



Renewable Energy

Advanced Engineering for Offshore Renewables

SafetyatSea has made its name by succeeding in challenging and novel marine design projects. **SafetyatSea** can use its experience and capability to contribute to the technological and commercial success of an industry dealing with some of the most challenging issues in engineering.

Naval Architecture

SafetyatSea's continuous involvement in challenging design, upgrade and conversion projects has allowed us to develop a strong naval architecture team capable of most design tasks. We are recognised as worldwide experts in stability and are the experts of choice for companies involved in difficult or novel projects or as a safe pair of hands for more standard calculations and design work.

SafetyatSea's experience in rule development on behalf of flags and class has allowed us to bring our expertise to many design projects where compliance with prescriptive regulation is difficult, expensive or simply impossible. As specialists in quantitative risk and performance-based assessments, **SafetyatSea** has helped our clients to obtain approval of alternative design arrangements.

Alternative design arrangements are those which deviate from prescriptive (SOLAS) construction requirements, and are usually related to intact/damage stability, fire protection, escape and evacuation. In many such cases, such arrangements have benefits for practicality of building, operation and cost, without compromising (and sometimes) enhancing safety.

SafetyatSea can define vessel design requirements in stability, seakeeping, structure, hydrostatic and hydrodynamic criteria for:

- Foundation installation
- Cable lay (export and array)
- Offshore substation installation
- Turbine installation
- Deck conversion and modification
- Personnel transport in high sea state

Development and Consent

SafetyatSea is able to assist with feasibility and front end engineering and design (FEED) studies required at the development and consent stage. The identification of vessel requirements, including heavy lift, and preliminary development of safety driven operation schedules is achieved through:

- Key risk identification and QRA
- Vessel design and stability assessment
- Hydrostatic and hydrodynamic studies



Balance of Plant

SafetyatSea has capabilities in Computational Fluid Dynamics (CFD) and Finite Element Analysis (FEA) allowing the computational assessment of facilities related components such as substation structure, fire and blast protection systems and, where necessary, Helideck assessments. Key service offerings include:

- Blast analysis
- Fatigue and structural analysis
- Thermal assessment of transformers and their cooling systems
- Helideck assessments
- Platform access

Installation & Commissioning

SafetyatSea is able to assist with vessel handling and multi-body dynamics encountered during the construction phase. Computational modelling techniques and stability analysis allow an understanding of the limitations critical to the deployment of subsea and topside infrastructure.

Calculating hydrodynamic coefficients of drag and added mass allows **SafetyatSea** to identify windows for safe operation ensuring product stability and integrity.

The stability of field infrastructure in-situ may also be assessed through the use of Computational Fluid Dynamics (CFD) to assess the on-bottom stabilities of field components.

SafetyatSea's activities cover:

- Seabed preparation including trenching
- Vessel stand-off
- Seakeeping
- Cable lay (export and array)
- Deployment and retrieval assessments
- Clashing assessment
- Dropped object and on-bottom assessments



Operations & Maintenance

SafetyatSea has a strong background in operational risk management. Its core services allow detailed assessment of safe operation for planned and unplanned maintenance and personnel movement within the operational field where major and routine maintenance or repair is required or for the transfer of offshore personnel for dedicated O&M port activity.

Further Information

For further information please contact:

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