Micro Hydropower
The
UK Perspective

CIFAL Findhorn
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Low Head Hydropower

Does the gold rush for green energy threaten our fisheries?

“FISH” Magazine
Summer 2008

Institute of Fisheries Management
History & Development
History & Development

Shetland Mill
History & Development

Water Mills
Hydro Electricity

History & Development
History & Development

Modern, efficient generating sets
Turbine Types

Size

Pico/Micro
Up to 100kW

Mini/Small
100kW to 30 MW

Large
Over 30 MW
Hydro Development in the UK

Developments as a result of Renewables Policy

New projects

Refurbishment and upgrade of existing projects

Micro-hydro
Micro Hydro

WE HELPED GANTS MILL
REDISCOVER THE POWER OF WATER

Together we can make a difference

Our client, Gants Mill in Somerset, had been using fossil fuel generating a small amount of electricity, with significant reductions in carbon emissions. Our team led the refurbishment, making it a new, efficient, and sustainable power source for the future. The rafters, sails, and other features of the area will be re-adapted and repurposed, just as it was in the original setting.

Where do you get your energy from?

EDF Energy is a trading name used by EDF Energy Networks Ltd. 
EDF Energy Networks is a company incorporated in England and Wales with registered number 04488274. The successor company to the business formerly conducted at the address of EDF Energy is EDF Energy Networks. EDF Energy Networks is a wholly-owned subsidiary of EDF Energy Networks Ltd.
Micro Hydro
UK Hydropower

Hydropower contributes 40% of the total UK renewable generation capacity

Conventional Hydro
Existing 1350 MW
Potential > 1 GW

Micro Hydro
20,000 mill sites - 200MW

Pumped Storage
2500 MW

Tidal Power
Upwards of 8 GW
UK Hydropower

Scottish Hydropower Resource study

>100kW - 95MW
Total 709 MW

What needs to be done to make most of this Potential?
Challenges

Water Framework Directive
Consistency in Environmental Requirements
Abstraction charges
Planning
ROC Banding
Proving hydro is significant for 2020 targets
BHA’s role

Lobbying

Working Groups

Consultations

Support for individual members

Enlist Government support:
  Export

UK Project work
BHA’s role
Conferences & Seminars
Education
Image

BHABHA’s role in education and conferences.
## 1.0 Mini-hydro: a step-by-step guide

This guide is designed to guide anyone in the UK who is planning to develop a small-scale hydroelectric scheme. It has been prepared by the British Hydropower Association in order to support and encourage new developments in this sector.

The term used in this Guide will be ‘mini-hydro’, which can apply to sites ranging from a tiny scheme to electricity a single home, to a power station. Schemes for selling into the National Grid.

The Guide will explain:

- The basic concept of generating power from water
- The purpose of different components of a scheme
- The principle steps in developing a project
- The technology involved
- Where to go for help and sources of funding

This guide can also be downloaded as a single PDF file, 353 kilobytes and 31 pages in length.

### Mini-hydro 3

Small-scale hydropower is one of the most cost-effective and reliable energy technologies to be considered for providing clean electricity generation.

In particular, the key advantages that small hydro has over wind, wave and solar power are:

- A high efficiency (70 - 90%), by far the best of all energy technologies.
- A high capacity factor (typically >50%), compared with 10% for solar and 30% for wind.
- A high level of predictability, varying with annual rainfall patterns.
- Slow rate of change; the output power varies only gradually from day to day (not from minute to minute).
- It is a long-lasting and robust technology; systems can readily be engineered to last for 50 years or more.

It is true environmentally benign. Small hydro is in most cases ‘run-of-river’, i.e. either uses any clean or barrages, quiet wind, usually just a weir, and this is 10% water in stored. Therefore run-of-river installations do not have some kinds of adverse effect on the local environment as large-scale hydro.

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**Further Details**

Contact us...
UK Hydropower Industry

Owners & Developers
Hydrologists & Fisheries
Consulting Engineers
Design Engineers
Manufacturers & Suppliers
Contractors
Legal & Finance
Refurbishment & Upgrade Services
Project Management & Operation
Electricity Traders
Utilities
BHA is actively supporting MICRO HYDROPOWER