

# **COMMUNITY RESILIENCE**

## **Emerging opportunities around Sustainable Water Infrastructure**

**Case Study [2] Upperlands Community Development Ltd  
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### **Why Hydro in Upperlands**

#### **Introduction**

In the mid nineties when I returned to our home in Upperlands, the once fine Victorian Village was in economic decline and derelict in places.

I joined an existing voluntary group in the village. Its aim was to regenerate the village and find projects that would provide long term recurring income to be applied to community needs, environment, employment and social in terms provision of a Community Centre.

#### **Hydro**

Our first choice was Hydro Electric generation. We had a limited supply of water from the dams of the partly redundant Linen Mill. We also had within our volunteers a residual knowledge of water power. A good hydro plant could provide income for years and years to come with minimum effort in terms of management and upkeep.

#### **Rental Units**

It was also decided to build a small Business Centre comprising of industrial and retail space for employment opportunities and a Community Centre for administrative and social purposes. We had very limited financial assistance from the Local Authorities otherwise the Community Group was penniless.

#### **Back to Hydro**

Some funding was obtained for preliminary Hydro feasibility study which proved positive. Our volunteers needed credibility and that was achieved by training and networking – getting known. Also getting properly constituted as a Charitable Company Limited by Guarantee without Share Capital.

### **Hydro Capital Funding**

This was granted by European Unions' Inter Regional Fund; provided the local Mill Management would guarantee water supply in return for supply of electrical power to them at a discounted price. This was to help their efficiency and sustain employment. The Local Authority would also provide further marginal funding. The Community Group would lead the building of the plant, own manage it and get a recurring income from it.

### **Choice of Plant**

A "FRANCIS" turbine generator and management system was chosen, against much cheaper alternatives; due to its reputed longevity. This was supplied by Gilbert Gilks and Gordon, Kendal, Cumbria - who would undertake installation and commissioning.

### **Civil Engineering Aspects**

A half mile long underground pipe or penstock would carry water from the mill dams at a flow carry of .9 of a cubic metre per second to a plant in a power house. This would provide HEAD and high running speed in the plant.

### **Electricity Transmission**

Power is transmitted underground to the Provincial Grid where it is measured and nationally fed to The Linen Mill.

### **Consultant – Contractors and Others**

Along the way Hydro/Civil Engineers were sought and appointed. Civil Engineering Contractors and Electrical Engineering Contractors were also sought and appointed. A working relationship with Northern Ireland Electricity Plc, [now known as Power NI] was also formed as was support of The Northern Ireland Regulator whose help was vital.

### **Time of Building**

Upperlands Hydro Electric Plant was built and commissioned by the end of 1998 after which our treasurer proudly announced. " We are making money".

### **Business and Community Centre**

Development of Upperlands Business and Community Centre was undertaken 1990/2000 and opened in September 2000 by our then Secretary of State for Northern Ireland, The Right Honourable John Reid MP; a man of this country. For contractual reasons in the early days and now Legal reasons we are not able to supply our units with electric power. We are however now evaluating the building of a second smaller plant to supply our community buildings.

### **Problems**

There have been some problems over the past 13 years in managing the plant. Autumn debris in the water system is a recurring chore. A lightening strike on the generator was unexpected and in the early days contractual issues had to be worked through. In the words of Bill Clinton, "The devil was in the detail"

### **Supplementary**

Upperlands Hydro has a maximum output of 125kwh that equals 1,250 1000 watt traditional electrical lamps.

### **When do we Generate Power**

Not all the time and mainly when there is sufficient water in the river and storage dams. Our plant is programmed to generate at times of peak demand when unit prices for the sale of electricity is at its highest.

### **Can you Store Electricity**

You can not really store electricity but you can store water for hydro generation – Example - Scottish Power.....

### **What About Occupancy of Rental Units**

Prior to our present economic down turn, at times we had full occupancy, that is no longer the case but from Hydro income and lettings we are able to keep going without help from the bank.

### **Have you Financial Reserves**

In good times we were prudent, some would say frugal, and accumulated reserves which can be used for emergencies.

### **What are your Big Outgoings**

Insurance, heating and lighting, We employ only a part time Administrator, Cleaner and Groundsman. All other work is undertaken by volunteers like myself.

### **Does your Community Centre Pay its Way**

No, certainly not. Our rationale is that revenue flowing from Hydro and from Rental income subsidises the Community Centre. However we keep rents for units at a minimum to encourage folks to start up in business and we provide limited financial assistance to persons when starting up a business in terms of help with fitting out and usually the first months rent is free.