

2009 UK Ashden Awards case study

Devon County Council: Renewable Energy for Devon

Finalist's work: Generating employment by supporting renewable energy businesses and customers

Organisation: County Council, established 1970, income £1.1b (2008-09), 23,000 employees

Location: Exeter, Devon

Summary

The county of Devon has significant renewable energy resources, including suitable sites for micro hydro and wind turbines, ample solar radiation, and plenty of woodland to supply biomass fuel. The county also has many deprived rural areas, where most of the employment is provided by small businesses. Devon County Council launched Renewable energy for Devon (RE4D) in 2006, in order to create and safeguard jobs and at the same time cut CO₂ emissions. The project tackles both sides of the renewable energy market at once, stimulating demand and building up installer capacity.

- Ten 'technology growth plans' commissioned to investigate key aspects of the growth of the renewable energy sector in Devon.
- Survey of renewable energy installers identified gaps in skills. Training courses provided on technical and business topics. Over 90 supplier training places provided.
- Installer network with annual meeting and internet-based discussion forum.
- Advice given to 345 SMEs and 70 communities, schools and public sector organisations. Includes over 280 detailed energy audits which assess potential for renewable energy, followed-up with suggestions for installers and help with accessing grants.
- RE4D provided up to 25% grants for SMEs and 50% to community organisations, total £250k. Helped clients access grants, private funds and loans from other sources totalling £805k.
- £59k funding for 45 feasibility studies for businesses and communities.
- 109 renewable energy installations in organisations, and a further 18 in domestic properties.
- Total installed capacity of 2.1 MW.
- Avoided emissions of about 1,300 tonnes/year CO₂.
- Reduced energy bills for small businesses and community organisations – projected savings £168k per annum over lifetime of equipment.
- Estimated 55 jobs created and 16 safeguarded.

Renewable Energy for Devon

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Context

Devon is a county with many sources of renewable energy. The national parks of Dartmoor and Exmoor receive above average rainfall and are several hundred metres above sea level, providing a viable hydro-power resource, while they and coastal areas also have high average wind speeds. The lower lying inland areas include significant areas of woodland, providing a source of biomass fuel, and levels of solar radiation are higher than the national average across the whole county, particularly near the coast.

Some urban centres in the County are affluent, but there is significant rural deprivation. There are many small to medium enterprises (SMEs) scattered throughout the rural areas

Devon County Council aims to reduce the overall carbon footprint of the county, and is keen to use the environment as an economic driver. In addition to funding awareness-raising campaigns and Devon Warm Zones, which insulates homes, the council has focused on the small and medium-sized (SME) sector. The environment and the economy are two of the council's five strategic themes, and its goals include 'helping local businesses adopt environmentally friendly practices' and 'sustainable growth of green businesses linked to the county's natural assets'.

For generation of renewable energy to increase, both the demand for renewable energy technology, and the capacity of the installers to meet this demand must increase. It is common for projects to address one or the other of these requirements, but Devon County Council has tackled both simultaneously, by setting up Renewable Energy for Devon (RE4D). This project not only gives advice and grants to businesses wanting to install renewable energy technology, but also provides support and training for installers, and commissions studies into the county's renewable energy resources.

How the project works

RE4D was set up by Devon County Council and several partners in 2006, aiming to achieve the following goals in the county:

- Support the development of small-scale renewable energy and take advantage of the renewable energy opportunities presented by Devon's natural environment.
- Provide independent support and advice for those wanting to install renewable energy technology, in particular businesses and community organisations.
- Link local supply and demand for renewable energy technology, to encourage economic growth and job creation.
- Increase the quality and capacity of renewable energy sector businesses, and provide them with qualified leads.
- Reduce Devon's carbon footprint.
- Be a pilot for the Southwest region of the UK.

To achieve these goals, RE4D has surveyed resources and opportunities using Technology Growth Plans, delivered training and support to installer businesses, and helped SMEs, community organisations, households, schools and public sector organisations install renewable energy technology through giving advice and grants to SMEs and communities.

RE4D delivery is managed by Devon County Council and the other partners, who are Devon Association for Renewable Energy, Exeter University – Centre of Energy and Environment, Global Action Plan, Trans-send and Westcountry Energy Action.

Technology growth plans

RE4D has commissioned ten technology growth plans to investigate key factors in the growth of the renewable energy sector. These plans have given RE4D the information it needs to direct its work and have covered a diverse range of subjects, including:

- Development, manufacture and installation of micro-hydro turbines.
- Wood-fuel supply capacity assessment.
- Wood-fuel co-operatives.
- Encouraging the installation of renewable energy on industrial estates.
- Engaging with the construction industry to raise awareness of renewable energy.
- Improving the local supply chain for small scale wind turbines.
- Market analysis to determine the best renewable energy technology for different sectors of the economy.

The hydro power plan has resulted in the development of turbines for modular hydro systems, some made from polymers to reduce manufacturing costs. The turbines are designed for the hydro sites found in Dartmoor and Exmoor, and customers have already been found for prototypes to be installed in 2009. The developers of the turbines will have five years exclusive use, and then the design will be available for use by other companies, and will hopefully be replicated in other parts of the UK.

The wood-fuel co-operative plan, combined with a separate study commissioned to look at wood-fuel resources, has resulted in a wood-fuel producer co-operative being formed in Dartmoor. The co-operative is still in the process of being set up, but RE4D has already helped it to successfully apply to the Forestry Commission for grants to purchase equipment.

Training and business support

From the outset RE4D realised that there was a need to increase the capacity of renewable energy installers to meet the planned increase in demand, and that this was also an opportunity to improve quality. One of the first actions of RE4D was to commission a survey of renewable energy installers, funded by the Learning and Skills Council, to identify skills gaps in the sector. Training courses in technical and business subjects were then provided to help the installers increase their capacity and improve their service. The technical courses allowed electricians to gain specific qualifications for solar photovoltaic installation, and plumbers for solar water heating, and they also covered important but sometimes overlooked aspects such as safe working at heights. RE4D has been working with the local colleges, private providers and sector skills councils to determine the best way forward for training, and several accredited renewable energy courses are now running. RE4D has provided ten 50% grants to SMEs for business development activities such as marketing, website development, team building.

RE4D also facilitates an installer network with an annual meeting and an internet-based discussion forum. This gives installers the opportunity to learn from each other and co-operate on projects. RE4D also helps in other ways, such as running training sessions for planning officers to help them understand renewable energy, and supplying qualified leads to the installers. RE4D ensures that the reputation of the whole sector remains good by visiting or surveying clients after installations for quality control, and when necessary will take action against unsatisfactory installers.

Grants and advice

To build up demand for renewable energy technology, RE4D started by marketing its grants and advice services through its website, case studies, press articles, advertising and holding stalls at public events. All who express an interest are initially sent a questionnaire, and about 50% respond, thereby filtering out those who are not especially interested.

Businesses, communities and public sector organisations who do reply then receive a visit from one of RE4D's mentors. Advice is provided to households over the telephone through the Devon Energy Efficiency Advice Centre, where RE4D supplies a staff member.

The RE4D mentor carries out an energy audit at the business or community organisation, and makes recommendations on efficiency measures such as improved insulation and lighting if required – these must be installed before a grant will be made. The main role of the mentor is to help the client understand the relative merits of the different renewable energy technologies, and to select the one that will be most effective for their situation. RE4D has also made grants available to pay for feasibility studies. Once the client has decided to proceed with an installation, the mentor helps them to complete forms for the RE4D grant, and also any other grants or preferential loans they can apply for. The mentor will also advise on planning permission if required, and help the client gather several quotations for the installation. Because RE4D knows most of the renewable energy installers in the area, the mentor is able to provide the client with a list of potential installers, although does not make recommendations. A benefit for the installers is that anyone who RE4D has worked with will be serious about getting an installation when they ask for a quotation, rather than being a speculative enquirer.

RE4D covers all suitable renewable energy technologies, and has given grants for biomass heating systems, solar PV, solar water heating, wind turbines, hydro schemes and heat pumps. Some installations proceed after advice from RE4D but without a grant from them, usually because the client chooses to apply for a different kind of grant, or because they could not install soon enough to qualify. For example, if their business is based at home, the owner can apply for a Low Carbon Buildings Programme domestic grant.

How users pay

There are two groups of beneficiaries of RE4D's work: renewable energy installers and renewable energy customers.

Installers are entitled to free places on the training courses offered by RE4D, but must 50% match-fund a business development grant. For customers, advice and feasibility studies are provided free. RE4D also provided a total of £250k in 47 capital grants to about half the clients installing renewable energy equipment. SMEs received up to 25% of the cost, and community groups up to 50%. Most clients also receive grants from other sources, most commonly the Low Carbon Buildings Programme, but also the DEFRA Bioenergy Capital Grant scheme, the Dartmoor Sustainable Development Fund and others. Some clients received loans from the Carbon Trust, and most also invested their own money – the total funding leveraged was £805k. One of the benefits of the RE4D grants is that their deadlines encourage clients to move quickly. This increases the rate at which generation capacity is installed and helps the installer businesses to grow.

Benefits

Since RE4D started it has advised 345 SMEs, with over one third of these receiving at least five days assistance. In addition to these, over 70 communities, schools and public sector organisations have also been advised. In total there have been 109 renewable energy installations in organisations so far, including 38 solar thermal, 15 ground source heat pumps, 27 biomass boilers, 15 solar PV arrays, 12 wind turbines and two hydro schemes. A further 16 installations are in progress. At least 18 further installations in domestic buildings have resulted from advice provided by RE4D, even though the domestic sector was not the main target of the programme.

The installations carried out so far represent a combined generation capacity of over 2.1 MW. The energy supplied by these systems was estimated from client questionnaires, supplemented by visits from RE4D staff where needed.

Environmental benefits

RE4D calculates carbon savings based on the estimated energy savings. The installations completed so far result in reductions of about 1,300 tonnes/year in CO₂ emissions. The work setting up a wood-fuel co-operative and some of the biomass boiler installations has resulted in woodland being brought back into management, which can have positive effects on biodiversity.

Social benefits

RE4D's clients benefit from having on-site generation of heat or electricity, reducing their energy bills and often making a visible statement about the value they put on the environment. In the case of community organisations, the savings enable them to provide better services to their users, and schools have also made use of installations in the curriculum. Households have benefitted from the free advice, helping them to make decisions about what types of renewable energy technology will be practical and cost-effective to install.

Economic and employment benefits

Delivering economic benefits is one of the main goals of RE4D, and the results can be seen in the installers and the clients. Clients have reduced energy bills, and expect to see a cumulative saving on electricity bills alone of at least £168k per annum over the lifetime of the equipment installed. At a time of rising energy prices and falling economic growth, reducing spending on energy helps safeguard jobs, as energy costs can represent a significant overhead for many of the rural businesses RE4D works with.

RE4D's work with clients has generated extra business for renewable energy installers in Devon. The free training has made it easier for installers to take on new staff to meet the extra demand. Over 90 people have had places on training courses funded by RE4D so far, and this has also given extra business to the colleges and other organisations that run the courses. It is estimated that as a result of the work of RE4D, 55 jobs have been created in the renewable energy sector in Devon, and a further 16 safeguarded. The capacity of the sector has been increased, and the installers are better trained and able to deliver a quality service to their customers.

Potential for growth and replication

The model used by RE4D, building up both the demand and supply side for the renewable energy sector, could be replicated in other parts of the UK. Most areas, particularly those suffering from deprivation, have funding set aside for economic development, and this is an opportunity to achieve that goal while at the same time improving sustainability and tackling climate change. With the knowledge accumulated through the resource assessment and technology growth plans, RE4D could extend the depth of its activities within Devon, given additional funding, and could extend its activities to cover the whole of Southwest England.

Management, finance and partnerships

The £1.23m funding for the project was provided mainly by the European Regional Development Fund Objective 2 (45%) the South West Regional Development Agency through Devon Renaissance (28%) and Devon County Council (19%). The other project partners and Mid-Devon District Council also provided funding. During 2009 Devon County Council is providing core funding for RE4D, including the RE4D capital grants programme,

and further funding from external sources is being sought to allow the project to develop further.

Partnerships are key to the way that RE4D functions. As well as the funders, other partners include Devon Association for Renewable Energy, Global Action Plan, Westcountry Energy Action, Trans-send and Exeter University. By using the strengths of this wide range of partners, and avoiding them competing with each other, RE4D has been able to present a unified and coherent message to businesses and other organisations in Devon.

The commitment of Devon County Council to reduce CO₂ emissions goes beyond RE4D. Since 2005 it has had a climate change plan, which now aims to reduce emissions by 2.1% per year – a target it has exceeded over the first two years it has been in place. The progress made by the council includes:

- A rolling programme of energy audits on council buildings, and improvements in efficiency being made through lighting, ICT updates, insulation and voltage optimisation. Further plans include automatic metering and reducing lighting energy use.
- An 840 kW biomass boiler has recently been installed at the County Hall, and every member of staff there must have at least one car-free day per week.
- £2m 'Green Challenge Fund' committed for schools to spend on sustainable energy capital projects. Zero-and low carbon schools are being developed, the first two are Bideford Community College (low carbon demonstration status for sustainability by DCSF) and Montgomery School in Exeter (zero carbon, exploring passivehaus principles) and partially supported by DCSF Zero Carbon Task Force.

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This report is based on information provided to the Ashden Awards judges by RE4D, and findings from a visit by one of the judging team to see their work.

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