



We have a long and successful track record of delivering hydrology services for clients in the feasibility, development, pre-construction, construction and operational phases of projects.



We deliver proactive independent advice in-line with industry good practice, that is trusted by statutory bodies such as SEPA, NRW, the EA and Local Planning Authorities.

A selection of services include:

- Hydrology, Hydrogeology and Geology Environmental Impact Assessment
- Regulatory licence application
- Water Resource and Flood Risk Assessments
- Expert Witness
- Water Framework Directive assessments
- Construction Environmental Management Plans
- Design and implementation of Hydrological Monitoring Plans
- Design and implementation of Peatland Monitoring Plans
- Environmental Manager and Environmental Clerk of Works
- Drainage design, advice & auditing
- Integration with Natural Power Geotechnical and Design Services
- River gauging and flow modelling
- Climate resilience services and advice

150
environmental projects

300+
years environmental experience

11
hydrologists

100
hydrology projects

// our team is experienced and qualified to develop novel cost-effective solutions for developers and stakeholders, alongside our standardised surveys //

Kelly Wyness, Principal Hydrologist





Case Study 1 Kilgallioch Wind Farm

Natural Power services at Kilgallioch Wind Farm, a 96 turbine site in South Ayrshire and Dumfries & Galloway, included the undertaking of baseline water quality monitoring and macro-invertebrate surveys. Monitoring was carried out based on detailed methodologies set out to discharge planning conditions. This involved extractive surface water sampling, the installation of continuous monitors and macro-invertebrate surveys.

Natural Power also supported ScottishPower Renewables in discussions with Marine Scotland Science following specific requests for there to be an extended baseline monitoring period. Statistical analysis of long term (>25 years) SEPA data showed correlations with the site specific data to allow the monitoring period to be reduced by 50% and for the original construction programme to be maintained.

Case Study 2 Caithness to Moray HVDC Land Cable Route

Acting on behalf of the Principal Contractor, Natural Power is overseeing environmental management requirements to ensure that reasonably practical but robust environmental management practices are implemented throughout the works. Natural Power has developed and prepared environmental documentation based on ecology and hydrology survey data. This has allowed site specific environmental management practices to be put in place by the appointed civil contractor, audited by Natural Power.

Natural Power is also providing the Environmental Clerk of Works role that includes inspecting and auditing the site environmental management practices, including pollution control arrangements, working in peat environments, protection measures for water resources, and drainage management practices. The team is also implementing water quality monitoring, using hand-held and continuous monitors, which provides additional reassurance to the success of the environmental management practices.

Case Study 3 Pen y Cymoedd Wind Farm

The Natural Power hydrology team has been involved in this project since 2009 and has provided support on planning submission documentation, discharge of planning conditions, and implementing the approved monitoring strategies during construction. A critical requirement of the project was to undertake peat probing and data interpretation to allow infrastructure micro-siting as part of the Peat Impact Minimisation Protocol.

The hydrology team coordinated the delivery of the Peatland Water Level Monitoring Programme which was required to determine impacts of the wind farm infrastructure on the flow exchanges within the peat body. Data was collected in conjunction with river flow monitoring to assess any impacts of the wind farm infrastructure on runoff patterns.

In order to help determine the requirement for diffuse drainage within areas of deep peat, the additional assessments have used high resolution topographic survey data to determine surface and sub-surface areas susceptible to saturation.

Case Study 4 Derrydarroch Hydropower Scheme

Derrydarroch is a 2 MW run of river hydropower scheme located in the Loch Lomond and Trossachs National Park. Natural Power was involved in the discharge of planning conditions including the preparation of a Construction Environmental Management Plan. This included providing details on drainage management, peat and soil management, waste management, pollution control, and water quality monitoring. The team was also successfully involved in verifying the river flow information to maximise the Annual Energy Production of the project.

Natural Power completed the hydrological monitoring during the construction phase to quantify the effectiveness of the site construction management works. The clear presentation of the results demonstrated the influences of climatic conditions on the recorded data.

