

Overview: Types of underwater noise mitigation measures implemented

GERMANY

ASCOBANS NSSG + JG JOINT SESSION, 13.04.2024, ZANDVOORT



Mandatory Noise Limits for OWP

Offshore Windparks & Converter stations

- Dual noise limit criteria: 160 dB re 1 μ Pa (SEL05) and 190 dB (L_{peak}) in 750 m distance from pile
- Installation time limit: 180 min per monopile/jacket installation
- 30 minutes deterrence - effective until 750m radius

Noise mitigation concept (Federal Ministry for the Environment, 2013)

- A noise value of 140 dB (radius 8 km from pile) may occur
 - Simultaneously on max 10% of the area of the German EEZ
 - Simultaneously on max 10% of the area of a Natura2000-area
 - Simultaneously on max 1% of the area of the main concentration area of the harbour porpoise (Sylt Outer Reef) during May – August
 - Simultaneously on max 1% of the area of the Natura2000-areas Sylt Outer Reef and Doggerbank during May – August

Noise Abatement during OWP constructions

FAR FROM MONOPILE

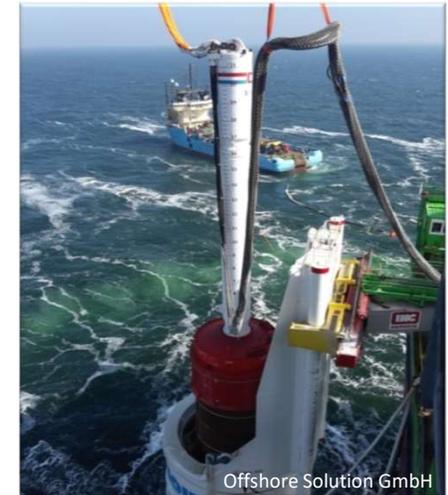


Double Big Bubble Curtain
(reduces high frequencies)



CLOSE TO MONOPILE

HSD-Net (Hydro Sound Damper)
(reduces low frequencies)



NMS (Noise Mitigation Screen)
(reduces high and partially low frequencies)

Efficiency control and monitoring



➤ Noise Monitoring before, during and after construction activities

- Before: underwater noise & porpoise presence in vicinity of construction site
- During: underwater noise/porpoise presence at 750m and 1500m, immediate surroundings, nearest Natura2000 area → if noise limits are exceeded, additional measures apply
- After: noise monitoring/porpoise presence in OWP for several years



Guidelines for unexploded ordnances

- Mitigation measures are considered for each planned detonation including:
 - separation of the fuse box from the main charge in certain types of air mines
 - translocation of UXO and detonation in shallow waters or on a sandbank (in air)
 - use of pingers/seal scarers, use of bubble curtains.
- Lower Saxony (incl. Wadden Sea):
 - binding guideline for the handling of Unexploded Ordnance (UXO),
 - if possible, UXOs are defused.
 - If not possible: UXOs are towed to tidal areas, where ignition above water level is possible during low tide,
 - If removal is not possible, ignition is carried out on site using double bubble curtain and seal scarer.
- In process:
 - **Guidelines** for the legal and technical nature conservation requirements for the clearance of explosive ordnance in the German North Sea and Baltic Sea.