Installation is the most complex phase of an offshore wind farm project and requires profound expertise for successful realisation.

When constructing an offshore wind farm, marine operations are a crucial and cost-intensive part of the whole project. The assets of components, their relatively high weight, weather-dependency at sea, as well as all planning and legal requirements put severe demands on transport and installation and the related logistics.

Offshore works are usually only one part of comprehensive contracts and are prepared and carried out nowadays by a small number of very experienced companies with specialised technical equipment.

Ramboll supports clients with management and engineering expertise. Our qualified and experienced experts provide marine engineering services for offshore wind farm projects to support clients throughout load-outs, offshore transport and installation of foundations, wind turbines, inner array cables and platforms.

Accurate engineering, preparation and coordination of all transport and installation-related works and their interfaces provide the basis for a safe and reliable as well as smooth and cost-controlled implementation of the marine operations. Potential risks that may arise during transport and installation are identified and minimised by a conscientious interface management to ensure an efficient performance of works, while adhering to mandatory health, safety and environmental (HSE) aspects.

We provide project support either on behalf of our client or work closely with the client’s engineering teams by contributing with extensive knowledge.

**Our experience and competences**
Ramboll has broad international experience and provides expert advice regarding offshore engineering, marine operations and port logistics from consultancy in the early stages of project planning to the coordination and management of engineering processes and client representation and supervision during transport and installation.

For further information, please visit www.ramboll.com or contact us directly:

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Project management
Ramboll has expert knowledge in all aspects of Transport & Installation (T&I) project management, incl. to:

- Initiate and perform technical interface management
- Develop project plans with work breakdown structures and time scheduling, incl. adverse weather considerations
- Manage contract and project time schedule with regard to the technical scope
- Establish and manage technical project organisation
- Manage procurement of technical and logistical works
- Manage certification and Marine Warranty Surveyor (MWS) processes
- Develop technical employer requirements
- Ensure compliance with technical and safety regulations.

Technical engineering
Ramboll offers the following wide-ranging services to:

- Prepare technical tender documents
- Prepare installation manuals, method statements
- Evaluate contractor’s T&I concepts
- Review and comment all necessary documents with regard to T&I
- Participate in meetings and technical clarifications
- Support T&I packages in various other tasks
- Make base harbour assessments.

Interdisciplinary services
- Foundation design
- Motion analyses
- Operation & maintenance engineering
- Decommissioning planning.

Onshore and offshore site supervision
Ramboll provides site experience for the following:

- Coordination and supervision of preparatory works at the onshore yard prior to load-out and sail-away
- Supervision of load-outs
- Representing client during offshore installation
- Supervision of offshore work disciplines.

Vast Experience
Ramboll has gathered vast experience in various projects across technologies, clients and countries, which allows us to offer a wide experience base. Examples of projects in relation to this are:

- DanTysk (GER), Gwynt y Môr (UK): Experience from EU’s key markets
- Sandbank (Monopiles), Wikinger (Jacket), Global Tech I (Tripods): Different foundation types
- Alpha Ventus (First commercial project in Germany) and Riffgat (installation thorough pile vibration): Novel technology

DANTYSK OFFSHORE WIND FARM
INSTALLATION OF OFFSHORE ACCOMMODATION PLATFORM

CLIENT
DanTysk Offshore Wind GmbH
LOCATION
North Sea, German EEZ
PERIOD
2013-2016
SERVICE PROVIDED
Support engineering process, management of MWS process, preparation of load-outs. Client Representative during load-out and offshore installation.

RIFFGAT OFFSHORE WINDPARK
FABRICATION AND INSTALLATION
OF 30 WTG FOUNDATIONS

CLIENT
EWE Enueerbare Energien GmbH
LOCATION
North Sea, German 12-miles zone
PERIOD
2010-2014
SERVICE PROVIDED
Technical interface management, time schedule controlling and technical consultancy during fabrication and installation, claim management steelwork.

DOTI WIND FARM ALPHA VENTUS
FOUNDATIONS, TURBINES, SUBSTATION

CLIENT
Vattenfall Europe Windkraft GmbH
LOCATION
North Sea, German EEZ
PERIOD
2009-2010
SERVICE PROVIDED
Consultancy during T&I engineering phase, management of MWS process, technical interface management, coordination and attendance offshore installation works.