Natural Power is an independent renewable energy consultancy and services provider with over twenty years of in-house project experience. We provide expertise at every stage of the project lifecycle: from feasibility, development, pre-construction, construction, operations to re-powering, and through all elements of due diligence.

Natural Power’s 360° lifecycle experience spans more than 800 projects, with a team of over 340 experts. Our approach to consultancy services allows us to focus on reducing interface risk and working smarter from day one of your power project, through:

→ The application of pioneering new technologies, methodologies and best practices to tackle the most complex and challenging issues
→ The provision of project management experience delivering both practical and innovative consulting
→ Building wide and lasting relationships with our clients, who then benefit from our full lifecycle experience at every stage of their project
→ Providing trusted, impartial due diligence services to financial investors that equal the breadth of services offered to development clients

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"our mission and vision:

to create a better environment by providing market leading advice and services to our clients"
Natural Power started over 20 years ago and is now an established consultancy having worked on over 150 energy projects, representing over 4 GW of capacity. We employ over 320 specialists in managing a full lifecycle approach from consenting through to operation.

Our work on a wide range of energy projects has allowed us to establish relationships with local planning authorities, regulators and stakeholders.

Through our work with system operators and distribution network operators to solve grid connection issues and integrate electrical designs, Natural Power has gained expertise in a wide range of grid services. As a result, five years ago the company established a grid business to use our in house skills and experience to assist network operators, owners and first tier contractors in delivering network investments.
experience

03.1 Project Management

Our experienced team of project managers plan, design and undertake the surveys and assessments required to successfully deliver the connection project throughout planning, post consent/pre-construction, construction and operation. By drawing on the expertise of our in-house experts in:

- Route design and planning
- Ecology & hydrology
- Geotechnical
- Civil engineering and design
- Electrical design
- Risk analysis
- Health and safety
- Forestry management and route maintenance and clearance.

Natural Power can enable projects to pass successfully through the routing, electrical design and planning process to construction and operation.

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"we take a considered approach from the outset, therefore we can advise our clients on the best way to achieve their project goals whilst flagging any potential risks"

Jeremy Sainsbury, Director
Routing Design and Planning

Natural Power supports its clients through the project route design and consenting process by bringing together cutting edge project knowledge and experience with a realistic approach to development and risk mitigation.

We take the opportunity to work with our clients to define and address every aspect of a potential project throughout the development phase, identifying risks and opportunities at the earliest possible stage.

Our aim, like our clients’, is to efficiently manage costs and risks to help deliver consented projects ready for financing and construction, including, but not limited to:
Planning and Environmental services

- Scoping, Environmental Impact Assessment / Environmental Report co-ordination, consent strategy and management
- Wayleaving (Powerlines and Substation)
- Total in-house landscape, ecology and hydrology services including: consenting advice & Environmental Statement (ES) / Report chapter production
- Strategic constraints mapping
- Statutory regulation, politics – strategy, advice and application
- Ecological desktop studies and surveys (onshore and offshore) and European Protected Species (EPS) license application
- Hydrological studies including drainage water crossing assessments and development of hydrological monitoring plans
- Geotechnical services including intrusive works, topographic survey and interpretive reporting

Civil and Electrical Design Services

Natural Power has managed the civil and electrical design for a range of projects on behalf of our clients, including:

- Concept design studies
- Overhead line studies
- Conductor studies
- Substation design and engineering
- Programme design
- Metering
- Training
- Power systems studies
- Structural, foundation and steelwork design
- Construction process and methodology
- Access and logistics studies
Geotechnical Services

Multi-phase site investigations incorporating the latest ground investigation techniques and health & safety with a focus on behavioural safety performance.

- 65+ projects
- 2GW+ experience
- 5 drill rigs
- 14 hagglunds
- 10 years experience
Public Consultation

Natural Power has worked on a large number of projects involving a broad range of stakeholders. The team understands the challenges that every phase of a project has faced. This puts us in a unique position to engage with the local community or communicate with your key stakeholders. We can tailor our event services to be as unique to our client as every other stage in our consultancy services. From providing promotional material for small town hall meetings to the design and execution of a regional consultation event programme, we can support via:

- Public exhibitions
- Public notices
- Exhibition materials
- Websites
- Promotional items
- Public relations
- Social media
- Community engagement
Pre-Construction

Natural Power has extensive experience in progressing projects from gaining consent through to commencement of construction. As with all phases of development, our approach is to mitigate risk for the client and seamlessly move the project from consent to a buildable asset.

Services include:

- Health and safety consultancy & CDM Support Services
- Geotechnical services including intrusive works, topographic survey and interpretive reporting
- Ecological and hydrological surveys
- Management of planning condition discharge
- Management & production of marine licence / consent compliance documentation

Environmental Clerk of Works

Our team of experienced Environmental Clerk of Works (ECoW) act as the point of contact for all license condition discharge, construction & installation teams and statutory and non-statutory stakeholder liaison. This is a key knowledge transfer aspect from pre-construction to construction and post-construction and is a core area of Natural Power’s expertise.
03.5 / Construction

Services include:

- Monitoring and auditing services
- Compliance monitoring
- Health and safety
- CDM/health and safety consultancy
- Health and safety training
- Environmental Clerk of Works (ECoW)
- Provision & management of Marine Mammal Observers (MMO’s)
- Environmental training
- Negotiation with stakeholders and regulators on changes in survey method statements
- Community Liaison
- Planning monitoring officer

// we take a pragmatic approach to engineering timescales while remaining sensitive to the environment

Chris Pendlebury, Director of Planning and Environment
Operations

Control Centre Services

- 24/7/365 Control Centre Services
- Operational liaison with National Electricity Transmission System Operator (NETSO)
- Monitoring of the transmission system
- Responding to alarms and events
- Mobilisation of Standby Engineer for site investigation of alarms and events
- Responding to direction from NETSO for configuration of the transmission system
- Notifying NETSO of services reductions
- Application of Natural Power Safety Rules (Electrical & Mechanical)
- Access control and work management
- Implementation of Emergency Response Plans
- Safety co-ordination across control boundaries
- Performance reporting

Field Services

- First response to alarms and events by Standby Engineer
- Operational and Safety Switching
- Implementation of Natural Power Safety Rules (Electrical & Mechanical)
- Delivery of site induction training
- Application of work management procedures
- Contractor management and setting to work
- Routine substation inspection and maintenance with associated reporting
- QESH auditing and compliance monitoring

Asset Management Services

- Development of inspection and maintenance policies
- Selection of contractors
- Maintenance management
- Warranty management
- Spares management
- Technical reporting

Cable inspection techniques

- Side scan sonar and underwater camera, allowing real time inspection of exposed cables

Ecological/hydrological monitoring

- Migratory fish assessments
- All other ecological / hydrological monitoring requirements as per planning / licence conditions
We aim to get maximum revenue for our clients by optimising performance and reliability during the operational stage.

Euan Fenelon, Director of Operations and Asset Management

Due Diligence

Transaction Advice Services

- 24/7/365 ControlCentre Services
- Review and due diligence of project documentation – engineering, contracts, land agreements, permits and timescale
- Due diligence of existing infrastructure
- Liaison with OFGEM, Lenders, Contractors and relevant stakeholders
- Review technical inputs to financial models – DEVEX, CAPEX, OPEX
- Management of financial model
- O&M Contract Costs, management and ancillary costs, contingent sums
- Using operational experience to review and optimise O&M strategies
- Review of network interactivity and regulation
**Project:** Western HVDC Link

**Client:** Prysmian

**Project Description:** Natural Power act as Project Ecologist, providing Marine Licence compliance advice for the installation of the West Coast HVDC Interconnector, which passes through English, Welsh, Northern Irish, Manx and Scottish waters, resulting in a multitude of licence conditions to comply with.

**Services Provided:**
- Reviewing marine licence and environmental report mitigation commitments and timelines
- Review of Environmental Management Plan (EMP) and other documents to ensure marine licences compliance
- Producing specific ecological reports (biodiversity risk assessments, suspended sediment reports, and ECoW protocols)
- Stakeholder negotiation when variations to commitments or changes in method statements have been required which has enabled work to continue to plan

**Added Value:** Natural Power provided rapid, ad-hoc reporting & negotiation services, thus enabling project methodologies to be amended as necessary during construction whilst ensuring adherence to licence conditions and preventing costly delays.
<table>
<thead>
<tr>
<th><strong>Project</strong></th>
<th>Foyers to Knocknagel 275 kV Geotechnical</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client</strong></td>
<td>Balfour Beatty Utility Solutions</td>
</tr>
<tr>
<td><strong>Project Description:</strong></td>
<td>This project involved geotechnical soil investigation for the design and upgrade of foundations for circa 74nr overhead transmission line (OHL) towers, between Foyers and Knocknagael substations. The project involved detailed ground investigation using our fleet of drill rigs, supported by our in-house team of geotechnical engineers to complete an intrusive ground campaign.</td>
</tr>
</tbody>
</table>
| **Services Provided:** | ← Rotary boreholes advanced using openhole methods, SPTs and percussive sampling in superficial deposits and by coring in bedrock to recover samples and carry out in situ testing  
→ Detailed Risk Assessment and Method Statement (RAMS) for each activity and portion of the site  
→ Field records from ground investigation  
→ Laboratory analysis report  
→ Factual reporting detailing the findings of the site investigation on a tower by tower basis  |
| **Added Value:**     | Whilst not undertaken in this instance, our team has also provided additional support with an interpretive report that characterises the ground conditions to inform a ground model and ultimately tower design. |
**Project:** Lochluichart Wind Farm, Scotland

**Client:** Eneco

**Project Description:**

The project involved designing, assessing and consenting an underground cable connection from the on-site substation to a new substation at Corriemoillie. Our team was required to balance the potentially conflicting requirements of the client, landowners, and consenting authorities with the technical and engineering requirements of the project, challenging ground conditions and a sensitive receiving environment.

The project was consented by Highland Council as a delegated decision without any third party objections in four weeks. It has now been constructed and forms the grid connection for the operational wind farm.

**Services Provided:**

The project was co-ordinated from within Natural Power’s planning and development services team but was delivered using a multi-disciplinary team of experts from across the company. This included:

- Planners
- Project managers
- Ecologists
- Hydrologists
- Electrical engineers
- Civil engineers
- Land agents
- GIS/CAD operators

The site and the surrounding areas were initially mapped out to identify topographic, hydrological, ecological, archaeological, technical and other known site constraints along with landownership and land use details.

Site assessments were undertaken by Natural Power staff to confirm the presence and extent of known constraints on the ground, map out ground conditions and identify and confirm the presence of additional ecological and hydrological constraints. Meetings were also held with Highland Council, SNH and SEPA as well as landowners and other land users to identify and confirm their views and requirements.
Using this information, the eventual route was selected and the project was designed as far as possible to avoid these constraints. This included:

- Water vole, otter and red squirrel habitat
- Badger sets
- Landscape sensitivity
- Forestry plantations of various ages and density
- Water courses and wetlands
- Areas of deep peat
- Areas of steep slope
- Aquifers
- Archaeology
- Private water supplies
- Access tracks
- Landowner boundaries
- Field boundaries

Final detailed assessments on the ground were then undertaken to ensure that the potential impacts of the proposal could either be avoided or, where necessary, mitigated through appropriate construction methods and monitoring.

The final route and impact assessments were discussed and agreed with Highland Council and SNH before being submitted. As a result of the appraisals and detailed design work undertaken, the planning application was screened out as not requiring EIA and was determined in four weeks under delegated powers.

After consenting the project, Natural Power staff were also involved in the discharge of conditions, and in the construction and monitoring of the project.

**Added Value:**

Given the nature of the project (post consentgrid connection) the project had to be delivered within an agreed timescale in order to fulfill the client’s requirements for construction and grid connection. This had to be dovetailed with the need to undertake ecological surveys during the appropriate survey periods.

The client also had very specific design requirements in terms of land ownership and land take which placed further constraints on the delivery of the project. Despite this, the project was successfully delivered and the client went on to construction, leading to a fully operational wind farm.
<table>
<thead>
<tr>
<th><strong>Project:</strong></th>
<th>Tidal Project</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client:</strong></td>
<td>West Islay Tidal Project</td>
</tr>
<tr>
<td><strong>Project Description:</strong></td>
<td>Natural Power were commissioned to undertake the benthic baseline for the cable route for the West Islay Tidal Project and write the benthic chapter for the ES.</td>
</tr>
</tbody>
</table>
| **Services Provided:** | → Deploying Drop Down Video (DDV)  
→ Benthic grab survey  
→ Epibenthic beam trawl survey  
→ Intertidal surveys at land falls  
→ Production of ES chapter |
| **Added Value:** | Survey work was undertaken in a highly challenging environment of tidal rapids. DDV and grab survey work was undertaken in parallel, thus enabling suitable weather windows to be utilised, minimising delays and costly mob/demobilisations. |
### Project: South West Scotland Renewables connection project

<table>
<thead>
<tr>
<th>Client:</th>
<th>Scottish Woodlands Limited</th>
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</table>

**Project Description:** The SWS Renewables Connection project enabled the construction and operation of a modern energy connection network located across East Ayrshire and Dumfries & Galloway, connecting numerous renewable energy schemes to the National Grid. The overall project involved the upgrading or construction of substations, connected by approximately 46 km of new or upgraded overhead line. Natural Power were contracted to Scottish Woodlands Ltd in relation to tree felling works.

**Services Provided:**
- Licence Application for the European Protected Species (EPS). Otter, protected species licence supporting information for badger and red squirrel
- Review of licence conditions & existing information
- Production of Construction Environmental Management Plan (CEMP), including sub plans for pollution prevention, peat management, site waste management, site specific ecological management, emergency response, environmental audit and inspection, environmental communication and training, biosecurity, ground water dependent terrestrial ecosystem mitigation, and water quality testing plans for both private water supplies and surface water quality
- Provision of risk and method statements for pre-felling survey and ECoW works, pre-construction, ecology & hydrology surveys for -
  - Bats
  - Nesting Birds
  - Red squirrel (Sciurus vulgaris)
  - Pine marten (Martes martes)
  - Badger (Meles meles)
  - Otter (Lutra lutra)
  - Water vole (Arvicola amphibious)
  - Reptiles
  - Water course crossings
  - Provision of Ecological Clerk of Works services throughout felling
  - Ecological & hydrological survey reporting

**Added Value:** By working closely with the other project partners on the SPEN Interconnector project Natural Power were successful in winning work with the principle contractor for the project and the overarching project management company. All parties involved identified cross-party working as key to the success in delivering the project to budget/timescale and with clear ecological benefit.
<table>
<thead>
<tr>
<th><strong>Project:</strong></th>
<th>Wind Farm Grid Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client:</strong></td>
<td>Pen y Cymoedd Wind Farm</td>
</tr>
<tr>
<td><strong>Project Description:</strong></td>
<td>The initial proposal included a 12 kilometre overhead 132kV grid connection although this element was replaced with a proposal to position the connection underground prior to submission.</td>
</tr>
</tbody>
</table>
| **Services Provided:** | - Lead consultant carrying out and co-ordinating all environmental surveys, scoping, EIA production and liaison with consultee bodies  
  - Constraints mapping and landowner identification  
  - Liaison with specialist electrical design and civil engineers  
  - Specialist input devising “Peat Impact Minimisation Protocol” – an agreed methodology to overcome objections from statutory consultees leading to a post consent survey and design iteration for certain infrastructure elements  
  - The engagement with planning authorities statutory and non-statutory consultees was complex as the site was large and straddled county boundaries as well as team boundaries within consultee bodies |
| **Added Value:** | Project was consented without the need for appeal or public inquiry despite its size and proximity to densely populated areas. |
Natural Power delivers services and operates assets globally for our clients, with eleven offices across Europe and North America and agencies active in South America and Asia Pacific.
Health & Safety

Natural Power operates a Safe System of Work procedure, this procedure outlines the requirements and guidelines required for safety in the workplace and mitigation of risk.

Health & safety is the number one priority for Natural Power both from an operational and management point of view. The safety of our staff, contractors, and the public must come before any technical or commercial considerations.

In accordance with statutory requirements, for all routine and non-routine activities undertaken by employees and others working on behalf of Natural Power, a risk assessment must be undertaken and sufficient controls introduced to manage the risk. Method statements are activity specific and are prepared where their absence would adversely affect the ability to exercise the controls identified by risk assessment.

The ControlCentre is an industry leading innovation providing 24/7 monitoring and communication services through trained operatives in our control room, ensuring our field staff have round the clock access to log on and off of the remote / lone working system. This combined with our hand-held SPOT devices ensures staff members working in the field have a safe environment to operate in.

Quality

Natural Power has established rigorous procedures and work instructions for all aspects of our business. All staff currently work to a list of core procedures for quality control and business management as part of our on-going commitment to our Quality Management System (QMS).

A totally integrated project management system is used throughout all departments, that includes file tracking and back-up along with resource management, document checking and authorisation, providing a full audit trail for all documents and project activities.

All data and reports are subject to a minimum two stage quality assurance process in line with ISO 9001:2008 procedures where documents are produced by a technical specialist then checked by another specialist before being checked and approved by a senior manager, ensuring a consistently high quality output to clients at all times.

Our asset management, construction and ecology management group, technical services and development consultancy services have all achieved the ISO 9001:2008 certification and Achilles Verify Category B2. Full details of our QMS are available on request.
Environment
Natural Power has internal goals with regards to environmental practice relating to energy use, carbon footprint reduction and recycling. We have had an Environmental Management System (EMS) in place since 2001 and have progressed our EMS to an integrated Quality and Environmental Management System and now hold ISO 14001:2004 certification.

All policies and arrangements are reviewed on an annual basis by our Quality and Environmental Manager and the management team.

The processes required for the Quality and Environmental Management System, their sequence and interaction have been identified along with the criteria and methods required to ensure their effective operation and control. All subcontractors would be expected to work to the Natural Power Environmental Policy Statement; evidence of this is required on appointment. Before each project commences an environmental risk assessment is carried out covering all aspects required for the scope of work.

Disaster recovery
Natural Power recognises the need for our clients’ projects to have robust systems and processes in place to ensure that data, documents and key staff continuity are retained in the event of a major incident.

Natural Power’s electronic Document Management System ensures that project documents are stored in a secure and ordered location on a central server which is backed up regularly to off-site storage.

All emails are archived in a cloud based system which allows recovery of deleted mail and also provides email continuity in the event of a failure of Natural Power’s servers or internet connection.

Hard copies of key documents are stored in a fireproof safe.

Multiple office locations assist in provision of continuity in the event of a major incident, such as fire, affecting any particular location.
what we do

→ Leading independent renewable energy consultancy
→ Analysis, engineering, planning & permitting, environmental, project management and due diligence services
→ Onshore wind, offshore renewables, solar, hydro, renewable heat and grid & infrastructure
→ Established in 1995, 11 offices globally, 340+ staff

For full details on our ISO and other certifications, please visit: naturalpower.com/company