

# Norfolk Vanguard Offshore Wind Farm

# Appendix 25.3

## Operational Phase Assessment

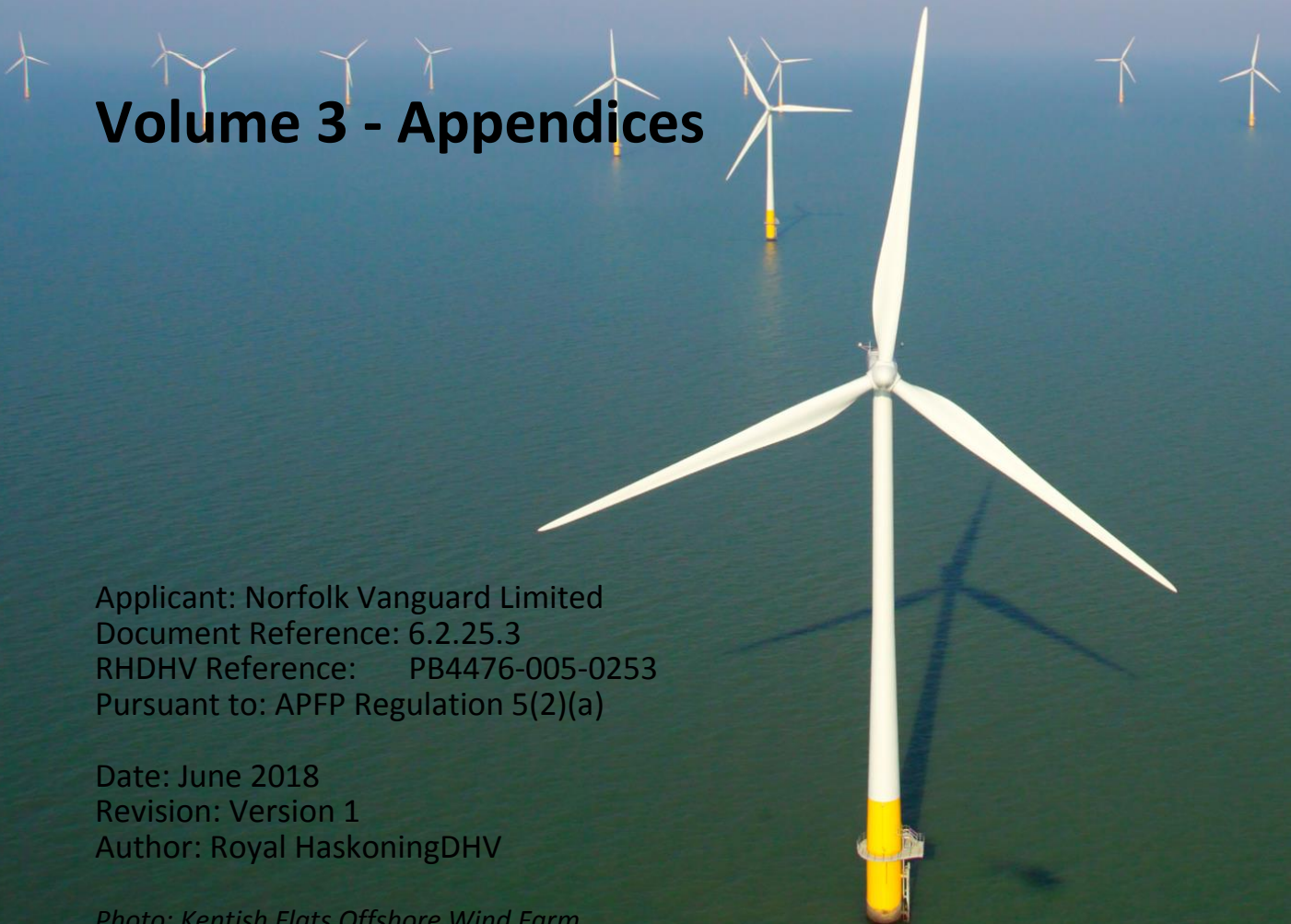
## Environmental Statement

### Volume 3 - Appendices

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*Photo: Kentish Flats Offshore Wind Farm*



# Environmental Impact Assessment Environmental Statement

Document Reference: PB4476-005-0253

June 2018

For and on behalf of Norfolk Vanguard Ltd

Approved by: Ruari Lean, Rebecca Sherwood

Signed: -



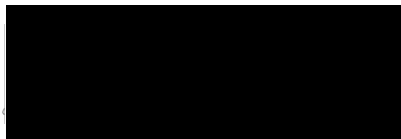
Date: 8<sup>th</sup> June 2018

For and on behalf of Royal HaskoningDHV

Drafted by: Dean Curtis

Approved by: Jon Allen

Signed:



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## Terminology

Onshore project substation	A compound containing electrical equipment to enable connection to the National Grid. The substation will convert the exported power from HVDC to HVAC, to 400kV (grid voltage). This also contains equipment to help maintain stable grid voltage.
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## 25 OPERATIONAL PHASE ASSESSMENT

### 25.1 Introduction

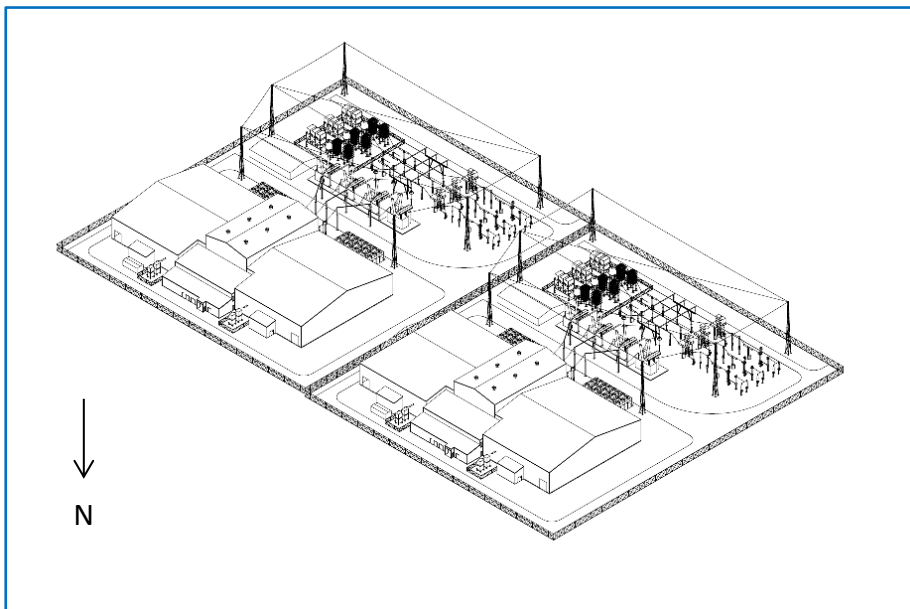
1. This appendix to Chapter 25 Noise and Vibration details the results of the operational noise impact assessment modelling for Norfolk Vanguard.
2. Chapter 25 Noise and Vibration details the methodology, assessment criteria and assumptions relevant to the assessment of construction phase noise impacts.

### 25.2 Operational Phase Noise Modelling

3. The operational phase was modelled using SoundPLAN noise modelling software. This package directly implements the calculation methods outlined in ISO9613-2 (International Organization for Standardization, 1996) and other nationally and internationally recognised acoustic standards.

### 25.3 Plates

4. This section provides images referenced in Chapter 25 Noise and Vibration, covering the indicative onshore project substation, predicted unmitigated operational noise for Norfolk Vanguard and, predicted mitigated operational noise for Norfolk Vanguard. Plate 25.1 to Plate 25.3 show some of the inputs and outputs from the modelling software as part of the assessment undertaken. The onshore project substation equipment shown in Plate 25.1 was modelled with the converter hall buildings toward the northern boundary, and external plant to the south.



**Plate 25.1 Indicative onshore project substation layout – HVDC**

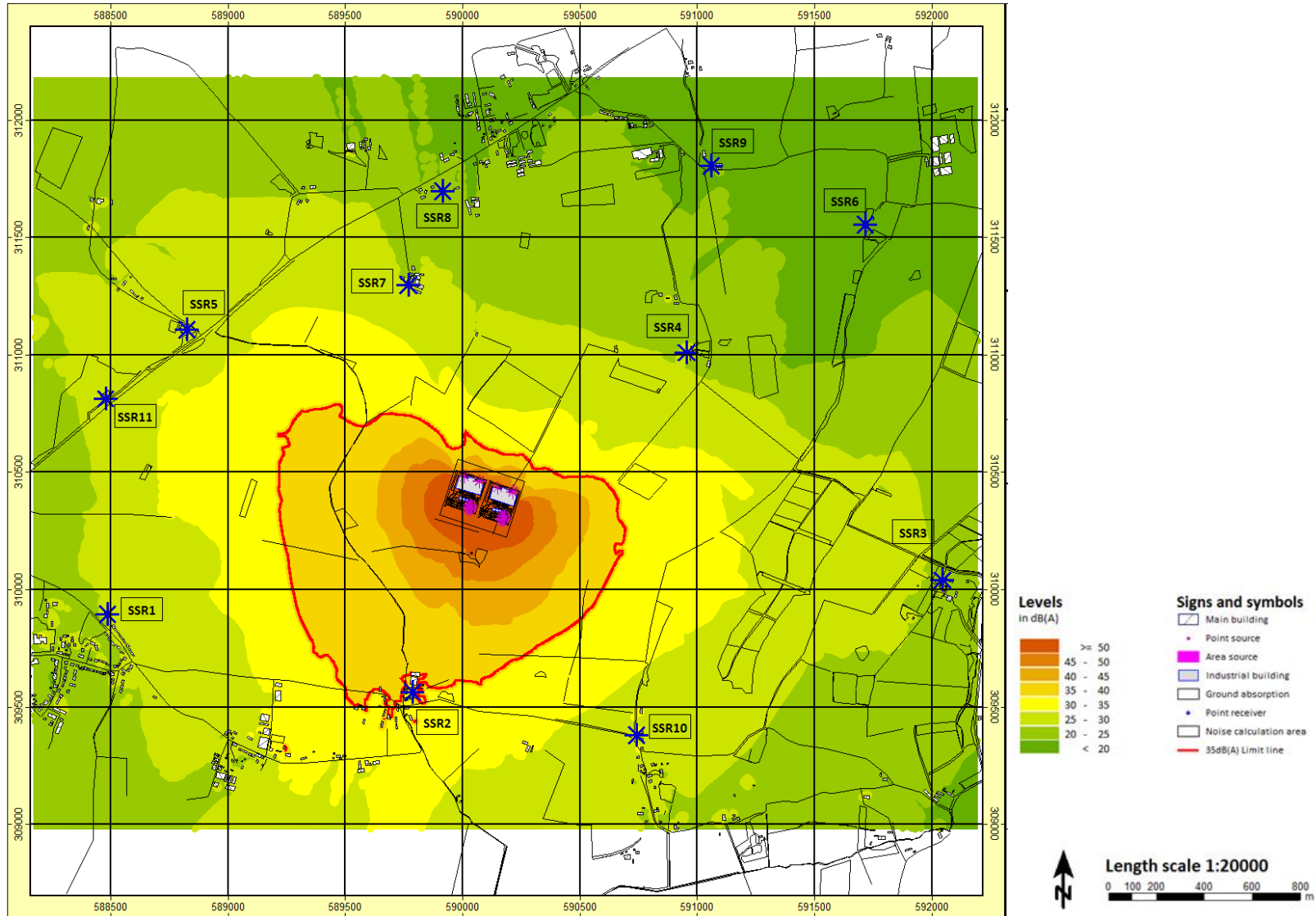


Plate 25.2 Norfolk Vanguard onshore project substation without mitigation (calculation in 1.5m above ground)



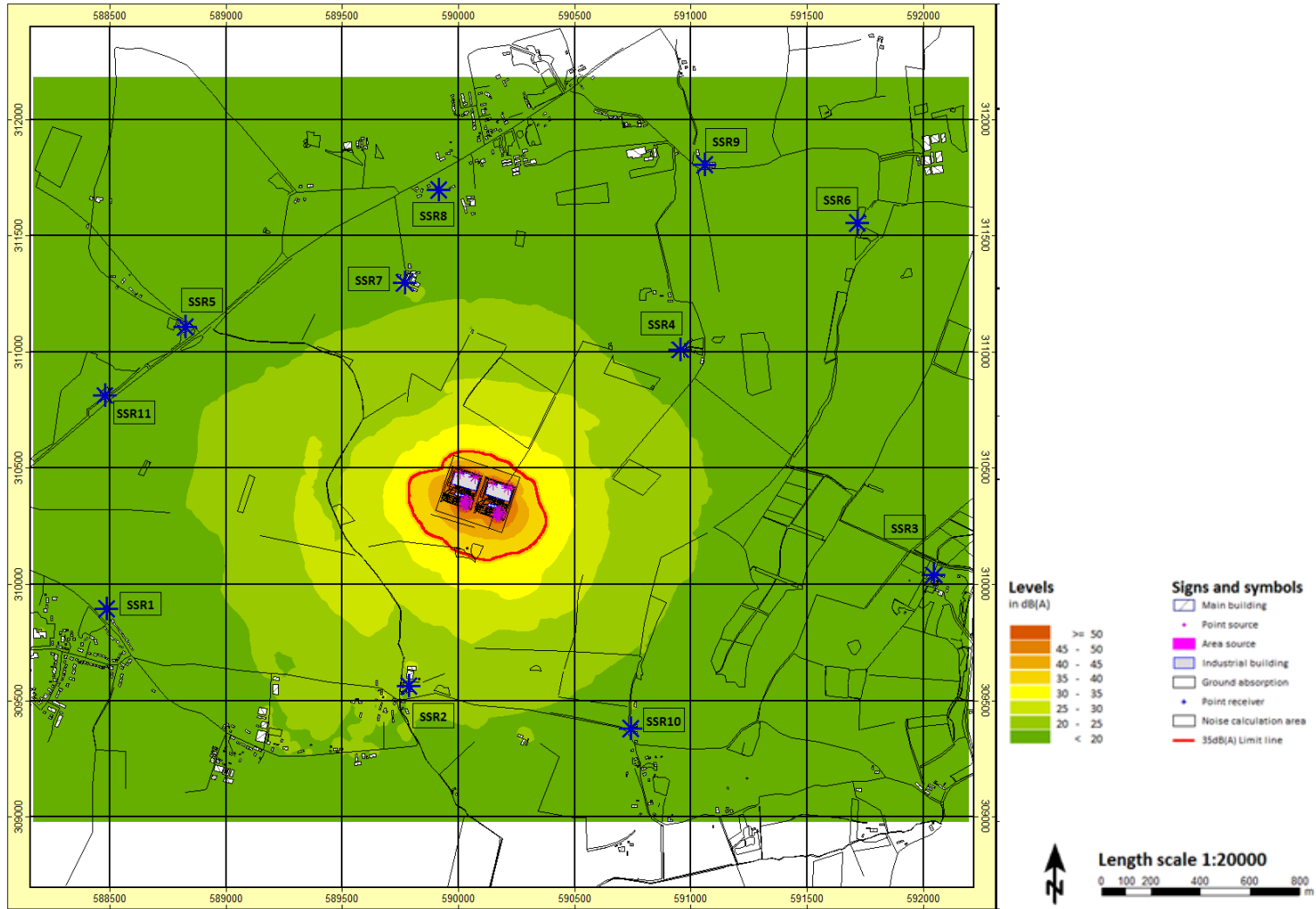


Plate 25.3 Norfolk Vanguard onshore project substation with mitigation (calculation in 1.5m above ground)

## 25.4 References

International Organization for Standardization (1996). ISO9613-2:1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation. ISO, Switzerland.