



Offshore Wind

Challenges and Opportunities

NIRAS

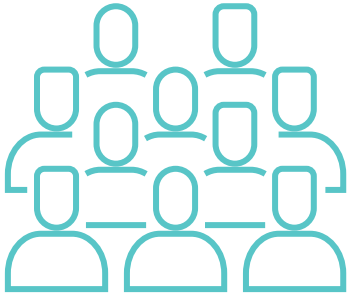
April 2024

NIRAS Global Perspective

A Leading Global Multidisciplinary Engineering Consultant



64
Offices
in **34** countries



+30000
Employees



7,500
Projects
delivered across **120** countries

Working with NIRAS

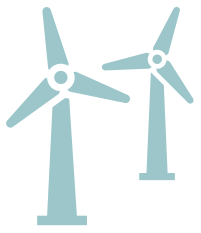
An integrated, holistic and cross-disciplinary approach is in our DNA



In Offshore Wind:

130+ dedicated staff are fully dedicated to Offshore Wind across Engineering and Environment working on project delivery in Europe, US and APAC region.

"Cooperation across sectors and locations provides our partners and clients with access to the latest knowledge."



Wind: Who are we?

+30 years in Offshore wind

Experts in the design, consenting, permitting, construction and decommissioning of offshore wind farms.

+50GW of project experience

>130 specialists/experts based in Copenhagen, Aarhus Cambridge, London, Liverpool, Glasgow, Oslo and Taipei

Environmental Consultancy

NIRAS environmental consultancy services within offshore wind are primarily driven out of Denmark, UK, Sweden, Taiwan and Phillipines

Engineering Consultancy

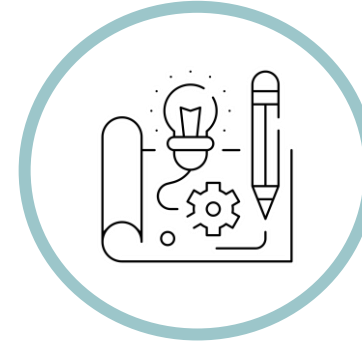
NIRAS engineering services within offshore wind are primarily driven out of Denmark, UK and Taiwan. The competence and service portfolio are broader while resources are embedded in the other dep./market areas in MGTB (Coastal, Geotech., and Marine Structures)

Revenue

The yearly revenue for offshore wind considering both environmental and engineering consultancy provided to developers, operators (incl. TSO), authorities, regulators, contractors, and other consultants, corresponds to **140 man-years/year**.



Expert technical consultancy



Concept/ Detailed design



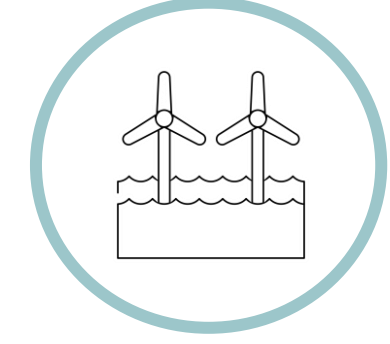
Lenders advice/ due diligence



Site selection/ feasibility



Policy/ strategic advice



Wind farm monitoring



Owners' Engineer



Development consent/ EIA

Challenges in Emerging Markets

Ports

- Existing port infrastructure insufficient for pre-assembly and construction
- Existing port infrastructure insufficient for O&M

Supply Chain

- Vessel and supply chain bottle necks due to high market demand in the offshore wind sector globally

GRID

- Unclear grid connection infrastructure and upgrade schedule
- Balancing grid and sector coupling

Financing across territories/borders

- Typical setup/partnership between international- and local developer requires financing from both
- Increasing costs through supply chain during the project development

Other markets – competition/focus

- Developers focus and business case is better in other markets

Permit, consent and EIA

- Benchmarking local standard with international standards to make sure the project(s) are bankable

Political ambitions

- Governments have a certain period to implement their politics and regulations, while offshore wind typically takes 7-10 years from decision to power production