The V17 Community wind turbine at Cilgwyn, Pantperthog, in the Dyfi Valley, mid Wales

An account of how it was developed, written in March 2004

1) Establishment of a small core community group
   - The original idea came from a local person who at that time was a voluntary Director of the Baywind Energy Co-op and had professional experience of developing wind energy. She worked for the Machynlleth-based renewable energy company Dulas Ltd but wanted the community itself to develop and own a scheme.
   - This idea was received enthusiastically by one of the engineers at the Centre for Alternative Technology (CAT), who had a 15 kW wind turbine nearing the end of its useful life and rising demand on site. CAT's involvement in such an innovative demonstration of renewable energy development would provide demonstration and education benefits to its visitors while securing a renewable electricity supply - without the need to find capital funds itself.
   - Advice on process and potential grant aid was provided from the beginning by two professionals living locally: one employed by the local community regeneration group (ecodyfi) and the other by the local Energy Agency (Powys – now re-named Mid Wales). The former was running an EC-funded umbrella project to stimulate community-based renewable energy schemes.
   - These people met with two other interested locals to work out what might be possible and how to take it forward, including holding a first public meeting in Pantperthog Village Hall.

2) Provision of a community "vehicle" to take responsibility for the project and drive it forward
   - An unincorporated association called The Dulas Valley Community Wind Partnership (DVCWP) was formed at the second public meeting. People paid £10 each to fund the development costs – mainly the planning application fee and the cash costs involved in producing the application and the environmental statement. Local opinion varied from strongly supportive to cautious at the first public meeting, with some concern about possible visual and noise intrusion. Most were pleased at the prospect of local people profiting from wind power, rather than non-local developers. One household raised strong objections later but had moved away from the area before the project came to fruition. One person from outside the community spoke against at the second meeting but concluded she wouldn't raise a campaign against it because she could see the support and it was a relatively small turbine.

3) Further research and attempts to expand membership
   - Efforts to expand membership of the Association were made through the local press, word of mouth and by placing leaflets in places such as the village hall and the vegetable box scheme.

- Three members were given responsibility for managing the development process for a while, including the turbine choice and system design, in exchange for some money and the promise of some shares. Nevertheless, a huge amount of time was donated by these and other individuals.

4) Negotiations with land owners of the favoured site
   - The intention at this time was to place a 30kW turbine near the existing 15kW turbine just above CAT. 30 kW was calculated to provide enough power for most of CAT's electrical demand, with most of the rest being available for conversion to heat. Export to the Grid was not intended to be very significant so the implied upgrade to the weak local Grid from CAT was not a big issue at this time.
   - The land was owned by a Trust and only one of the four decision-makers was local. This made effective communication difficult.

5) Secure grant aid
   - Ecodyfi successfully applied to the ScottishPower Green Energy Trust for a grant to add to the one already secured from the European Commission (ERDF). Powys Energy Agency incorporated the project into a funding agreement it had with the Energy Saving Trust (EST). Part of the EST money was used as a capital grant and the rest was used to buy shares. These were vested in the local Community Energy Fund, which seeks to reduce carbon emissions and address fuel poverty.

6) Preparation and submission of planning application (including a detailed Environmental Impact Assessment); negotiation with planners where appropriate.
   - Significant amounts of time were spent on the planning application process by four local professionals, who did not charge at that stage but who eventually were rewarded with shares as recompense for their work on landscape, noise and other predictive work.
   - Two other single wind turbines were already present on the same or nearby hills.

7) Achievement of planning consent with unforeseen design changes (so that the turbine could be ordered when money became available).
   - Only one individual letter of objection was received. The Snowdonia National Park Authority objected on the grounds that it would be visible from the Park and the Countryside Council for Wales expressed some doubts.
   - Despite earlier promises, it became apparent that the 30kW turbine under development in Germany would not be available in the UK soon enough for this project. An alternative 2-bladed turbine was ruled to be unacceptable by the planning officer. The nearest equivalent was a 50kW turbine from the USA, so costs and designs were recalculated on this basis. When the planning officer opposed the lattice tower that came as standard, the possibility of

commissioning a suitable tubular tower in the UK was explored. Eventually this factor and the rapidly changing dollar exchange rate made the capital costs exceed the budget and the change to a second-hand 75 kW Danish turbine was made. This was accepted as an amendment to the application.

8) Signing up of land owners concerned in the new site
   - The increased output implied a need to strengthen the low-capacity connection between CAT and the National Grid, to cope with the "spill" into the National Grid. This became an issue with the landowner, who also owned some of the land required for this cabling. He eventually withdrew his cooperation and an alternative turbine site on nearby Forest Enterprise (now Forestry Commission Wales) land was negotiated with them and the planning authority. This required a complete re-design of the electrical circuits, with the longer cable route from the turbine to CAT crossing the land of two farmers and needing extra transformers.
   - FE helpfully felled trees to assist construction of a short access track from existing forestry tracks. They also agreed a temporary access licence for construction and a longer term lease at a "non-commercial" annual rental. The project is in line with the Woodlands for Wales strategy for involving communities in woodlands.
   - The two farmers chose to take cash rather than the shares offered for their partnership.

9) Negotiation of terms for electricity sales
   - Although the revised configuration of the cabling (from the turbine, through an existing grid connect point and on to CAT) will make it possible for the group to export to the National Grid if necessary, the original model of supplying a single user was retained. This provided the security of a long-term agreement in a volatile market at a time when the electricity market itself was undergoing radical change. It also maintained the partnership with CAT.
   - The purchase agreement has three price tiers, to reflect the usage of the power. The first tranche produced (per year) has a high value because it will replace electricity that would otherwise be imported or expensively generated on site. The price of the second tranche reflects a heating fuel value, and any surplus production has a lower value, representing "spill" to the Grid. CAT were given rights to any renewables benefits. As it turns out, this has represented a much higher value during the first year of operation than anticipated, because the value of Renewables Obligation Certificates has been higher than originally predicted.

10) Ordering of wind turbine and issuing of contracts for construction and commissioning
   - One member was a hands-on engineer with experience of wind turbines. He ended up being the lead member of the construction team, but at an earlier stage the group sent him to Denmark to examine the proposed turbine and to negotiate essential

refurbishments. These were carried out by the original manufacturer (Vestas) before shipping, apart from the painting of the tower. This was carried out by volunteer members after delivery.

- Invitations to tender were issued to relevant civil engineering companies, though it was hoped that a consortium of CAT and local individuals (such as a JCB operator) would be formed and bid. In the end the contract was placed with CAT, who sub-contracted locally. Some sub-contractors chose to take shares instead of cash, as did CAT Consultancy (for their profit element).

11) Build community group membership from the local community through marketing activities and register group as Industrial & Provident Society
    - A legal identity with limited liability was required so Bro Dyfi Community Renewables Ltd (BDCR) was formed.
    - A specialist solicitor recommended registration under the I&PS Act rather than the Companies Acts, mainly because such Rules are designed to provide one vote per shareholder rather than one vote per share.

12) Attract sufficient share finance
    - The share offer was issued by the Renewable Energy Investment Club (REIC) to its members, on the basis of information received from BDCR. BDCR made a presentation to REIC members locally at a special meeting.
    - All members of the DVCWP had been given free membership of REIC, since this was to be REIC's pilot project.
    - REIC had been set up by Dulas Ltd and Groundwork Bridgend during an EC-funded project to facilitate the purchase (by qualifying individuals) of shares in renewable energy projects, where the issue of a prospectus to the general public would be prohibitively expensive.
    - Baywind Energy Co-operative agreed to underwrite the offer – they would buy any unsold shares. This gave the group the confidence to proceed.
    - In the event the share offer was over-subscribed and individuals had to be limited to £1,000 each. The minimum shareholding was set at £100.

13) Installation of road access, foundations, cabling, switch gear etc., followed by the turbine and grid link

14) Commissioning the turbine and connecting it to the grid
    - There was a delay of several months when everything was ready apart from the grid link. One of the problems was poor clarification of responsibilities between CAT (as construction contractor with responsibility for ordering the grid connection from Manweb) and BDCR (with prime responsibility for landowner agreements), such that Manweb assumed they could use methods of working that had not been agreed with the landowner. Another long delay resulted

from a pre-existing issue between Manweb and a landowner that was not related to the project.

15) Holding of a public launch event

- This was a wonderful day, with a great sense of celebration and occasion.

16) Establishment of management board for the Community Energy Fund

- This Fund, to pay for practical measures to reduce energy costs and carbon emissions, is managed by representatives from BDCR, CAT, ecodyfi and the local Community Council (Glantwymyn). To date, it has held three successful events where energy-saving advice was provided and a free compact fluorescent lamp given to those completing a questionnaire about their house. These surveys are analysed by the local Energy Efficiency Advice Centre (Mid & West Wales), who return a report with recommendations to the householder.
- The Fund receives income from the dividends accruing to those BDCR shares bought with EST money. It also has some funds donated by CAT from the sale of electricity from its MS4 wind turbine.

17) Administration of Bro Dyfi Community Renewables Ltd.

- While some annual income was set aside in the budget for administration, so far it has been done voluntarily by committee members of BDCR. This is proving to be a strain. The group would like to employ an administrator, and will be able to afford to do so if its plan to buy and re-power a separate 600 kW turbine is successful.

See also "**The community wind turbine at Pantperthog - the facts"**

and http://www.ecodyfi.org.uk/renewables.htm

www.ecodyfi.org.uk
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