Dyfi Valley community renewable energy project

This case study provides an overview of a project based in the Dyfi Valley, near Machynlleth, mid Wales. Several organisations came together to enable local people to carry out small-scale schemes using various renewable energy technologies.

When did the project begin?

The project began in June 1998. The initial funding was for three years and elements of it were extended until June 2002. The experience gained during the project was used during the formation of Powys (now Mid Wales) Energy Agency in 2001.

Who's involved?

The Dyfi Eco Valley Partnership, a company limited by guarantee now known as ecodyfi, managed the project. It was created by Powys and Gwynedd county councils, Dulas Ltd (a leading specialist renewable energy company based in Machynlleth), the Centre for Alternative Technology, the Welsh Development Agency and Snowdonia National Park. It drew in other partners and local people, becoming the sustainable community regeneration body for the area.

How is it funded?

The European Commission provided 35% of the funding from the European Regional Development Fund through the Objective 5b structural funding programme. The Welsh Development Agency, Powys County Council, Dulas Ltd and the Shell Better Britain Campaign all contributed. Investments by local private sector participants/owners in individual schemes counted as part of the matching funding for the EC support. Ceredigion County Council and Cymad (a regeneration body for Gwynedd) provided additional funding for feasibility studies.

> **"These are difficult times for hill farmers. This diversification gives me hope that we'll be able to keep our sons employed on this family farm**
>
> Tegwyn Jones who installed a 112kW grid-connected hydro-electric unit on his farm

What are the targets and aims?

The Dyfi Valley Community Renewable Energy Project aims to benefit the community's 12,500 or so residents by:

- encouraging local people to engage with energy issues
- establishing some community-based renewable energy installations
- improving understanding and support for renewable energy by maximising the local benefits.

In addition, three specific targets for the project were to: **1)** complete five individual schemes by June 2002; **2)** establish 350kW of energy capacity (whether electricity or heat) for the community; **3**) put in place a forward planning strategy for the local energy economy.

How was it implemented?

EU funding was secured which enabled the project to provide grant aid for eligible community-based renewable energy schemes. The criteria for were that the scheme must: be of local benefit; have local support; have (at least) majority local ownership; and have (at least) majority local control.

Schemes could be held in private, joint or common ownership.

The grant aid covered up to 30% of a scheme's capital costs, and financial help was also given towards feasibility studies. The project also offered staff time in the form of a project officer, who responded to project suggestions but also initiated them in some cases. He provided, at no cost, first-level feasibility studies, together with administrative support and guidance as necessary, including acting as planning agent for schemes or as secretariat for community groups.

Feasible scheme ideas were worked up into applications for grant aid, and the successful ones guided forwards to implementation. Scheme proposers included schools, farms and other businesses, householders and community groups. The project also promoted solar water heating to householders to the point where they could install their own system.

The project was promoted through visits to various local groups, including councils, and through making contact with local networks. There were public meetings, door-to-door leafleting and articles appeared in the local media, including the three very local Welsh-language monthlies. Word of mouth was also crucial in this rural community.

LESSONS LEARNT

1. the provision of grant aid for eligible schemes was crucial: very small schemes tend to be economically marginal, with long payback times
2. it's difficult for people to risk investing in development work before issues such as planning permission and finance are secured, so subsidised or free feasibility work is important
3. landowners and community groups often need a lot of 'hand-holding' – providing information, signposting to technical assistance, and/or doing some of the legwork or administration for them
4. people wanting to develop a scheme need access to financial, legal and community development expertise, as well as technical input
5. small schemes are more easily accepted by neighbours, planners and the community generally. However, they suffer from diseconomies of scale, particularly with regard to grid connection and legal costs
6. working with communities takes a long time (e.g. finding and involving the community's 'movers and shakers' and trying to address local misgivings). Also, volunteers' time is limited due to other commitments
7. individuals with enthusiasm and persistence are needed to make schemes happen; others will then follow
8. landowners can make or break schemes
9. regulators play a crucial role. Planning authorities should be shown the context and general benefits to be gained, so that they are informed when individual applications come in. Projects are vulnerable to changes in the regulatory environment; during this project, the Environment Agency tightened up the way it dealt with applications to abstract water for hydro-electricity schemes, significantly reducing the viability of sites
10. creating a market for 'new' fuels is difficult (for example, for wood chip from forest residues and farm woodlands), as there is not enough confidence in the economics when a supply infrastructure is not in place.

Dyfi Valley community renewable energy project was formed to enable local people to install small-scale renewable energy schemes. This group is exploring the possibility of a micro-hydro project

Achievements

Sixty-five scheme proposals were carried through to 28 grant offers. Schemes completed to date include:

- a 112kW grid-connected hydro-electric unit, installed by a farmer
- three 800–1000W (domestic) solar electric installations, one of which powers a ground-source heat pump
- a 1.4kW solar electric array at Dyfi Eco Park and two 690W solar electric arrays at schools
- 124m^2 solar thermal array, plus a 'heat main' (carrying heat between buildings), installed at the Centre for Alternative Technology
- 14 solar hot water systems in the Dyfi Valley and ten more in the rest of Powys.
- A 75kW V17 community wind turbine was installed through the Bro Dyfi Community Renewables Ltd.
- A PV system has been installed in a social housing development of ten flats and in a semi detached property.

Two key success factors

1) each scheme had access to grant aid, officer support, technical expertise and assistance
2) the involvement of keen individuals.

Next steps

Ecodyfi continues to foster sustainable community regeneration in the Dyfi valley. A new 500kW Nordtank turbine is soon to be installed using a similar setup to the existing 75kW turbine. So far it has £43,000 of European funding, sourced by the Mid Wales Energy Agency. Some income from these turbines is fed into a the Community Energy Fund which has funded the distributed low energy light bulbs and will hopefully support Ecodyfi and a focus on lower-carbon transport in the future.

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Community Action for Energy (CAfE) is an initiative of the Energy Saving Trust that promotes and facilitates local community based energy projects. This case study is one of a series showcasing the most exciting and innovative of the 2500 projects that are part of the CAfE network.

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