

## RENEWABLE ENERGY PROJECTS

SEtech is a geotechnical consultancy specialising in identifying and mitigating geotechnical risk for marine construction projects. Our objective is to provide high quality technical solutions and consultancy advice throughout the development cycle of a project. We aim to add significant value with our input in terms of cost or risk reduction.

We provide a comprehensive range of geotechnical services, from desk studies and input at FEED stage, through to detailed design and recommendations for construction and installation.

Management of seabed risk is one of the key factors in optimising the design, installation and cost of offshore projects. With extensive experience brought from the oil and submarine cable industries, SEtech has developed a strong track record in the offshore renewable energy sector.

### Key Services include:

- Site selection studies
- Survey scoping and specification
- Survey management
- Conceptual foundation design
- Cable routing and risk assessment
- Burial assessment and scour protection
- Detailed foundation design
- Static and dynamic numerical analysis
- Installation engineering including pile driveability studies
- Research and development



### **Foundation Design**

SEtech undertake conceptual and detailed foundation design for offshore renewable energy structures. Design activities include:

- Scoping and supervision of specialist laboratory testing
- Analytical and numerical modelling
- Foundation / soil structure interaction
- Foundation dynamics
- Installation studies (including pile driveability, suction can set up, gravity base skirt penetration)

### **Cable Burial and Protection**

SEtech is an industry leader in providing advice and performance predictions for cable trenching. Calling on an extensive in-house database and unrivalled experience worldwide, SEtech is able to provide an independent assessment on the suitability of trenching equipment and undertake performance predictions in a wide range of seabed conditions.

We have also been at the forefront of establishing the use of the burial protection index and quantitative risk assessment techniques for determining appropriate protection measures for submarine cables. Significant cost savings have been achieved over the use of traditional protection methods such as rock dump or specification of deep burial.

### **Research and Development**

Research and development has a vitally important role in allowing the economic development of frontier areas, whether this is in terms of data acquisition, novel foundation design or installation techniques.

SEtech has a strong track record in leading applied research for the offshore construction industry. Close links have been forged with a number of specialist geotechnical departments at Universities in the UK and overseas. Recent and ongoing research activities include:

- IMIS: DTI funded project investigating novel installation methods for offshore wind turbines
- FINPILE: DTI funded project to optimise piled foundations for offshore wind turbines
- FDP: Development of a Full Displacement Pressuremeter to acquire stiffness parameters for offshore wind turbine foundation design