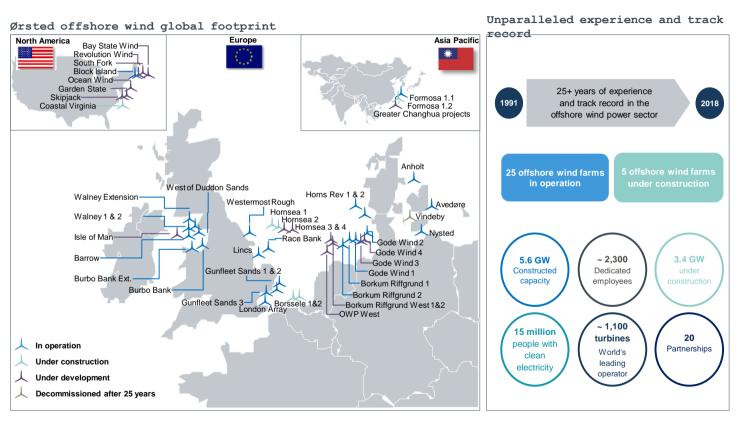


Ørsted Offshore overview





Introduction



- Significant progress has been made in the last 15 years in our understanding of the impacts of offshore wind on marine receptors including:
 - ➤ The understanding of ornithological related collision risk, bird flight heights and population modelling
 - Improvements in our understanding of underwater noise propagation and the impacts on marine mammal species

Examples

- Publication of Skov et al (2018)
- Advancements in tagging technology
- Publication of Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing



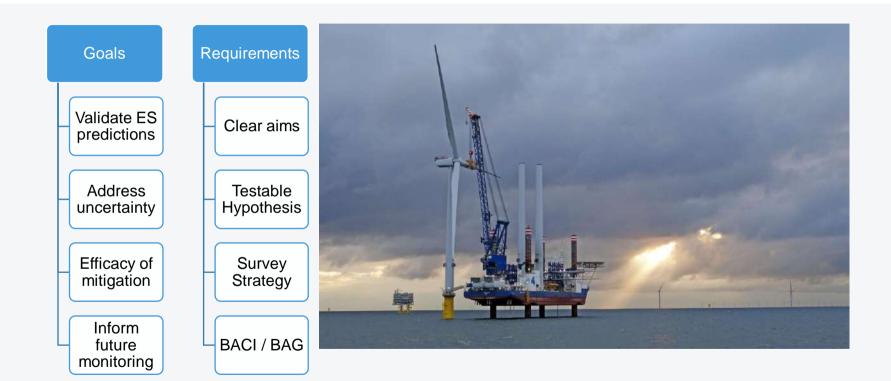
Progress since Coastal Futures 2018

- > Publication of Skov *et al* (2018) and the most recent publication of JNCC advice on avoidance rates
- Two years of tagging data from the Flamborough and Filey Coast SPA colony. In 2018 this included the development of altimeter technology to gain more accurate flight altitude measurements for kittiwake and gannet and more detailed behavioural data via accelerometers
- ➤ Initial results from red-throated diver tagging study which demonstrate there is no discernible effect of tags on breeding success
- ➤ Alignment of priorities for addressing outstanding uncertainties on underwater noise through the Offshore Wind Programme Board
- Offshore Wind Strategic Monitoring Research Forum OWSMRF
- ➤ The DEPONS project Disturbance Effects on the Harbour Porpoise Population in the North Sea
- Collaboration is essential to continue to help tackle strategic and industry wide challenges



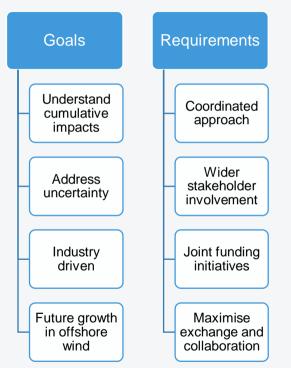


Historical approach to monitoring under current license regime





A more strategic approach to monitoring







Initiatives to deliver strategic monitoring in the current licensing framework

- ➤ The Moray Firth Regional Advisory Group (MFRAG) has been set up to meet the requirements of the section 36 and associated Marine Licence condition.
- ➤ Flamborough and Filey Coast Seabird Monitoring Group set up following discussions on the Ornithological Monitoring Programme for Hornsea Project One
- > Offshore Wind Ecological Programme (Wozep) in the Netherlands

Other possible suggestions include:

- Obligations secured via Crown Estate leases? But who gets the benefit of this work?
- ➤ Developers can contribute to voluntarily projects through R&D budgets or through industry wide groups such as OWSMRF.



Summary and Conclusions

- Adaptable
- Consistent and comparable datasets
- Flexibility around license conditions where necessary

- Less focus on site specific survey where relevant
- More strategic focus to answer the "big" questions



