Disturbance, capture, and killing of harbour porpoises and other species is prohibited by European council directive 92/43/EEC. Therefore the affected animals have to be deterred from offshore construction sites before pile driving.

The effectiveness of the deterrence has to be validated and reported to legal authorities.

REAL-TIME MONITORING

BioConsult SH uses the Seiche ‘Wireless Detection System’ (WDS) to verify the successful deterrence of harbour porpoises during the pile driving process.

Several WDS buoys record harbour porpoise (and toothed whale) vocalisations. Detection range of a single WDS buoy is about 200m and porpoise presence of 4-5 min within this range is required for a 50% detection probability. The data are transmitted in real-time to a vessel or onshore base where they are analysed.

If marine mammals enter the construction site, additional deterrence can be initiated without interrupting the piling process.

EXPERIENCE AND RELIABILITY

BioConsult SH successfully used WDS during the pile driving process of 40 jacket structures and one offshore sub-station. Deployment and operation were integrated into the workflow without causing any delays or interruptions.

Marine mammals were reliably detected by the system and could be driven off by additional deterrence cycles. Thus negative impacts on marine mammals were avoided.