

A photograph of an offshore wind farm in the ocean. Several white wind turbines with yellow bases are visible, spaced out across the blue water. A small red boat is moving across the water in the middle ground, leaving a white wake. The sky is a clear, deep blue.

Environmental Impact and Spatial Planning

Standardised vs Adaptive approach to environmental monitoring for German and UK offshore wind farm projects

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15th November 2018

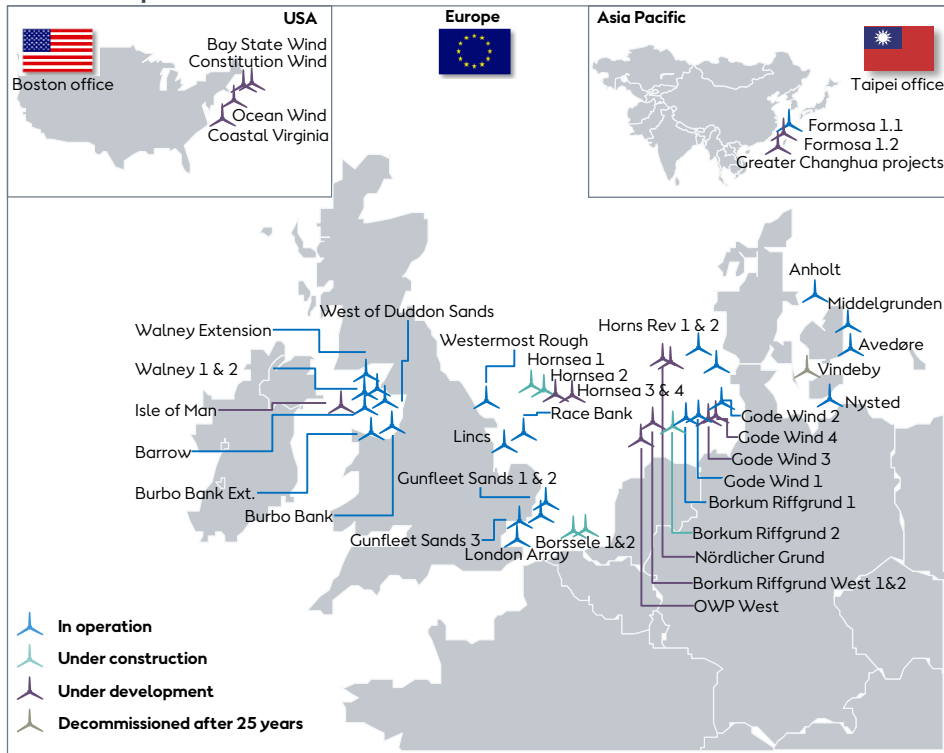
Overview

1. Introduction to Ørsted projects
2. German approach to monitoring
3. UK approach to monitoring
4. Summary and conclusions



Ørsted Wind Power overview

Global footprint



Unparalleled experience and track record

1991 ➔ 2018

25+ years of experience and track record in the offshore wind power sector

24 offshore wind farms in operation

4 offshore wind farms under construction

- 4.4 GW Constructed capacity
- ~ 2,300 Dedicated employees
- 4.5 GW under construction
- 8.8 million people with clean electricity
- 1,000+ turbines World's leading operator
- 19 Partnerships

Germany

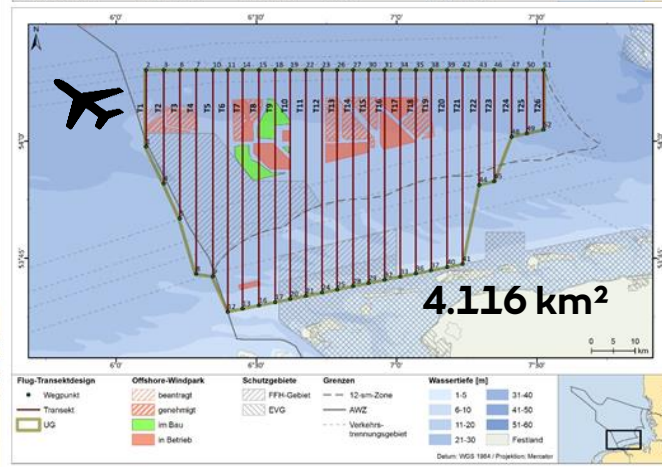
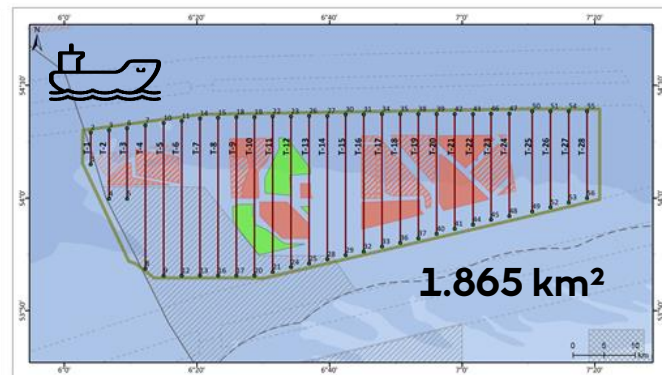
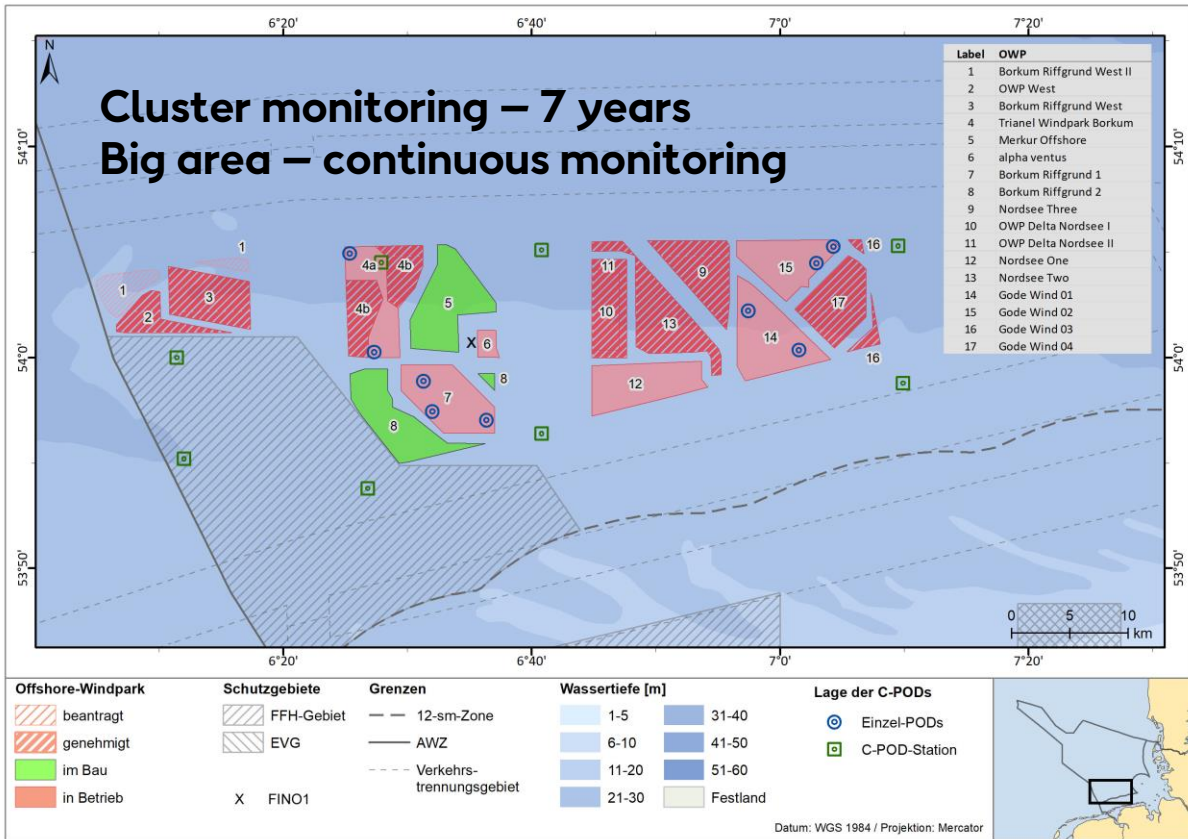
Framework conditions

“Bundesamt für Seeschifffahrt und hydrographie (BSH)” set the frame for environmental investigations.

StUK (Standard Untersuchungskonzept) - thematic and technical minimum requirements for monitoring

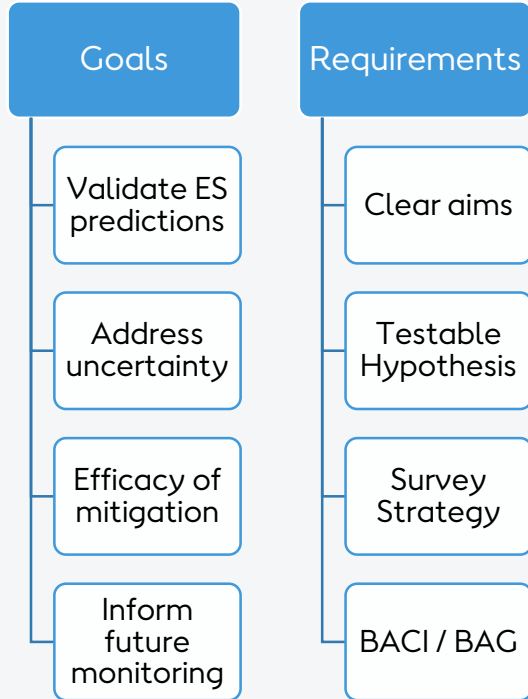
Based on experience gained with previous versions and surveys conducted in the research project StUKplus.





Post Construction Monitoring Requirements UK

Traditional Approach – Site Specific Monitoring



Strategic monitoring

Zonal Approach

- Flamborough and Filey Coast Seabird Monitoring Group FFSMG

Sector Approach

- Offshore Wind Strategic Monitoring Forum (OWSMRF)

Flamborough and Filey Coast Seabird Monitoring Group

Tagging Studies

2017 / 2018

tagging breeding kittiwakes

Collision risk models

Foraging ranges

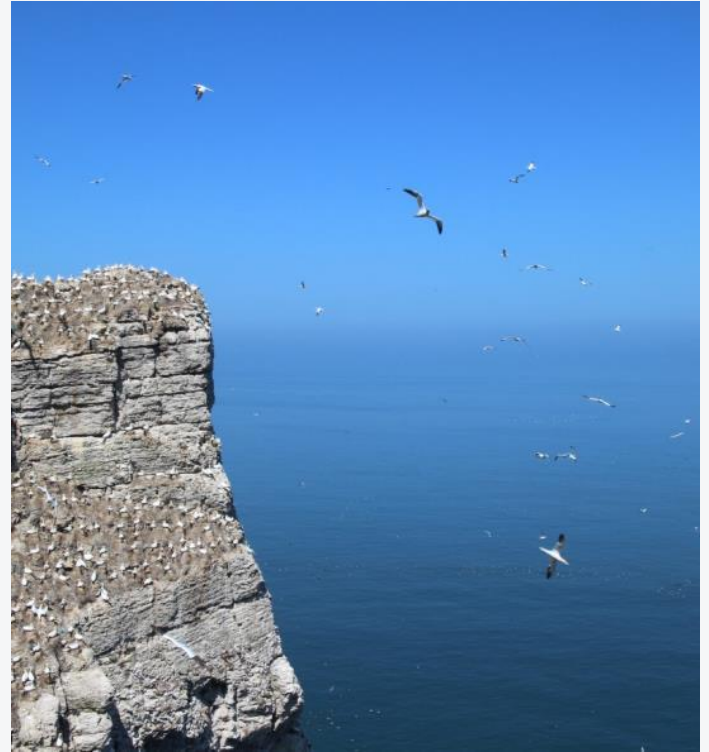
Drone Surveys

2017

Colony counts

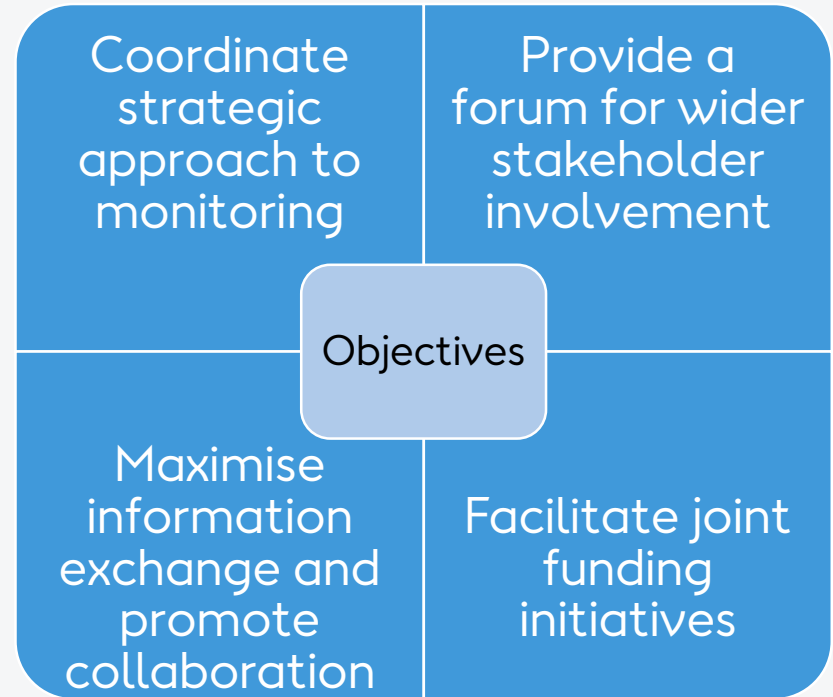
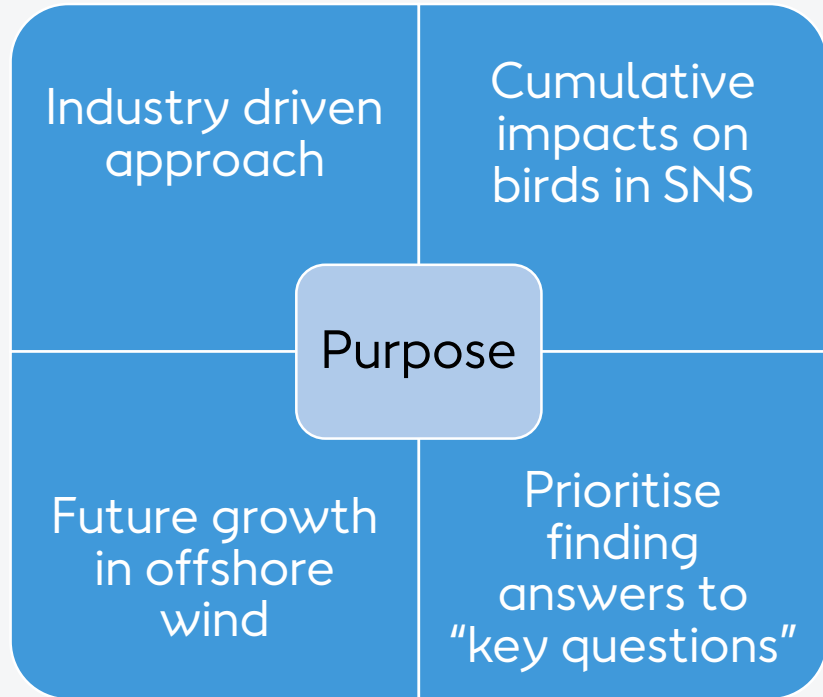
Survey of access restricted areas

Species and abundance trends



Offshore Wind Strategic Monitoring Research Forum

A forum to facilitate strategic research & monitoring



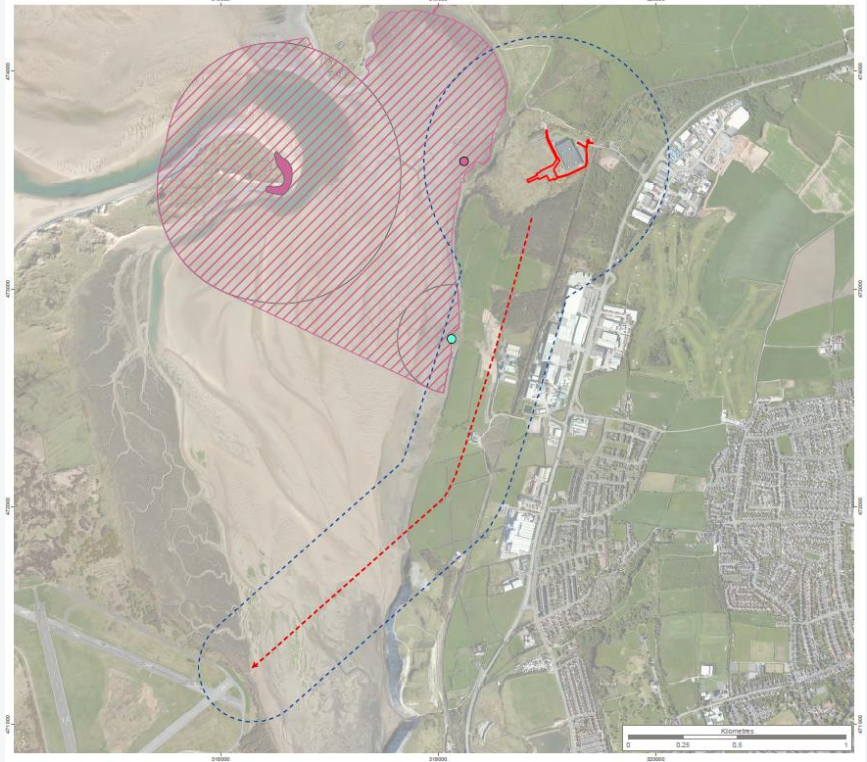
Case Study: Walney Extension heliport

Background

Daily access to windfarm required

Morecambe Bay and Duddon Estuary SPA immediately adjacent

Habitats Regulations Assessment undertaken.

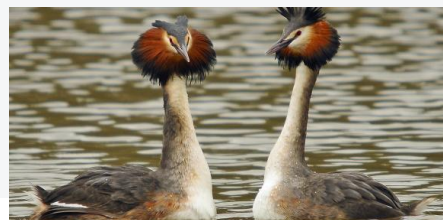


Case Study: Walney Extension heliport

Issue

Risk of disturbance to birds in the SPA.

Natural England concerns around uncertainty in the HRA.



Case Study: Walney Extension heliport

Solution

More intensive monitoring at start

Red and Amber Flags

Annual review of mitigation and monitoring plan

Amendments to plan

Monthly peak count recorded at less than 50% of baseline monthly peak count

Amber flags in three consecutive months, or five amber flags in one year

Summary and Conclusions



Germany

- Certainty
- Ability to plan
- Consistency of data
- Efficiency through coordination



UK

- Flexible
- Adaptable
- Efficiency through streamlining

Hybrid

- Adaptable
- Consistent and comparable datasets
- Less focus on site specific survey
- More Strategic focus

A large-scale photograph of an offshore wind farm. The image shows a vast expanse of blue ocean under a clear sky. In the foreground, a large white wind turbine is partially visible, with its nacelle and parts of its blades. The blades are white with red markings. In the background, many other similar wind turbines are scattered across the horizon, creating a sense of depth. The overall scene is bright and clear.

Thankyou for listening

Questions?