FARMING FUTURES
PROFITABLE BUSINESS IN A CHANGING CLIMATE

NFU

CASE STUDY 24

## FOCUS ON RENEWABLE ENERGY

# MILES AND GAIL FURSDON

**Miles and Gail Fursdon created a micro-hydro system on their farm in 1995, using the power of the falling water to generate electricity. The electricity is used by the farm and the surplus exported to the National Grid. In high winter flow, the larger 90kW turbine produces enough electricity for the surrounding villages (approximately 80 homes). When the flow is lower in the summer, a smaller 20kW turbine is used, allowing the system to still produce electricity. The benefits of this system are not just felt by the Fursdons; it has produced advantages for the environment and for educating others too.**

THE DETAIL

- **130 acre** single suckler Devonshire hill farm
- **90kW** turbine installed in **1995**
- **£80,000** investment
- Payback **within 5 years**
- Other benefits include enhanced biodiversity and education provision for community

**(above)** Miles and Gail Fursdon at the 2004 Ashden Awards with Sir David Attenborough

### What is the specification of your system and how much did it cost?

In 1936, when there was no mains electricity on Dartmoor, my grandfather operated a 7kW turbine, which continued to run for a further 60 years. When I took over the farm I knew there was more potential to be had from the river and so decided to install a larger turbine and export electricity back to the Grid.

The total installation cost was £80,000, which includes the cost of the turbine, piping and extensive ground works which were needed. I kept costs low by doing most of the work myself, making my payback period short, at only 5 years. If you were doing a similar job using a contractor, I think it would have cost £200,000.

To help fund the project we entered into a Non Fossil Fuel Obligation (now evolved into Renewables Obligation Certificate), whereby electricity suppliers were required to purchase electricity from a percentage of non-fossil fuel sources. This set a price which we were paid for the electricity we exported back to the National Grid.

### What other benefits have you seen?

My aim always was to improve the efficiency of the previous plant and enhance the environment both in

and around the water's edge. To move the water from one end of the farm to the other, a leat was dug with a screener at one end, to prevent fish, leaves and debris entering the system. This means that the water is actually cleaner after it has been through the turbine.

Maintaining a satisfactory income flow can be particularly stressful for upland hill farmers like myself and this project has provided a stable alternative income source for the farm.

By diversifying, the income has also allowed me to expand my interests. We now provide guided walks around the site and workshop talks to any interested party. This includes local groups, fellow farmers and educational institutions (schools, colleges and universities), as the walks provide many educational benefits and links to various curriculum subjects.

We have also won several accreditations including 2004 UK runners up in The Ashden Award for Sustainable Energy, 2004 Energy 21 – Private Owners or Users Award, 2007 Royal Bath and West Farm Diversification Award, 2007 Devon County Agricultural Association Diversification Award and 2010 honorary Dartmoor First Award in recognition of our commitment to Dartmoor; a sense of place, a precious resource and a living landscape.

### What challenges have you faced?

One of the biggest challenges was the logistics of getting water from one end of the farm to the other. After we had decided to construct a leat and the necessary ground works, it was a long and challenging task.

Another issue was planning permission, which took us three attempts to secure. This was made harder by the fact that we are within the Dartmoor National Park boundary, which brings with it an even stricter set of planning criteria.
Once we finally had planning permission, we then had to meet the environmental requirements set by the Environment Agency and had to obtain a water abstraction licence.

### What do your fellow farmers think?

Obviously, hydro schemes are very site specific. Several local farmers with a similar situation to me have been keen to utilise their untapped resource and have installed similar systems.

However, there still seems to be a feeling that hydro is one of the highest risk renewable energy sources, but if you choose your system properly and use experienced professional installers it can be fairly simple. My system has been in for 15 years and other than a very small amount of routine maintenance it hasn't missed a beat and will, I hope, go on to produce green electricity for local homes for the next 15 too.

> "Maintaining a satisfactory income flow can be particularly stressful for upland farmers…and this project has provided a stable alternative income source for the farm."

*'The figures and information expressed in this case study are specific to the farm involved. Farmers should take their own professional advice about the likely costs and benefits of using renewable energy, and take professional advice about the legal, tax, planning and SPS / agri-environment scheme issues that may be involved in renewable energy installations.'*

**For advice and information on how to apply this approach to your own farm, take a look at FACTSHEET 2: GENERAL OPPORTUNITIES AND CHALLENGES**

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