



**ITPENERGISED**  
Earth. Smart. Solutions

HYDRO ENERGY

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[www.ITPEnergised.com](http://www.ITPEnergised.com)

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## Introduction

ITPEnergised (ITPE) was formed when Energised Environments Limited acquired Bristol-based IT Power Consulting Limited. ITPE is a trusted advisor providing client-focused, commercially minded, energy and environmental consulting services to clients in onshore & offshore energy, transport & infrastructure, property and corporate sectors.

We deliver feasibility, environmental planning and technical support on environmental assessments for a range of developments. Key areas of specialist advice include the feasibility and consenting phases through to post-submission support and construction environmental management.

## Our Capabilities

We pride ourselves on providing a level of detail to meet the needs of the client in an easily understood and technical robust manner. We have an excellent understanding of the planning requirements and strong relationships with the regulators to ensure we are able to navigate the most expedient path to a consented project.

### Our air quality services include:

#### Air quality monitoring

- Planning and execution of monitoring using passive and continuous monitoring techniques
- Data management and QA/QC
- Dust monitoring

#### Compilation of emissions inventories

- Site/project scale inventories to quantify fugitive emissions

ITPEnergised LIMITED ADVICE FOR HYDRO

If you are looking for a reliable partner to support you with Hydro Energy then please contact:

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## Selected Project Experience

### Outline Design and Budget for a Renewable Energy Scheme

**Canna Community Association – Canna**  
ITPenergisised carried out a feasibility study into using a combination of solar, wind, biomass, hydro, wave, and tidal power to provide sources of energy to the Island of Canna, minimising or doing away with the need for diesel generators. ITPenergisised provided an outline design and budget, allowing informed decisions to be taken as to the shape, scale and financial feasibility of any future project development.

### Micro-hydro Feasibility Study

#### Shetland and Western Isles

Assessment of 17 potential micro-hydro sites in the Western Isles and Shetland. The sites ranged from run-of river, low and high head system designs. Each site was examined for its suitability for development, estimated energy output, key barriers to development and advice on how to overcome these barriers. In addition to the technical evaluation ITPenergisised undertook a financial feasibility assessment and community consultation.

### Energy Pre Feasibility Study

#### Alkane Energy

Site identification and pre-feasibility study for Alkane Energy plc. A short pre-feasibility study identifying several sites on behalf of the client collecting sufficient data on the technical, economic and environmental feasibility. The scope of the study was tailored specifically to meet the requirements of the client and resulted in a number of potential sites being identified ranging from 250kW to over 1MW.

### Hydropower Site Analysis and Energy Capture Exceedance Estimate

#### Shrewsbury

ITPenergisised assisted private developers on a hydropower project under consideration for a site at Shrewsbury in England, sized between 300 and 400 kW capacity. ITPenergisised undertook financial and technical analysis of various alternative site locations and turbine designs and provided recommendations for optimum capacity and technology type suitable for the scheme. A lifetime energy capture exceedance estimate was also produced for the scheme taking into account the effect of all variables that could affect the output of the scheme.

### Hydropower scheme

#### Surrey

ITPenergisised recently completed a study to evaluate the installation of a small hydropower scheme at an old mill site in Surrey, including analysis of 'Flow' and 'Head' Duration Curves and calculation of energy generation, presentation of various technical options and systems appropriate for the local hydrology, estimate of project installation costs and guidance of operation and maintenance requirements and costs, insight into various planning and environmental considerations and licenses required to develop the site.

### Hydropower scheme

#### Bedfordshire

ITPenergisised assisted a Local Authority client to develop a micro hydropower scheme in Bedfordshire. Again the services ITPenergisised provided include detailed design, assistance with planning application and Environment Agency licence applications and project management of installation.

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## Tees Tidal Barrage (hydropower scheme)

Teeside

ITP Energised completed a hydro power feasibility study for NaREC at the Tees Tidal Barrage near Teesside that involved a site visit and two reports to determine the 4 hydro scheme options at site, then working with other proposals for renewable energy at site, including small wind and on-site solar generation.

## Mini hydropower feasibility studies

UK various

Detailed feasibility study for 500kW and 1MW hydro-electric schemes in the UK, including conducting consultations with the regulatory bodies and appropriate stakeholders, scoping for environmental sensitivities at the site, preparing the technical, economic and financial analysis of the proposed scheme development and preparing the planning application, seeking for consent to develop the site.

## Harelaw Renewable Energy Park

East Renfrewshire, Scotland

Preliminary Feasibility Study undertaken for the potential of micro-hydro power at the Harelaw Renewable Energy Park in East Renfrewshire, Scotland.

## Pre-Feasibility Hydropower scheme near

Driffield, Yorkshire

Preliminary Feasibility Study for the potential of micro-hydro power (22 kW) at a mill near Driffield, in Yorkshire.

## Feasibility for Hydropower scheme

Saltaire, Yorkshire

Feasibility study for a 100kW hydropower scheme in Saltaire, Yorkshire, involving consultation with Environment Agency and local stakeholders and designing the appropriate scheme in a UNESCO heritage site.

## Hydro Feasibility Study

Whitchurch Silk Mill

Feasibility study for Whitchurch Silk Mill supported by Clear Skies and Hampshire County Council. A full study to determine the real potential of the existing mill site to once again produce hydroelectric power that will service the needs of the only traditional Silk Mill in operation in the UK today. The detailed study gives consideration to the head and flow regime of the River Test, energy modelling, turbine options, type of screening required, grid connection and environmental issues that surround the development of hydropower in an SSSI.

## Blaydon Weir

Gateshead Council

Feasibility study for Gateshead Council for site potential at Blaydon Weir. A comprehensive study identifying the technical, administrative, environmental and planning requirements for a new 50kW hydropower development at a disused Coke Works.

## Guildford Mill

Guildford Borough Council

Feasibility study for Guildford Borough Council for the re-commissioning of Guildford Mill. A full feasibility study at the Old Mill site to identify technical and economic potential. In addition, the administrative requirements and environmental issues were also investigated. The site has the potential for a 50kW plant.

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## Feasibility studies

### Powergen (now E.ON) Renewables

Site identification, pre-feasibility and feasibility of low-head sites in England for Powergen Renewables. A number of potential sites were initially identified in a desk-top study and then a short list drawn up for a further investigation through sites visits. The technical and economic potential of each site was analysed.

## Project Design work

### RWE Innogy

Project design, costing and organisation of planning and environmental permissions on behalf of RWE Innogy plc for the development of a small hydro scheme on the River Thames. This work built upon outcome of the point below. ITP Energised on behalf of RWE Innogy provided the detailed design, site economics and environmental considerations that formed the basis of the planning application for the 200kW scheme. Planning was passed in early 2004 and is the first of its kind on the Thames and the South East.

## Hydropower scheme at Windsor Castle

### Royal Household

Project planning and design for two proposed hydro sites for supplying power to Windsor Castle on behalf of the Royal Household; obtained a grant of 200,000 Euros from the EC to subsidise the project.

## Technical Advisor for Hydro Study

### South-East Development Agency

Technical advisers to the Hydro Study of the South-East supported by the South-East Development Agency (SEEDA). ITP Energised provided a detailed report regarding the current, appropriate hydropower technology suitable for the mainly low head sites in the South East. The report was subsumed into the wider Low Head Hydro Power in the SE report aimed at informing the regional stakeholders of the resource available and the associated technical, environmental and socio-economic issues information was a part.

## Feasibility studies

### Environment Agency

Feasibility studies for the Anglian Region of the Environment Agency to establish the viability of hydro-generation from 15 river structures on the rivers Nene and Ouse. Identifying the technical and economic potential at each of these sites.

Pre-feasibility studies for the Southern Region of the Environment Agency on the potential use of weir and old mill sites for hydropower development.

## Feasibility study

### Bedford Borough Council

Feasibility study for Bedford Borough Council on the economic and technical potential for low-head hydro developments at 4 sites on the Bedford Ouse. Environmental issues and regulatory requirements were also considered.

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