



part of the **Natural Power** group



PRE-CONSTRUCTION SUPPORT

Natural Power assist Clients from project consent through to the construction phase by providing:

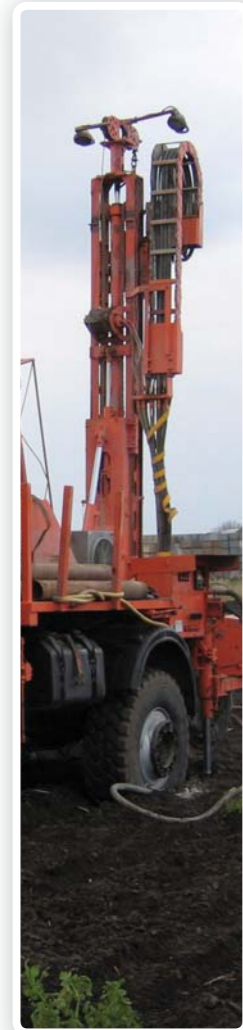
- Discharge of suspensive planning conditions
- Site investigation / geotechnical services
- Tendering and contract services for civil & electrical and wind turbines
- Grid connection review, monitoring and progression
- Preparation of construction method statements with the Principal Contractor
- Provision of CDM co-ordinator services

Our services include:

- **DETAILED GEOTECHNICAL STUDIES**
- **ECOLOGICAL MANAGEMENT PLANS**
- **CONSTRUCTION METHODS STATEMENTS**
- **BANKS' / OWNER'S ENGINEER**
- **CONTRACT STRATEGY & REVIEW**
- **TENDER STAGE**
- **GIS MAPPING**
- **PORT & HARBOUR ASSESSMENTS**
- **WIND RESOURCE ASSESSMENT & SITE DESIGN**
- **SITE CLASSIFICATION & TURBINE PROCUREMENT**



WE HAVE A PROVEN TRACK RECORD SUPPORTING CLIENTS THROUGH THE PRE-CONSTRUCTION PHASES OF PROJECTS WITH AN EYE TO THE OPERATIONS PHASE IDENTIFYING ANY POTENTIAL RISKS AS EARLY AS POSSIBLE.



DETAILED GEOTECHNICAL STUDIES

We specify, manage and provide a range of ground investigation services to aid tendering and detailed design for civil and electrical works. We can carry out all investigation works inhouse or provide clients with a management service depending on the turbine and site requirements.

Our expertise has been optimised through a long association with wind farm construction allowing our engineers to provide up to date services in line with current best practice. These services can be deployed in remote and challenging locations and include the following:

- Intrusive ground investigation via trial pits, boreholes and probes in accordance with British Standard and Eurocode Specification
- In-situ testing of soils and rock to determine geotechnical design parameters (e.g. CPT, Dilatometer, Pressuremeter etc.)
- Specialised peat stability ground investigations
- Geophysical testing for resistivity, down-hole and sub-surface imaging, cross-hole testing
- Provision of UKAS laboratory testing using BS, ASTM and ISRM standards
- Topographical surveying and setting out including forested areas
- Comprehensive factual and interpretative reporting
- Detailed borrow pit design including sections and working methodology to suit geological and site constraints
- Hydrogeology and dewatering
- Investigation of shallow abandoned mine workings
- Contaminated land investigation and monitoring
- Borehole water supplies and monitoring installations
- Geothermal drilling and system design
- Swept path analysis, detailed drawings and bespoke access solutions
- Construction phase geotechnical monitoring, testing and reporting

These services are provided both onshore and offshore.



CONSTRUCTION METHOD STATEMENT

Natural Power are able to assist the Principal Contractor in the preparation and submission of Construction Method Statements to Local Authority for their approval. These statements are often an integral requirement of the planning consent. Natural Power work with the Client and Contractor to collate all the information required to allow works to commence on site using best working methods and adhering to all Health & Safety and CDM requirements.



Offshore these services are provided in partnership with SeaRoc, part of the Natural Power group



ECOLOGICAL MANAGEMENT PLANS

It is imperative to have an agreed and clearly outlined management plan (e.g. land, habitat, bird, mammal, or water management plan) for responsible operation of the site over a long term if mitigating elements are required as part of the planning conditions for operational wind sites onshore and offshore.

This is, of course, required by the regulators and statutory advisors (Marine Scotland and The Marine Management Organisation; SNH, Natural England, CCW); however, a defined ecology management scheme also allows the developer to plan ahead (for needed investment and physical changes on site).

We help identify potential ecological issues before they arise and provide recommendations on the full range of ecological surveys your site may require. Acting on behalf of the client in dealings with planning authorities, regulatory bodies and government agencies, we ensure that your project complies with relevant conservation legislation and planning requirements to balance environmental concerns.



CONTRACT STRATEGY & REVIEW

Natural Power can advise the Client on the most suitable contract strategy dependant on how they wish to:

- Build the project
- Finance the project
- Manage the risk implications

Contracts are usually offered based on either a Turnkey or multi contract strategy.



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BANKS' / OWNER'S ENGINEER

We act as an advisory body to the Owner / Banks for the purpose of providing due diligence and ensuring that risks are minimised for investors / financial backers of a project. We review:

- Contract documents
- Land leases
- PPA
- Buildability
- Monitor progress on site to sign off milestone payments

Through due diligence we provide developers and potential funding organisations with reassurance that the project can be constructed and operated as consented. We examine:

- Planning permissions and conditions
- Landowner agreements
- Site access
- Grid connection offer
- Anemometry and wind analysis work
- Site ground conditions
- Turbine and Balance of Plant contractor shortlists

We can also provide a plan of action to address issues identified during the due diligence process, a project construction programme and input into the project financial model. Natural Power offer clients comprehensive, independent advisory services to help deliver a technically sound and financially successful project. Our role as Owner's Engineer for a variety of projects has covered:

- Feasibility and detailed design of marine installations and floating platforms
- Design management and review of Pre-FEED, FEED and detailed design
- Installation engineering philosophy and review of method statements
- Naval Architecture, Management of vessel builds and modifications
- Operation and maintenance strategy
- Engineering procurement strategy, bid management and support



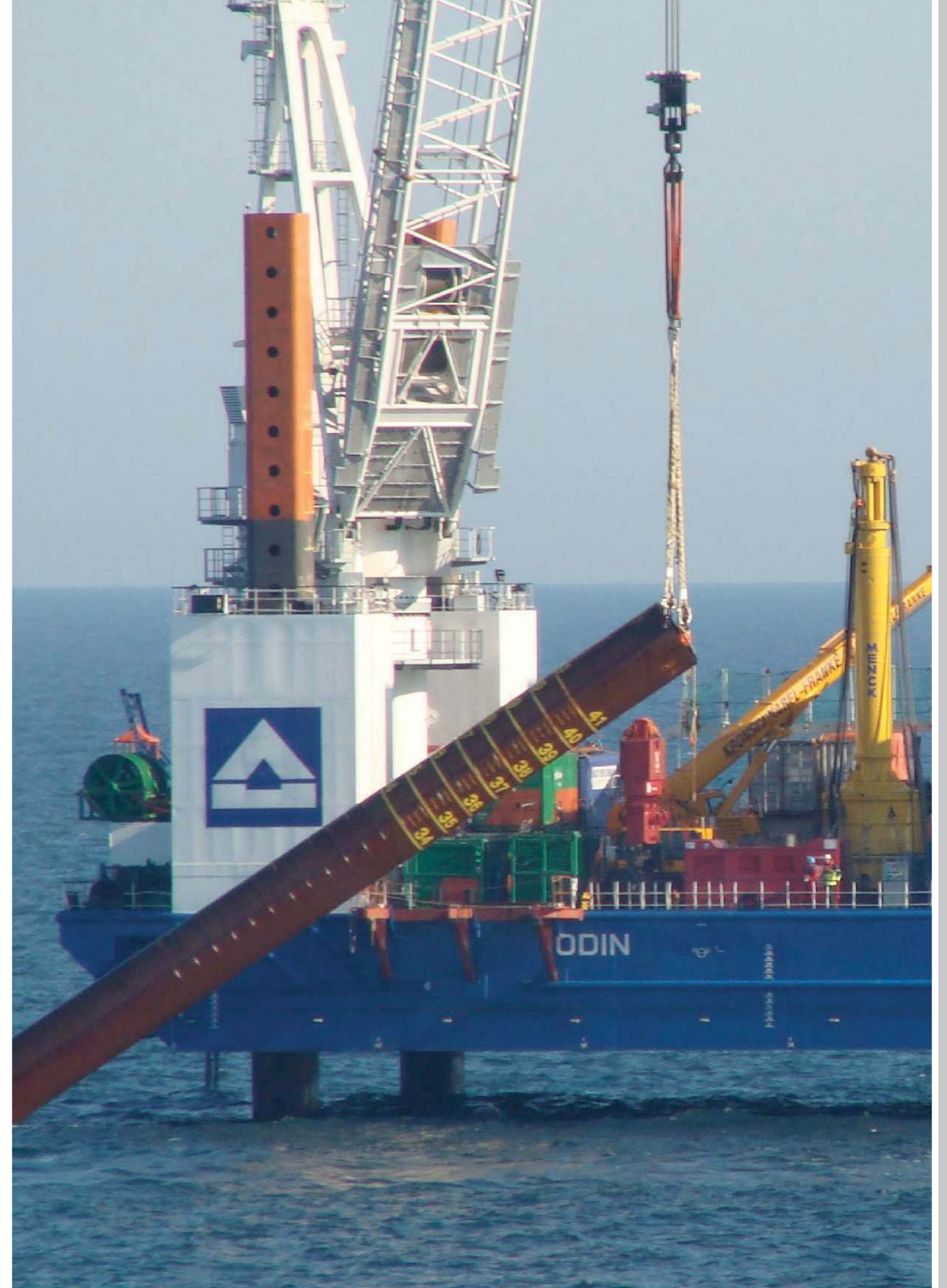
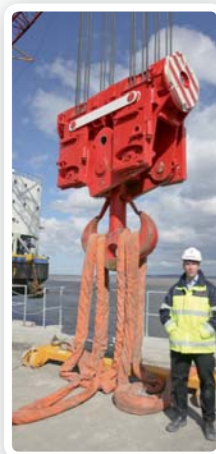
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PORT & HARBOUR ASSESSMENTS

Natural Power carry out assessments of port and harbour facilities for clients to ensure that project requirements for construction and O&M are accommodated. Site visits and desktop studies examine:

- Land area for development
- Vessel access
- Berthing facilities
- Load out facilities and constraints
- Availability of craneage
- Transport and land access

Following initial assessments we work with clients for a strategy for clients to develop the chosen port of harbour site to meet project requirements.



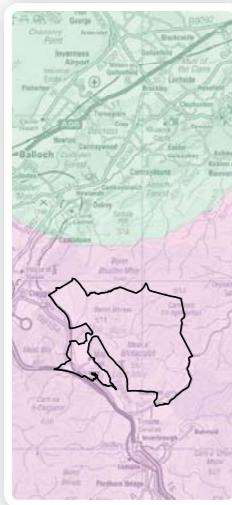


TENDER STAGE

Natural Power work with the Client's solicitor and other consultants to carry out the tendering and contracting services required for the Balance of Plant contract and / or the Turbine contract including:

- Discussions / pre-qualifications with potential contractors
- Prepare tender documentation – i.e. pre-construction health and safety information
- Manage the tendering process
- Update the tender documents as required
- Advise the Client on benefits and disadvantages of each tender submission
- Hold clarification meetings and award contracts based on Client's choice
- Finalise terms and conditions

Natural Power typically work with the Clients solicitor on the basis of a FIDIC yellow book contract and would generally issue a list of amendments, exclusions and site specific conditions to augment the standard contract.



GIS MAPPING

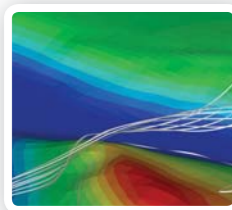
SeaPlanner GIS Server – a hosted server utilising industry leading technology that allows users to manage and edit GIS databases from multiple locations.

SeaPlanner WebGIS – a web mapping service to publish and host GIS data as a multi-layered web map with simple GIS tools suitable for sharing GIS data with project teams and contractors.

SeaPlanner Data Catalogue – a GIS data portal that allows suppliers to submit compliant data and metadata and users to search and query data layers, metadata and users to search and query data layers, meta data, suppliers and published maps.

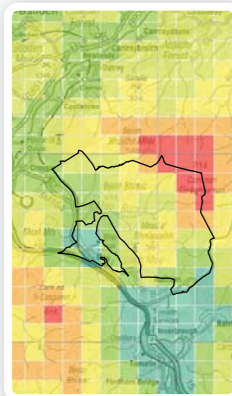


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WIND RESOURCE ASSESSMENT & SITE DESIGN

We provide comprehensive and proven wind resource analysis and mapping throughout all stages of a project, including full bankable yield and uncertainty studies. We have specialist tools and knowledge to address the complexities of wind flow in complex terrain and forested regions, leading to the identification and mitigation of wind quality issues in the wind farm layout design and analysis process.



SITE CLASSIFICATION & TURBINE PROCUREMENT

We routinely provide clients with an assessment of site compliance with IEC or GL wind turbine design criteria, including:

- Extreme wind analysis
- Turbulence intensity estimate at each turbine location
- Extreme temperatures, seismic risk, inflow angles and corrosion class

These predictions are a vital stage in the design and financing of a wind farm project, ensuring that turbine selection is optimised for the prevalent climatic conditions of the site, and further ensuring that climatic risks are understood and properly managed.



PRE-CONSTRUCTION SUPPORT PROJECT LIST:

PROJECT	LOCATION	MW	PROJECT	LOCATION	MW	PROJECT	LOCATION	MW
Crystal Rig 1	Scotland	50MW	Carno 2	Wales	15.6MW	Tweenbridge	England	44MW
Crystal Rig 1A	Scotland	12.5MW	Moel Moelogan 2	Wales	11.7MW	Drone Hill	Scotland	28.6MW
Roths	Scotland	50.6MW	North Rhins	Scotland	22MW	Sixpenny Wood	England	20.5MW
Ransonmoor	Scotland	6MW	Achairn	Scotland	6MW	Yelvertoft	England	Unknown
Lochluchart	Scotland	Unknown	Tullo	Scotland	17.5MW	Mid Hill	Scotland	50MW
Hyndburn	England	Unknown	Muirhall	Scotland	12.06MW	Wandylaw	England	Unknown
Paul's Hill 1	Scotland	55.2MW	Darracott	England	5.1MW	Hall	England	24MW
Paul's Hill 1A	Scotland	9.2MW	Low Spinney	England	8.2MW	Millour Hill	Scotland	Unknown
Craig	Scotland	10MW	Rosehall	Scotland	24.7MW	Roths 2	Scotland	45MW
Crystal Rig 2 / 2A	Scotland	138MW	Hazlehead	England	6MW			
Parc Cynog	Wales	4.8MW	Marr	England	8MW			
Castle Pill	Wales	3.2MW	Camster	Scotland	50MW			
Hill of Fiddes	Scotland	6.9MW	Coldham 2	England	14MW			
West Durham	England	24MW	Seamer	England	10.25MW			

ISO CERTIFICATION

Natural Power have established rigorous procedures and work instructions for all aspects of our business. All staff currently work to a list of core procedures for quality & environmental business management. Full details of our integrated QE management system are available on request. The following scopes for ISO 9001:2008 have been achieved, applicable to all our UK operations:

Technical Services UK

Resource management, analysis, modelling and design for the pre-construction phases of onshore and offshore renewable energy projects, including the application of tools and the methods of assessing complex flow environments for wind, wave and tidal environments.

Development Consultancy Services

Project management, consent management, due diligence and consultancy services including initial site feasibility studies, land agreements, management of the EIA process and planning applications, stakeholder consultations, permitting and discharge of planning conditions of renewable energy projects (onshore & offshore wind, wave, tidal, biomass, PV, hydro and associated infrastructure).

Construction & Ecology Management Group

Project management, due diligence and consultancy services (to include pre and post construction phases) for the construction of wind farms and biomass energy projects with associated site investigation services and onshore/offshore ecological services.

Asset Management

Wind farm operational site management.

