three dimensional model of Hornsea Three is indicative and is not based on an accurate design, but shows the maximum design scenario. In reality development is likely to occupy a smaller area which will be determined at detailed design stage.</p>	<p>Offshore HVAC booster station wireline: Viewpoint OSBSA - Royal Cromer Golf Club</p>
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Existing view



Proposed wireline

— Lightning protection / ancillary structure modelled at 90m high above LAT
 — Main structure modelled at 70m high above LAT

Ref: 6117_OSBS_VP_B

<p>LDĀ DESIGN </p>	<p>Hornsea Project Three</p>	<p>Distance to Offshore HVAC booster station: 38.0km OS reference: 618922, 342299</p>	<p>Bearing to Offshore HVAC booster station: 41° Viewpoint height: 76m AOD</p>	<p>Horizontal field of view: Approx. 75° Viewing distance: 300mm @ A3</p>	<p>The three dimensional model of Hornsea Three is indicative and is not based on an accurate design, but shows the maximum design scenario. In reality development is likely to occupy a smaller area which will be determined at detailed design stage.</p>	<p>Offshore HVAC booster station wireline: Viewpoint OSBSB - Inleborough Hill</p>
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